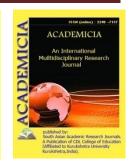


ISSN: 2249-7137

Vol. 11, Issue 10, October 2021 Impact Factor: SJIF 2021 = 7.492



ACADEMICIA An International Multidisciplinary Research Journal



(Double Blind Refereed & Peer Reviewed Journal)

DOI: 10.5958/2249-7137.2021.02342.9

COMPARATIVE ANALYSIS OF RISK PERCEPTION AND RISK MANAGEMENT STRATEGIES AMONG VEGETABLE GROWERS IN PUNJAB STATE, INDIA AND NAKURU COUNTY, KENYA

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ABSTRACT

Vegetable growers are faced with wide range of risks that have to be managed, especially in developing nations. The risks are on a trajectory due to rise in trading of agricultural produce globally, ravages of climate change and emerging pandemics that jeopardise vegetable production enterprises. This study presents results of an investigation into risk perception by vegetable growers in two regions; Punjab State, India and Nakuru County, Kenya. Few studies have carried out a comparative investigation across two regions touching on risk perception among vegetable growers, risk management strategies adopted and barriers that prevent successful mitigation of the risks. Using descriptive and inferential statistics, data from 200 respondents was analysed and market risks was ranked as the leading source of risks. Improved agricultural practices was the main risk management strategy employed by (77%) of the growers in Punjab and (79%) in Nakuru. (63%) of growers in Punjab and (62%) in Nakuru also used market survey as a strategy. Lack of information on pests and diseases (53%), marketing challenges (50%) and lack of access to extension services (31%) were the major barriers to risk management strategies among vegetable growers in Punjab; compared to lack of access to capital (57%), lack of information on plants and diseases (47%) and lack of access to extension services (27%) in Nakuru. This study seeks to provide an understanding to existing risk challenges and suggest areas of improvement to support efforts for risk management and reduction.

KEYWORDS: barriers, risk, risk management strategies, risk perception, risk sources.

ACADEMICIA

Vol. 11, Issue 10, October 2021 Impact Factor: SJIF 2021 = 7.492

REFERENCES:

ISSN: 2249-7137

Abdulai, J., Nimoh, F., Darko-Koomson, S &Kassoh, K. F. S., 2017. Performance of vegetable production and marketing in peri-urban Kumasi, Ghana. *Journal of Agricultural Science*, *9*(3), p. 202.

Adebayo, O. O., 2012. Effects of family size on household food security in Osun State, Nigeria. *Asian Journal of Agriculture and Rural Development*, Vol. 2, No. 2, pp. 136-141.

AGRA., 2017. How stronger market access is helping farmers in Kenya. https://agra.org/how-stronger-market-access-ishelping-farmers-in-kenya/. Accessed on 15th July 2021

Amekawa, Y., Hongsibsong, S., Sawarng, N., Yadoung, S & Gebre, G.G., 2021 Producers' perceptions of public good agricultural practices standard and their pesticide use: The Case of Q-GAP for Cabbage Farming in Chiang Mai Province, Thailand. *Sustainability*.13(11), p. 633.

Anju, D., 2017. Vegetable crops: Risks and Losses Faced by Farmers. *Advances in Research* 12(6), pp. 1-8

Anonymous., 2014. Levelling the field: Improving opportunities for women farmers in Africa. Washington, DC: World Bank.

Anonymous., 2016. *Manual on Good Agricultural Practices (GAP)*. Asian Productivity Organization.

Aseto J., Anggraeni, K & Mburu J., 2020. *Introducing Green Horticulture at Lake Naivasha in Kenya: Local And International Market Analysis Reports*. Nairobi: GOALAN.

Bala N., 2010. Selective discrimination against women in Indian agriculture - A Review. Agricultural Reviews. (31), pp.224 – 228

Bashangwa, M. B., Mireille, M., Egesa, A. O. Nguezet, P. M., Vanlauwe, B., Ndimanya, P &Lebailly, P., 2020. Land access in the development of horticultural sustainability: Crops in East Africa. A Case Study of Passion Fruit in Burundi, Kenya, and Rwanda (12), p. 3041.

