



# Adaptive greenhouse horticulture and application of technology

Lessons and limits of high tech, chances for adaptive strategies

## Potential of greenhouse horticulture

Greenhouse horticulture results in the highest production levels world wide and with High Tech Horticulture this can be combined with optimal resource efficiency in terms of area, water, fertilizers and even energy. Today, world wide horticulture expands with over 10% per year, a trend which is expected to continue several decades more.

Yield levels in kg per m <sup>2</sup> fresh product			
	World Top	South Europe	North Africa
Tomato	100	25	15
Cucumber	140	35	20
Sweet Pepper	45	15	10
WUE*	10	50	100

\*) Water Use Efficiency in L water per kg product

## Risks of copying high tech

Techniques and constructions are climate dependent:

- Heating in the tropics might be uneconomic
- Additional light in the desert might be uneconomic
- Additional insect screens could be of interest in humid tropics



High Tech Greenhouse Horticulture

Techniques and constructions need educated users:

- Growers need many years to reach the required high level skills
- High tech growers need a local supply industry for maintenance
- High tech growers need well-trained local officers

## Adaptive horticulture

Adaptive horticulture means stepwise developing local growers, using local supply industry and local extension networks.

- Technical choices are based on local climate and market circumstances
- Local constructors supply the optimal local greenhouse construction
- Local extension officers are trained and guided in working with new techniques

## Advantages of adaptive horticulture

- Sustainable intensification based on local climate and market circumstances
- Final solutions related to local climate conditions and knowledge level
- Higher return on investment
- Development of production area, supply industry and extension services



Low Tech Greenhouse Horticulture

