Research Application Summary

# Household objectives and achievement levels among Uganda's hot pepper, french beans and okra crops farmers

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**Abstract**

Ugandan farmers are increasingly adopting perceived High Value Crops (HVCs) including Chillies *(Capsicum annum)*, French beans *(Phaseolus vulgaris)*, and Okra *(Abelmoschus esculentus)*. This is aimed at addressing priority household objective of increasing incomes. This paper aimed at determining the priority problems that farmers' strive to achieve when they adopt these HVCs and the extent to which the objectives are achieved. Empirical results show that among the priority objectives, payment of school fees, investing in trade, good cash flow, procurement of more land, medical care, purchase of livestock and a car or motorcycle, only the fees objective were being achieved using HVCs income.

Key words: French beans, high-value crops, hot pepper, household objectives, Okra

**Résumé**

Les agriculteurs ougandais adoptent de plus en plus de cultures reconnues de grande valeur (HVCs) comprenant les piments *(Capsicum annum)*, les haricots verts *(Phaseolus vulgaris)*, et l'okra *(Abelmoschus esculentus)*. Ceci poursuit l'objectif d'adresser les priorités des ménages dans l'augmentation des revenus. Le présent article vise à déterminer les problèmes prioritaires que les agriculteurs s'efforcer de résoudre quand ils adoptent ces HVCs et l'ampleur à laquelle les objectifs sont atteints. Les résultats empiriques montrent que, parmi les objectifs prioritaires ( le paiement des frais scolaires, investir dans le commerce, bonne trésorerie, acquisition de beaucoup de terres, les soins médicaux, l'achat du bétail et d'une voiture ou une moto), seul l'objectif des frais scolaires a été atteint en utilisant le revenu des HVCs.

Mots clés: Haricots verts, cultures de grande valeur, piment, objectifs des ménages, Okra

**Background**

Ugandan farmers are increasingly embracing production of hot pepper *(Capsicum annum),* French beans *(Phaseolus*

*vulgaris),* and Okra (*Abelmoschus esculentus*) *albeit* slowly (MAAIF, 2005). As noted by Shibanda (1999), smallholder resource users are described as having objectives and decisions, and therefore represent an organized decision-making unit. Decisions define the choice of farming strategy and enterprises adopted by the households. Identification of farm household objective(s) is key in defining their actions and intervention programs (Bekele, 2004) yet many studies have ignored this aspect.

**Literature Summary**

Households are decision making units (Dixon *et al.*, 2001; Okech *et al.,* 2004; Holden *et al.,* 2005 ) and objectives tend to form a hierarchical structure with food and nutritional security normally among the first priorities. According to Majewski and Wojciech (1999), objectives can be defined as "wishes with respect to the future, which constitute basis to target final actions". It is, therefore, hypothesised that farmers' response and their choice of farming strategy will be significantly affected by their pursued objectives. Households differ in their choices and preferences (Schunk, 2006).

Conceptually, resource allocation basically assumes that farmers' objective function are premised upon, (i) preferences revealed in utility functions, (ii) many objectives and goals which and conflict, (iii) the objectives are functions of the decision model variables, and (iv) the objective of production is to achieve satisfactory levels of income subject to limitations imposed by the environment. Household investment decision-making is a function of personal, household, village and regional level factors. These include endowments of physical, human, social, financial and natural capital (Nkonya *et al.,* 2004).

Unfortunately, farmers objectives in many instances are rarely taken into account during policy formulation to address their problems. Farm level objectives, and the extent to which these objectives are achieved remains unclear to many. In Uganda farmers strive to address their objectives through partly adopting perceived High Value Crops (HVCs) including hot pepper, french beans and okra, among other enterprises. The level of profitability of these crops is also not clear.

