### Introduction & Aim

Humidtropics SRT 1.2 provides representative context data for various technical investigations and interventions. Farm typologies are an important component of better understanding target populations for targeting, technology adaptation and impact assessment. Applying cluster analysis to household survey data allows for a transparent approach to forming relevant typologies. The selection of appropriate variables is a core decision. Within Humidtropics appropriate typology dimensions include

1. income & wealth,
2. productivity & commercialisation,
3. nutrition & food security

This analysis presents household clusters and their distribution based on these dimensions as a contribution to the programme-wide discussion on typologies, target populations and entry points.

### Method

A well-tested tool for collecting farming systems data (ImpactLite; Douxchamps et al. 2014, Silvestri et al. 2014) was adapted to the needs of Humidtropics and initially employed in Kisumu and Vihiga counties of the Western Kenya action site. 400 households, randomly selected from 20 sub-locations, were interviewed between June and August 2014, covering cropping and livestock production as well as indicators for value-chain integration, income, wealth, food balances and nutrition.

A two-step cluster analysis procedure was applied (hierarchical and k-means) using these variable combinations

1. cultivated land, TLU, domestic asset index (Njuki et al. 2011), off-farm income
2. crop & livestock productivity (prod. value/ cult. land), market integration (sales value / production value)

### Results

The resulting household cluster categories are applied to household locations to assess their geographic distribution.

### Discussion

The income & wealth classification shows that the poorest households (ca 40%) have the poorest nutrition and low productivity, though not as low as the richest households.

In the productivity & commercialisation classification however the lowest crop productivity is linked to the smallest farm size while lowest livestock productivity and market integration are linked to those households who are the poorest in every aspect except land. These households also show the poorest nutrition.

Classification by nutrition identifies a class with 18% of households showing considerably poorer nutrition than in the other classes. This class also shows very low values on all other considered variables. Thus, nutrition status seems to offer an efficient approach to identifying relevant households for various development projects.