Economic Analysis of the Pyrethrum Industry in Tanzania
The Case of Njombe District
By

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(1993)

Abstract

In this study, an attempt was made to identify the factors which had contributed to the decline in smallholder pyrethrum production output in Njombe district, Iringa region. The other aim was to assess the operational problems of the Mafinga plant. Specific objectives of the study were to:

i) describe the socio-economic conditions of the farm households which were related to agricultural production activities;
ii) determine the husbandry practices and economic factors which affected pyrethrum production in the study area;
iii) analyse and compare the gross margins of selected major crop enterprises in the study area and establish their relative profitability;
iv) identify the major problems affecting the performance of the Mafinga Pyrethrum Extraction Plant (MPEP); and
v) put forward recommendations which might help to revive the pyrethrum industry in the country.

The study made use of questionnaires, interviews, focus group discussions and documentary reviews as the main instruments for data collection. The main sources of the primary data were the household heads. However, additional data were obtained from extension agents, co-operative and union, pyrethrum board members, and the MPEP management.

A sample of 60 smallholder pyrethrum producers was used. The le was drawn from a population of such producers in 10 villages. Villages within this sample were selected on the criteria of accessibility through public transport and the villages' relatively high pyrethrum output sales. A list of such villages was obtained from the co-operative union at Njombe. Then, a systematic random sampling procedure was used to draw a sample of representative villages for the study.

Farmers for the interview were selected by a systematic random sampling procedure after obtaining a list of pyrethrum farmers from cooperative societies which bought the crop. On the

other hand, the Mafinga pyrethrum Extraction plant was purposely selected for this study as it was the main plant which processed pyrethrum in the study area.

In the main, data analysis made use of descriptive statistics, log linear and lagged multiple regression models, the chi-square statistic and the gross margin data analysis. Field data were coded and stored into a dBase computer programme at Sokoine University of Agriculture. Then, the data were retrieved into an SPSS PC programme where descriptive statistics and gross margin were computed. Multiple regression analysis was done by use of a TSP computer programme.

The study established that the major crop grown by households in the study area was maize which got 51% of the average land owned by each household, while pyrethrum and potatoes got 14% and 8%, respectively. Maize was regarded as the first preferential crop for production (45%) and income generation, while pyrethrum ranked second (28.5%) and potatoes third (13.3%). In this context, therefore, maize received more attention in terms of better husbandry practices, resource allocation and location of the farms as compared to pyrethrum.

Using the 1991 /92 producer prices, gross margin analysis had shown that potatoes were the most paying crops to household labour. They generated Tshs. 2133.10 per man-day followed by maize sold in the unofficial market (Tshs.341 per man-day) and then pyrethrum (Tshs.258 per man-day). Maize sold in the official market fetched the least (Tshs.240 per man-day).

Pyrethrum producers, however, concentrated on maize production because of relatively better access to a more reliable unofficial market for the crop than others. The official marketing institutions in the district were financially weak, and performed poorly in pyrethrum marketing. Availability of planning and flower drying materials and labour also limited pyrethrum production in the district. A critical labour shortage usually occurred in March (139.78 man-days) and April (-65.90 man-days).

Regression and chi-square analyses had further revealed that levels of input use, small acreage under the crop, delayed crop rotation, low weeding frequency and inadequate crop production knowledge had significantly constrained the smallholder pyrethrum production in Njombe district. Further, low real pyrethrum producer price relative to the real producer price of maize and potatoes, which were the main competing crops, also had a statistically significant negative effect on pyrethrum production in the district.

In general, it was observed during the study that pyrethrum production in Njombe district was determined by a variety of factors. They ranged from socio-economic ones like the number of full-time members of the household which determined the effective size of the household labour-force, through husbandry practices like the weeding frequency, to price factors like the price of competing crops like maize and potatoes. These factors, according to the study, had resulted into low pyrethrum output production, low output per hectare and poor quality of the crop produced.

Further, the study noted that low quality of the incoming flowers, shortcomings in the MPEP layout, old age of the machinery, frequent dryer breakdown, discontinuity in processing, inappropriate storage facilities and high administrative costs were among the main causes of the lower performance of the plant. The study observed that although Tanzania had big potentials of gaining more from pyrethrum sales in the world market, these potentials were yet to be fully exploited because of, among other things, the inability of the Mafinga plant to refine its crude extract, improve its selling methods and lower its processing and administrative expenses. Consequently, the study made the following recommendations:

i) Youths ought to be encouraged to engage in pyrethrum production instead of engaging themselves in non-farm activities away from their village for wage earning. The pyrethrum board could play a leading role in this.
ii) Pyrethrum producers ought to be encouraged to add more of their fallow land to pyrethrum production through provision of better farming skills, input supply (especially drying materials) and marketing services.
iii) Higher pay in form of producer prices and second payment ought to be considered.
iv) should flower drying involve the use of more fuel wood, forestation campaigns should go hand in hand with other pyrethrum production related campaigns. This would ensure both environmental conservation and a sustainable supply of fuelwood.
v) Should co-operatives remain in business, the same ought to run the Mafinga plant. This would enable the co-operatives in future to harmonise producer prices and the average sales price of the plant's products.
vi) Should the pyrethrum board (a government institution owning the plant and controlling with autonomy the pyrethrum industry in the country) remain in business, it should relieve itself of some of its duties by selling some of the plant shares to private business firms and co-operatives.