Botterill, L., & Mazur, N., 2004. *Risk and risk perception: A literature review*. Kingstrom, ACT: Australian Government Rural Industries Research and Development Corporation.

Carrer, M., J., Silveira, R. L., Vinholis, M. B., Filho, H., M., 2018. Determinants of agricultural insurance adoption: evidence from farmers in the state of São Paulo, Brazil, *RAUSP*.4, p. 55

Dercon, S., Hoddinott, J., Woldehanna, T., 2005. Shocks and consumption in 15 Ethiopian villages, 1999–2004. J. Afr. Econ., 14 pp. 559-585

FAO (2013). Aquastat. <u>http://www.fao.org/nr/water/aquastat/water_use/index.stm</u>

Flaten, O., Lien, G., Koesling, M., Valle, P.S. and Ebbesvik, M. 2005. Comparing risk perceptions and risk management in organic and conventional dairy farming: empirical results from Norway. *Livestock Production Science*. 95, pp. 11-25.

Francesco, R., & Hanne K., 2019. Sustainable food systems through diversification and indigenous vegetables. An Analysis Of the Southern Nakuru County. Rome: Sustainable Agrifood Systems Strategies (SASS).



Fresh Produce Exporters Association of Kenya (FPEAK)., 2021. *fpeak.org*. Retrieved August 15, 2021, from fpeak.org: <u>https://fpeak.org/update-on-the-state-of-the-horticulture-industry-in-kenya-2021/</u>

Gillespie, J & Mishra, A., 2011. Off-farm employment and reasons for entering farming as determinants of production enterprise selection in US agriculture: *Aust. J. Agric. Resour. Econ.* 55, pp. 411–428.

Govil, D. R., 2013. *Dvara Research*. Retrieved August 11, 2021, from dvara.com: https://www.dvara.com/blog/2013/01/30/why-dont-indian-farmers-grow-more-fruits-and-vegetables/

Goodwin, B. K & Mishra, A. K., 2000. An analysis of risk premia in U.S. Farm-level interest rates. *Agricultural Finance Review*. 60, pp. 1-16.

Greiner, R., Patterson, L. and Miller, O., 2008. Motivation, risk perceptions and adoption of conservation practices by farmers. *Agricultural Systems* 99 (2-3), pp. 86-104.

Hardaker, J.B., Lien, G., Anderson, J.R., Hurine, R., 2015. Coping with Risk in Agriculture: Applied Decision Analysis, 3rd ed.; CAB International Publishing Company: Wallingford, UK. p. 296.

Harwood, J., Heifner, R., Coble, K., Perry, J &Somwaru, A., 1999. Managing risk in farming: Concepts, Research, and Analysis; Department of Agriculture, Economic Research Service, Market and Trade Economics Division and Resource Economics Division: Washington, DC, USA.

Harvey, C.A., Rakotobe, Z.L., Rao, N.S., Dave, R., Razafimahatratra, H., Rabarijohn, R.H., Rajaofara, H & MacKinnon, J.L., 2014. Extreme vulnerability of smallholder farmers to agricultural risks and climate change in Madagascar. Philos. Trans. R. Soc. Lond., *B, Biol. Sci.* p. 369.

Harvey, C.A., Saborio-Rodríguez M., Martinez-Rodríguez M., Viguera R. B., Chain-Guadarrama A., Vignola R., & Alpizar F., 2018. Climate change impacts and adaptation among smallholder farmers in Central America. *Agric & Food Secur* 7, p.57

Heymann, D. L., 2005. Social, behavioural and environmental factors and their impact on infectious disease outbreaks. *J Public Health Policy*. 26, pp.133–139.

Holt, Matthew., & Chavas, Jean-Paul., 2002. The Econometrics of Risk. 10.1007/978-1-4757-3583-3_11.

