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

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

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

Example of an existing greenhouse in Rwanda

Example of existing greenhouse in Ethiopia

Rose production in Ethiopia

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.