

Threats to Potato Production in Nyandarua County

POLICY BRIEF

November 2019



Key messages

- 1. Rainfall variability leads to decreased potato production in Nyandarua County. Enhanced seasonal climate forecast and timely planting will enable farmers to utilize the available rains at different stages of potato growth.**
- 2. Lack of clean seeds is also a threat to potato production in Nyandarua County. Clean potato seeds should be made available to farmers in Nyandarua County for increased production.**
- 3. Lack of weight standardization on various markets leads to exploitation of farmers through package of bags with an extended woven net. The ministry of agriculture in consultation with the county governments should come up with a standard potato packaging policy in Kenya to protect farmers from exploitation.**

Introduction

Climate variability affect the ability to increase food production as required by the growing population in Kenya, creating a need to assess factors that influence potato yields. Variations of Climate elements especially rainfall is a possible cause of variations of potato yields in Nyandarua County. Effects of rainfall variability have been felt in many parts of Kenya leading to low food supply and death of livestock in humid and semi-arid regions. In Nyandarua County rainfall has shown a decreasing trend during the long rain season and an increasing trend during short rain season from 1998 to 2009. Rainfall variability is significant in both long rain and short rain seasonal with annual trends ranging from -25.2473 in 2009 to +48.9891 in 2007. Seasonal rainfall variability trend ranges from -61.0170 in 2008 to +105.7627 in 2007 during the long rain season and -69.7561 in 2007 to +61.7886 in 2006 during the short rain season. Research is required on linkage between rainfall variability and potato yields¹ a gap that necessitated this study. Nyandarua County is vulnerable to rainfall variability due to overreliance on rain-fed agriculture. The effect of rainfall variability leads to variation of agriculture production. This study provided an understanding of the challenges facing potato production in Nyandarua County.



Plate 1: Major economic activities in Oljoro-orok Ward

Why Irish Potatoes

Potatoes are important food and cash crops in many parts of Kenya and an important source of income and employment in rural areas². In Nyandarua County potatoes farming (Plate 1) is the main source of food, income, employment and source of revenue. Out of 100,000 ha of land under potato cultivation in Kenya, 17,500 ha (17.5%) are in Nyandarua County³. The land under potatoes was

not uniform between 1999 and 2009 but ranges between 1400 hectares in 1999 to 3112 hectares in 2007. As shown on Figure 1, 71.4% of households in Nyandarua County were potato farmers, (5.2%) engages in maize farming, 7.3% are vegetable farmers and 16.1% were dairy farmers⁴.

Reasons for low Irish Potato Returns in Oljoro-orok Ward

Farmers in Nyandarua County observed that rainfall variability (45%), clean seeds (33%), lack of standardized marketing weight of a bag of potatoes (10%) diseases (6%) and the cost of farm inputs (6%) as the main reasons for declining potato yields. Rainfall is the only source of water to potatoes farming in Nyandarua County and therefore its variation leads to decline in potato yields. Lack of clean seeds (Plate 2) causes low yield since certified varieties are not available and when available they are very expensive and beyond reach to most of the farmers leading to low potato production. Lack of standardized weight of potato bag (Plate 3 & 4) deny farmers their rightful share of revenue as the bag is sold at similar prices to the ordinary bag and

no reference to weight is made. Inadequate field officer in the County was also identified as a challenge in potato production. Field officers need to inform farmers on the modern methods of potato farming. These should include the types of seeds to plant, right spacing for planting (Plate 5) and appropriate pesticides to apply in their farms. When extension officers are few, farmers lack the much needed advice on scientific methods of farming which leads to low potato production. Potato diseases such as potato blight have also led to pre-harvest and post-harvest losses in the County. Late blight and bacterial wilt are regarded by farmers in Nyandarua as the most common diseases⁵.



PLATE 2: Factors influencing Potato yields in Oljoro-orok Ward

Opportunities to Improve Potato Returns

Farmers in Nyandarua County need to embrace modern technology and use seasonal climate forecasts from Kenya Meteorological Department. Improved communication and technology will enable transfer of information and reach many farmers within a short time. The time of planting is very important as it gives the plant an opportunity to mature before the dry spell. The presence of Nyahururu Meteorological Station in the division can help in timely dissemination of climate forecasts. The annual farmers field day organized by Farmers Training College in the neighboring Gatimu ward is an important event that should be utilized to educate farmers on the best potato farming practices. The field day is an opportunity for farmers to learn the emerging technologies and innovation to boost potato yield. All farmers should be sensitized on the importance of attending the event because the products displayed there are mostly meant to benefit the ward hence making farming attractive and reduce migrations.

Way Forward

1. Enhanced seasonal climate forecast and timely planting will enable farmers to utilize the available rains at their different stages of potato growth.
2. Clean seeds should be made available at affordable cost so that more farmers can plant them to reduce losses resulting from diseases and other negative traits such as low resistance to drought that are passed by planting the same harvested seeds.
3. Standard potato packaging policy should be introduced in Kenya by the ministry of agriculture in consultation with County governments to protect farmers from exploitation.



Plate 3: Potatoes packaging with extended woven bags in Nyandarua County



Plate 4: Transportation of an extended bag of Potatoes



Plate 5: Potatoes planting in Nyandarua County

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About the Policy Brief

This brief is based on the report of a Masters project titled Analysis of Rainfall variability on Irish potato production in Oljoro-orok ward, Nyandarua County for the period 1999-2009. The research was undertaken by AmonKaranja (2013) under the supervision of Prof. Chris Shisanya and Dr. George Makokha.

Reference

1. Metz, B., Davidson, R., Boseb, P., Dave, R., Meyer, L. (2007). Climate change mitigation contribution of working group III to the fourth assessment report of the intergovernmental panel on climate change. Cambridge, UK.
2. Olanya O, Lunjaho C, Nderitu S, Kabura J, El-Bedewy R, Waling A. (2006) yield performance and release of four late blight tolerant potato varieties in Kenya. Journal on. Agro S.; 57-61
3. Jaetzold, R., Schmidt, H., Hornetz, B. & Shisanya, C.A. (2007). Farm Management Handbook of Kenya Vol 2 (2nd Edition): Central Kenya. Natural conditions and farm management information. Ministry of Agriculture and GTZ, Nairobi.
4. Karanja, A. M. (2018) Potentials of Agricultural Production in Light of Climate Variability in Oljoro-orok Division, Kenya. Asian Journal of Agricultural Extension, Economics and Sociology, 27(4): 1-9, 2018
5. Olanya, O., Nyankanga, R., Wien, C. and Ojiambo, S. (2004). Farmers' cultural practices and management of potato late blight in Kenya highlands: implications for development of integrated disease management, Nairobi.

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