Huirne, R. B. M., 2003. Strategy and risk in farming. Njas – Wageningen. J. Life Sci. 50, p. 249–259.

Ilbery, B., Maye, D., Ingram, J & Little, R., 2013. Risk perception, crop protection and plant disease in the UK wheat sector. *Geoforum*, *50*, pp. 129–137.

Jain, R. C. A & Parshad, M., 2006. Working Group on Risk Management in Agriculture for the 11th Five Year Plan (2007–2012). Government of India Planning Commission, New Delhi.

Jankelova, N., Masar, D & Moricova, S., 2017. Risk factors in the agriculture sector. Agric. Econ.



- Czech, 63, pp. 247-258.

Kisaka-Lwayo, M & Obi, A., 2012. Risk perceptions and management strategies by smallholder farmers in KwaZulu-Natal Province, South Africa. *Int. J. Agric. Manag.*, 1, pp. 28–39.

Komarek, A. M., De Pinto, A & Smith V. H., 2020. A review of types of risks in agriculture: What we know and what we need to know. *Agricultural Systems*, vol. pp. 178,102738

Legesse, B. & Drake, L., 2005. Determinants of smallholder farmers' perceptions of risk in the Eastern Highlands of Ethiopia. *Journal of Risk Research*, 8(5), pp.383-416.

Lewin, K. M,. 2007. *Improving Access, Equity and Transitions in Education: Creating a Research Agenda*. University of Sussex, Falmer, Brighton BN1 9QQ, : CREATE.

Lien, G., Flaten, O., Ebbesvik, M., Koesling, M. & Valle, P.S. 2003. Risk and Risk Management in Organic and Conventional Dairy Farming: Empirical Results from Norway. Paper presented at the International Farm Management Association

Lin, B. B., 2011. Resilience in agriculture through crop diversification: Adaptive management for environmental change. *BioScience*. *61*, pp.183–193.

Mahajan, G., 2016. Effect of kodo millet (Paspalumscrobiculatum) based intercropping system on yield and economics of kodo millet under rainfed conditions. *New Agriculturist*. 27(1), pp.121-124,

Manik, B. K., & Ghosh P., 2019. The Indian Agro-Sector - vulnerable to Fragile Agro Policies. *International Journal of Engineering & Technology*. 8, pp. 202-205

Mannon, S.E. 2005, Risk takers, risk makers: Small farmers and non-traditional agro-exports in Kenya and Costa Rica. *Hum. Organ.* 64, 16–27.

Marra, M., Pannell, D. J., &Ghadim, A., 2003. The economics of risk, uncertainty and learning in the adoption of new agricultural technologies: Where are we on the learning curve? *Agr Syst.* 75, pp.215–34.

Menapace, L., Colson, G & Raffaelli, R., 2015. Climate change beliefs and perceptions of agricultural risks: An application of the exchangeability method. *Global Environ Chang* 35, pp.70–81.

Mohammad, I., K., Sharad B., & Gaurav M., 2020. Socio-Economic Profile of Vegetable Growers under Horticulture based Module of Farmer FIRST Project in Balaghat (M.P.), India. *International Journal of Current Microbiology and Applied Sciences*, *9*, pp.3252-3257.

MunMun, G., & Arindam G., 2014. Analysis of women participation in indian agriculture. *IOSR Journal of Humanities and Social Science*. 19, pp.2279-837.

Munshi, S., 2020. https://www.weforum.org/agenda/2017/10/indias-women-farmers/.

Muriithi, B., &Matz, J., 2014. Welfare effects of vegetable commercialization: Evidence from smallholder producers in Kenya. *Food Policy*. 50, pp.80–91.

Musser, W. N & Patrick, G. F., 2002. How much does risk really matter to farmers? In: A Comprehensive Assessment of the Role of Risk in US Agriculture. *Springer*, USA.



