

We outline the use of the IMPACT (Integrated Modelling Platform for mixed Animal Crop systems) tool in exploring the trade offs around farming livelihoods activities in small-holder crop livestock systems in Kenya. The tool was used to collect information relating to the characteristics of the farm household (household size, labour time budgets, off-farm income and dietary pattern), as well as the physical components of the farming systems (land, crops, soils, pastures, number of plots, etc) and their management practices. Data on prices of inputs and outputs and nutrient composition of all resources were also collected. The minimum data requirement for characterising and analysing small holder mixed farming systems in Kenya was identified. The information was collected from two contrasting sites, Central and Western Kenya. IMPACT framework was then used to analyse the current livelihoods, to explore options for their development and reveal trade-offs between objectives farmers are facing in Kenya. Standard data files for running a variety of models and nutrient flows were generated for testing alternative scenarios related to poverty alleviation, soil fertility and the role of livestock. We describe some baseline results which provide summary analysis of the household's economic, food security, soil fertility balances and labour efficiency. Results on comparative system analysis of the different sites were performed on the contribution and the role of each component such as livestock, crops, and off-farm incomes sources to the farmers livelihood and trade-offs between farmers objectives are also presented. The paper concludes with discussion of an in-depth analysis that can be made out of such system using a household simulation model which is linked to the impact tool to explore option for improving farmer's livelihood.