**Study Description**

This research used cross-sectional data from household a survey that was conducted during the second season of 2008. The study was conducted in six districts of Uganda. These included Luwero, Masaka, Mpigi, Mukono, Rakai and Wakiso where

the crops of interest were mostly grown in Uganda (IDEA, 2001). A multi-stage purposive sampling was used at the farming system, zone and district levels based on production figures of the study crops. Data were collected from 273 randomly selected households that had adopted any of the three crops (for 3 years at the time of collecting the data. Data were analyzed using SPSS (ver. 12) and STATA (ver.9.0) computer software. Analytical procedures included; frequencies, descriptive statistics (measures of central tendency and dispersion), weighted averages, Gross Margin, and paired samples t-tests. Gross Margin Analysis, a simple but realistic measure of enterprise profitability in the short-run production period (Mansoori *et al.,* 2009) was computed as follows,

$$GM_i^s = Y_i^s Py_i^s - \sum_{x=1}^{n} VI_x^s P_x^s$$

Where, GM is gross margin per hectare of the $i^{th}$ crop enterprise in $s^{th}$ season; $Y_i^s$ is production per hectare for a given crop enterprise in $s^{th}$ season, $Py_i^s$ is unit price of crop product for a given crop enterprise in the $s^{th}$ season, $VI_x^s$ refers to quantity of variable inputs for a given crop enterprise in the $s^{th}$ season $P_x^s$ is unit cost of variable inputs for a crop enterprise in $s^{th}$ season, i is an index for crop enterprises, and x variable inputs.

A weighted ranking approach (as used by Nakiganda *et al.,* (2006) was employed. It was used as follows. The top eight objectives for adopting the HVCs were captured. From the objectives ranks, a weighted total was calculated from which a weighted average was obtained as follows;

$$WAG_1 = (\Psi_{1,1} * \omega_8) + (\Psi_{1,2} * \omega_7) + (\Psi_{1,3} * \omega_6) +, ..............,(\Psi_{1,8} * \omega_1)/10$$

Suppose the goals are arbitrarily labelled 1, 2, ....., 8 (not necessarily ordered), further;(i) Weighted averages for the goals (WAG) were denoted by $WAG_1$, ....., $WAG_8$ (ii) Let percentage of respondents that rank goal 1, as the first rank be denoted by $\psi_{1,1}$ those who rank it as the second be denoted by $\psi_{1,2,....}$ $\psi_{1,8}$ (iii) Let the number of the ranks for goal 1 be denoted by $\omega_1$, $\omega_{2,,......,}$ $\omega_8$. Then the values of WAG were ranked in ascending order. Finally, the "before" and "after" approach was used to ascertain whether farmers' levels of planning and investment were

achieved, using the paired samples t-test of independence of means.

## Results

Farmers priority objectives were ranked in ascending order as follows; fees, investing in trade, having steady cash inflows, buying land, health care, investing in livestock, acquisition of a motorcycle or a car and household consumption. Prior to production, farmers' envisioned that Hot pepper, French beans and Okra were profitable. This was revealed by 95.2 percent, 94.4 percent and 91.4 percent of the respondents, respectively. Therefore farmers undertook production of these crops with full conviction that they will be able to meet their objectives using funds from these crops to supplement on other farm enterprises and non-farm activities. This was further proved through Gross Margin (GM) Analysis whose results indicated Hot pepper as having the highest GM (Shs. 2.64 millions ha$^{-1}$ season $^{-1}$) followed by French beans (Shs. 1.96 millions ha$^{-1}$ season $^{-1}$ and Okra (Shs. 1.84. millions ha$^{-1}$ season$^{-1}$). It was clear that in the short run, farmers were able to cover the variable costs used in production of these crops.

The income accruing from the study crops was utilized to acquire assets, purchase construction materials, purchase cattle, land, pigs, bicycle and mattresses. Overall, pay school fees ranked highest priority among the crop benefits and also among other uses of funds. Other household items (dominated by food and sauce) and health were among the major benefits cited. It was observed that not all the priority problems were achieved. Further analysis of the level of achievement of the set down objectives revealed that only the fees objective was fully achieved ($p<0.01$).

## Recommendation

Results indicate that the target crops were profitable but benefit did not meet all priority household needs except payment of fees objective. In order for the farmers to achieve the other objectives, it is imperative that they grow Hot pepper, French Beans and Okra at a higher scale but also work towards enterprise diversification. In order to ensure that the HVCs potentials are fully exploited improved market access, stable prices, timely access to seeds, access to advisory services, access to credit are paramount.

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