Intervention model for sustainable household food security in the drylands of Kenya: Case study of Makueni district

Jacinta K. Lemba
Supervisor: Luc D'Haese
Department of Agricultural Economics, Ghent University

Public defence: 2 July 2009

Household food insecurity in Kenya's drylands is wide (over 50 percent) and chronic (Oxfam, 2006; Nyariki et al., 2002). In the last decade, the worsening situation has drawn interventions from the public and private sectors. Yet, achieving sustainable household food security in the region is a constant challenge, at all levels.

Although drought and low access to resources are the main culprits (e.g. Nyariki et al., 2002; Muyanga, 2004), Nyong'o (2007) argues that the compounding problem lies with the how to. Supporting evidence is shown in most development intervention plans, which are largely donor-designed, and which yield dismal impacts – if any (Nyong'o, 2007; Mulwa, 2004). The need for intervention designs tailored to Kenya's socio-economic context is thus clearly evident. The study presented in this thesis concurs with this wider view and provides an intervention model for sustainable household food security in Kenya's drylands. It is based on ex-post evaluation of five intervention cases. The underlying assumption is that ex-post evaluation provides evidence of best intervention designs, which have been tried and succeeded in the field. The study thus contributes by bridging the gap between intervention theory and practice.

Household food security in Kenya's drylands concerns two main aspects: food availability and access (Nyariki et al., 2002). The rationale for intervention was thus hypothesised as a double objective of enhancing farm productivity and non-farm incomes through processes that build the capacity of local communities to forge linkages with resource providers. To validate the hypothesis, the research applied ex-post evaluation of different intervention case studies in the Makueni district, one of Kenya's most food insecure dryland districts. The cases were namely, the Makueni Agricultural Project (MAP), the Programme for the International Crop Research Institute in Semi-Arid Tropics (ICRISATP), the Community Based Nutrition Programme, the Kenya-Rural Enterprise Bank Programme (K-REP) and the Kibwezi Irrigation Project (Irrigation). The implication of the ex-post evaluation was a comprehensive analysis of both the design (processes) and the effects of the intervention (effectiveness, impacts and efficiency) (European Commission, 1999; Mulwa et al., 2003). A mixed (but mainly conventional) evaluation method was applied, which allows inferences based on cause and effect. Cross-sectional data was used, collected from sampled ex-participants of all of the five interventions, and from a control group (191 households). The data covered household and farm characteristics as well as intervention participation.

The logical framework was used to analyse the intervention designs and identify the intervention approaches, objectives, strategies and potential impacts. The results showed that the ICRISATP, K-REP and Irrigation interventions were conventionally designed, although they integrated some participatory principles. The other two (MAP and CBNP) were based on the participatory approach. Four of the five interventions were aimed at improving the food availability aspect by raising farm productivity, and the remaining one at food access.

Descriptive statistics and a two-stage regression were used to identify the impacts of the interventions. The impacts were categorized into five components: resource access, farm productivity, non-farm incomes, food consumption and farms' technical efficiency. In terms of resources, the results showed that agricultural technology transfer was the most available resource. Interventions that were effective in resource dissemination were the Irrigation, MAP, and K-REP. Analysis of farm productivity indicated that only the K-REP and Irrigation interventions had significant impact, which was attributable to effectiveness in access to relevant resources, irrigation in particular. None of the interventions had significant impact on non-farm incomes, indicating that the extended resources were insufficient. With regard to calorie consumption and the food security status of households, only the Irrigation and the MAP had significant impacts. Results for the analysis of farm technical efficiency showed that participation in the Irrigation intervention led to farms with relatively higher technical efficiency.

The results on the diverse impacts of the interventions highlighted several aspects. The first was a lack of coordination of interventions in Kenya and a standard intervention design approach. This led to overlap of functions and probably a waste of resources as well. The second was the need for interventions to raise household income above the relative poverty lines. Only the MAP and Irrigation interventions were able to do this, and had a significantly high mean food security status of participants. There was also the need for planned resource dissemination, as evidenced under the Irrigation intervention which outperformed the others. Participants had adequate access to productivity-enhancing resources, irrigation water, skills and markets for credit, inputs and produce. This enabled high productivity and efficient use of resources. Consequently, the participants had better access to food and were significantly more food secure (over 85 percent). The observation also emphasises the importance of irrigation in the drylands. Outside irrigable areas, the results of the MAP intervention supported the hypothesis of the study that food security is achievable through integration of both farm and non-farm income-generating strategies. In consideration of the production risk associated with dry conditions, strategies that enhance non-farm incomes should take more weight. Since microfinance alone was insufficient to make significant improvements in income and food security (shown by the K-REP), non-farm strategies should encompass strategies that enhance participation of households in the wider market sector. The requirements are documented as better roads for rural-urban linkages, formal education, international trade and economic growth (Nzomoi et al., 2007; GoK, 2008). The policy implication of the study is establishment of a food security

coordination system where focus is put on harnessing irrigation, technical service and markets through participatory processes.

Even though the case studies provided deductions relevant to intervention planning in the drylands of Kenya, there were some limitations. Gaps emerged between the hypothesised intervention linkages and the practice in the field. Implementation of the intervention model in the field, and subsequent evaluation would enhance the robustness of the conclusions. Other areas of research include identification of incentives for enhancing the role of livestock in household food security, and integration of credit programmes within the subsistence agriculture sub-sector.