



# Adaptive greenhouse horticulture in tropical highlands

Examples based on experiences in East Africa (Kenya, Ethiopia and Rwanda)

## Conditions in East Africa

The climate in the high-altitude zones of East Africa is suitable for greenhouse cultivation:

- Seasons with high radiation
- Low night temperatures

Rainy seasons with low radiation and high relative air humidity require good crop and climate management (ventilation)

## Economic context

Protected cultivation in East Africa is of great economic importance:

- Export of roses and other crops from Kenya and Ethiopia
- Food production for the local market in Kenya and Rwanda



Rose production in Ethiopia



Example of an existing greenhouse in Rwanda

## Contribution of Wageningen UR

Wageningen UR is involved with developments in Kenya, Ethiopia and Rwanda in a number of ways:

- Sector assessments
- Introduction of Integrated Pest Management
- The GreenFarming demonstration project: Improved water use through substrate cultivation with recirculation
- Greenhouse design
- Development and improvement of demand-driven horticulture training (NICHE/KEN/126/140)
- MSc student supervision
- Training of growers and greenhouse managers



A GreenFarming water demonstration trial at van den Berg Roses in Kenya is realized with involvement of the Jomo Kenyatta University of Agriculture and Technology.

## Adaptive greenhouse horticulture for East Africa

Issues are:

- Realization of a good climate within the greenhouse
- High production and product quality
- Optimum use of scarce water resources
- Lower use of nutrients and chemical crop protection means
- Improved skills and knowledge; sharing of experiences

