MODELING EFFICIENT RESOURCE ALLOCATION PATTERNS FOR ARABLE CROP
FARMERS IN NIGER STATE, NIGERIA: A LINEAR PROGRAMMING APPROACH

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ABSTRACT

This study examined the resource use pattern for small scale arable crop-based farmer in Niger State,
North central Nigeria during the 2009 cropping season considering available resources. Linear
Programming model was used for optimizing gross margins. The results revealed a considerable
divergence between the existing and optimum plans under both limited and borrowed capital situations.
Results indicated that resources were not optimally allocated and after optimization, gross margins could
be increased. Cereal-legume cropping patterns showed dominance in both the existing and optimum
plans. As a result of inter variation in capital resource endowment and management; the gross margins
were higher in the borrowed capital (N87,322.89/ha) as compared to the limited capital situation
(N51,211.54/ha). The optimum plans prescribed more of cash-crop-based enterprises. The study
recommended that farmers should organize farm resources as prescribed by the optimum plans. This
should be complemented with strong financial support, farm advisory services and adequate supply of
modern inputs at fairly competitive prices would enhance the prospects of the small holder farmers.

Keywords: efficient, resource allocation, optimization, linear programming, gross margin.

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