

THE ECONOMICS OF PRODUCTION AND
MARKETING OF POTATOES IN MERU
DISTRICT, KENYA

By

STEPHEN GICHOVI MBOGOH

A thesis submitted in part fulfilment for the Degree of Master
of Science in Agriculture in the University of Nairobi.

June, 1976.

ABSTRACT

Potatoes are an important food in Kenya. However, the market is characterized by large fluctuations in both availability and prices of potatoes, and there is need for more planning at both micro and macro levels. Information on the structure, conduct and performance of the potato industry is somewhat limited and surveys are required to provide the necessary data. Such data for planning purposes must be gathered through surveys in representative potato producing areas.

This thesis gives the findings from a survey conducted in Meru District, where a random sample of 75 growers and 23 traders were interviewed, between September 1975 and January 1976. The major hypotheses tested are:

(i) yield depends on relative share of potatoes in the farm production structure and is proportional to the level of purchased inputs;

(ii) potato acreage is influenced by price levels during the season prior to planting;

(iii) local market prices are influenced by inter-regional prices and will differ by transfer costs;

(iv) net returns to growers in Meru can be increased by shifting potato supplies to the market through storage;

(v) competition in the trade is limited and growers have little bargaining power because there are few

traders so that the growers will be associated with particular traders or outlets;

(vi) growers are willing to cooperate in solving marketing problems.

Kerr's Pink, the commonly grown potato variety in Meru, takes about $3\frac{1}{2}$ months to mature. Two crops are produced during the year, one between February and June (Short Rains season) and the other between August and December (Long Rains season). The competing enterprises include pyrethrum, wheat, vegetables, maize and coffee; livestock is only a minor enterprise. Crop rotation involves any of these enterprises.

The major inputs in potato production are machinery for land preparation, seed, fertilizers, plant protection chemicals and labour. A crop may require 2 to 3 weedings and 3 to 4 sprayings (with Dithane M45 to control blight) before it matures. Production cost per bag of potatoes was found to be Shs. 16/89, shs. 19/79 and shs. 27/66 in Kibirichia, Kiirua and Upper Abothuguchi respectively. Major constraints in production were cash, to pay for inputs such as fertilizers or protection chemicals, and labour, especially at planting, weeding and spraying periods. Blight was the only severe disease limiting production.

Two types of supply systems are involved in marketing Meru potatoes: the local supply system involves trade within Meru District, while the interregional supply system involves

trade between Meru and areas outside the district. Associations between growers and particular traders or outlets, based either on services given to particular growers by the trader they supply or on friendship or kinship ties, tended to reduce competition in the trade. Quantities of potatoes supplied to the market depended on the amounts retained by growers for seed and for family consumption. The amounts retained for seed and for family consumption were estimated to be 25% and 13% respectively; therefore, only about 62% of the output is marketed.

Three types of market available for Meru potatoes were considered: (i) a local market (Kibirichia) in the producing zone; (ii) an urban market (Meru town) within the district; and (iii) a major consumer market (Wakulima, Nairobi) outside the district. Prices in these markets showed the same trend or developments during the year, but there were times when they differed appreciably so that it was possible to ship potatoes between these markets at a profit. Marketing costs included transfer costs, storage costs and fees such as the cess of shs. 1/05 per bag of potatoes taken out of the district. However, storage periods rarely exceeded a month, and the storage costs rarely exceeded a shilling per bag per month.

Hypothesis tests indicated that yield depended on the level of purchased inputs and was influenced by the relative size of potato plot, which was adopted as a measure of

the relative importance of potatoes in the farm. However, the small and variable amounts of fertilizers used did not have significant impact on yield, so that the actual soil fertility condition before farming was significant. No relationship was established between potato acreage in a given season and the prices of potatoes during the previous season. Prices in the local markets differed by transfer costs and were correlated to Nairobi prices, though market integration may have been low. Local markets in Meru were estimated to handle most of the marketed output, but there were inadequate outlets because the prices obtainable were rather low: growers did not get adequate net returns. However, net returns could not be increased by shifting supplies to the market through storage because prices in the Nairobi markets, which were assumed to be major outlets for potatoes so stored in Meru, were found to be at their peak at the time when Meru potatoes are harvested. Growers in Meru would like to form an organization to store, grade and secure markets for their potatoes.

Lack of difference between prices for seed and eating potatoes discouraged storage and sprouting of potatoes to be sold as seed-potatoes at the planting time. Storage was another problem: farm storage facilities could only permit a maximum storage period of 6 weeks, if losses were to be avoided. Roads to the producing zones were rough and inaccessible when wet; besides, means of transport were rare and

expensive. However, growers have to hire transport when supplying the local trading centres.

Two main problems in potato production and marketing are evident: (i) there is need for more and intensive work on yield trials (at varying amounts of inputs) before growers can be advised on the right types and amounts of fertilizers to be used in production; and (ii) an organised potato marketing body is needed to combat the observed inefficiencies or distortions in interregional prices and improve the potato marketing in the country.