Muyanga, M & Jayne, T. S., 201). Effects of rising rural population density on smallholder agriculture in Kenya. *Food Policy*, vol. 48, pp. 98–113.

Nair, Reena &Barche, Swati. 201). Protected cultivation of vegetables -present status and future prospects in india. Present Status and Future in India. *Indian Journal of Applied Research*. Vol. IV. Issue VI.

Nasim A., Sinha D.K., & Singh K.M., 2018. Productivity and resource use efficiency in wheat: A Stochastic Production Frontier Approach. *Economic Affairs*, Vol. 63, (3), pp. 01-06.

Navjot, S.S., & Poonam, K., 2014. Profitability analysis of vegetable growers vis-a-vis farm size in Punjab, *Journal of Agricultural Sciences*, 5(1-2), pp.11-17

Niles, M. T., Brown, M & Dynes, R., 2016. Farmer's intended and actual adoption of climate change mitigation and adaptation strategies. *Clim Chang* 135, pp. 277–95.

Otieno, O.P., 2019. Women and agriculture in rural Kenya: Role in agricultural production. *International Journal of Humanities and Social Science*. Vol. 1.

Palinkas, Peter & Szekely, Csaba., 2008. Farmers' risk perception and risk management practices in international comparison. *Bulletin of the SzentIstvan University* 47554, SzentIstvan University, Faculty of Economics and Social Sciences.

Pelka, N., 2015. Does weather matter? How rainfall affects credit risk in agricultural microfinance. *Agric. Financ. Rev.* 75, pp.194-212,

Rapholo, M.T & DikoMakia L., 2020. Are smallholder farmers' perceptions of climate variability supported by climatological evidence? Case study of a semi-arid region: In *South Africa International Journal of Climate Change and Strategies Management*, vol. 12, no. 5, pp. 571-585.

Rejesus, R. M., Mutuc-Hensley, M., Mitchell, P, D., Coble, K. H & Knight, T. O., 2013. U.S. Agricultural Producer Perceptions of Climate Change. *Journal of Agricultural and Applied Economics*, pp.701–718.

Singh, Taranjeet., 2017. Issues and Challenges of Indian Agriculture. *International Journal of Research in Engineering, IT and Social Sciences.* 7, pp. 75-78

Singh, D., Prakash, S. &Saroj, P.L., 2006. Impact of perceived characteristic and adoption level of trained trainees in KVK about plant protection measures. *Annals PlantProtection Sciences*. 14 (1), pp. 215- 217.

Singh & Vinay., 2013. Gender participation in Indian agriculture: An ergonomic evaluation of occupational hazard of farm and allied activities. *International Journal of agriculture, Environment and Biotechnology*, pp.157-168.

Sunny, K & Sanjay, K., 2019. Performance of vegetable production in India with special reference to Punjab. *Indian Journal of Agricultural Sciences* 88(7), pp.153-157

Sulewski, P & Kłoczko-Gajewska, A., 2014. Farmers' risk perception, risk aversion and strategies to cope with production risk: an empirical study from Poland. *Studies in Agricultural Economics*, *116*, pp.140-147.



Tudor, K., Spaulding, A., Roy, K & Winter, R., 2014. An analysis of risk management tools utilized by Illinois farmers. *Agricultural Finance Review*. 74. 10.1108/AFR-09-2012-0044.

Ullah, R., Shivakoti, G.P& Ali, G., 2015. Factors effecting farmers' risk attitude and risk perceptions: The case of Khyber Pakhtunkhwa, Pakistan. *Int. J. Disaster Risk Reduct*.

Velandia, M., Jenkins, Amanda & Larson, James & Roberts, Roland & English, Burton & Martin, Steve & Martin, Steven., 2009. Factors Influencing Selection of Information Sources by Cotton Producers Considering Adoption of Precision Agriculture Technologies. *Applied Economics Association*, pp.26-29.

WFP (2015). Kenya Linking Smallholder Farmers to Markets.