

Improving vegetable propagation in Iraq

Assessing the feasibility

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Context

- Iraq a new focus country for NL
- Agriculture in Iraq: study by WUR in 2018. Horticulture was identified as promising sector.
- However: serious challenges in the sector
 - E.g. access to good planting material
- Good planting material can increase yield and quality of produce

Consortium

- NL: WUR, Rijk Zwaan, Jiffy
- Local: ARD is leading supplier of seedlings to Iraqi farmers
- Support from the Council General in Erbil

Objective:

- To assess the feasibility of improved seedlings
- Pilot in the Erbil Province in the Kurdistan Region of Iraq

Approach

- Understanding the local context
- Making a nursery design
- Calculating feasibility of investments for ARD and farmers in KRI

- Field mission with WUR, Rijk Zwaan, Jiffy and ARD
 - Interviews with farmers
 - Interviews with ARD staff on current propagation practices

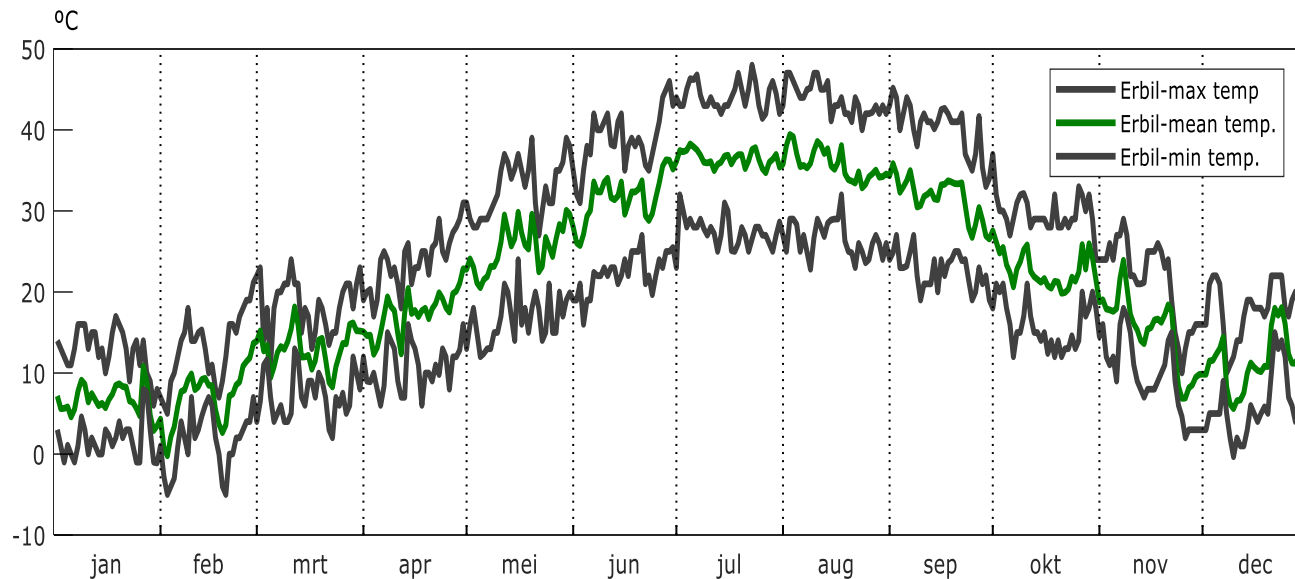
Current practices

- Seedlings are raised in the field
 - Harsh conditions
 - High level of losses
 - Poor quality plants
- Some professional nurseries:
 - Not uniform, many improvements to be made
- Year-round seedling production
 - Different season

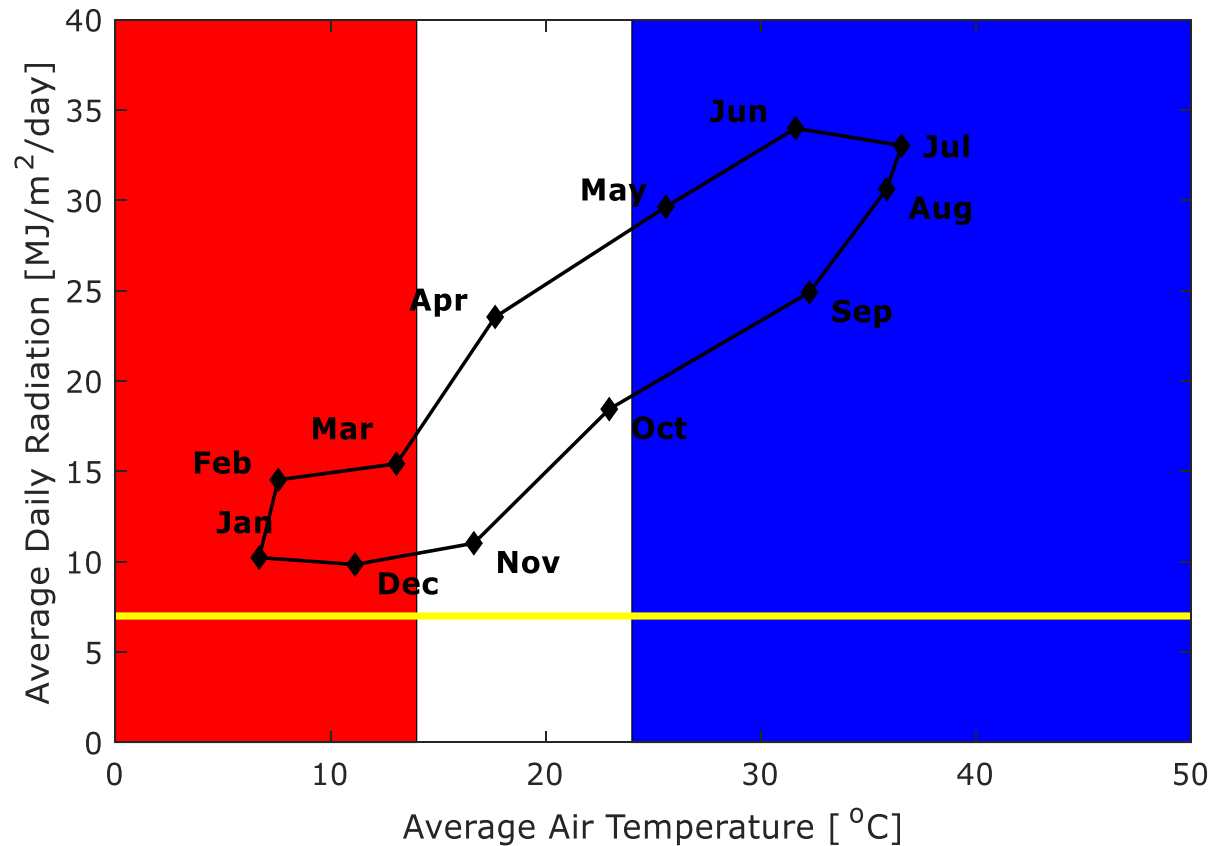


Design

- Extreme climate. Hot summers and cold winters



Design



- **Passive management limited to around 3 months**
- **Winter heating and warm season cooling required**

Design

- Fixed vent greenhouse does not allow for year-round production
- Using controlled double roof vents per span, provides a better climate during the months that the greenhouse relies only on natural ventilation, and closing vents is essential for heating and evaporative cooling systems.
- Double roof vent multi-span plastic greenhouse



Design: suggestions for improvement

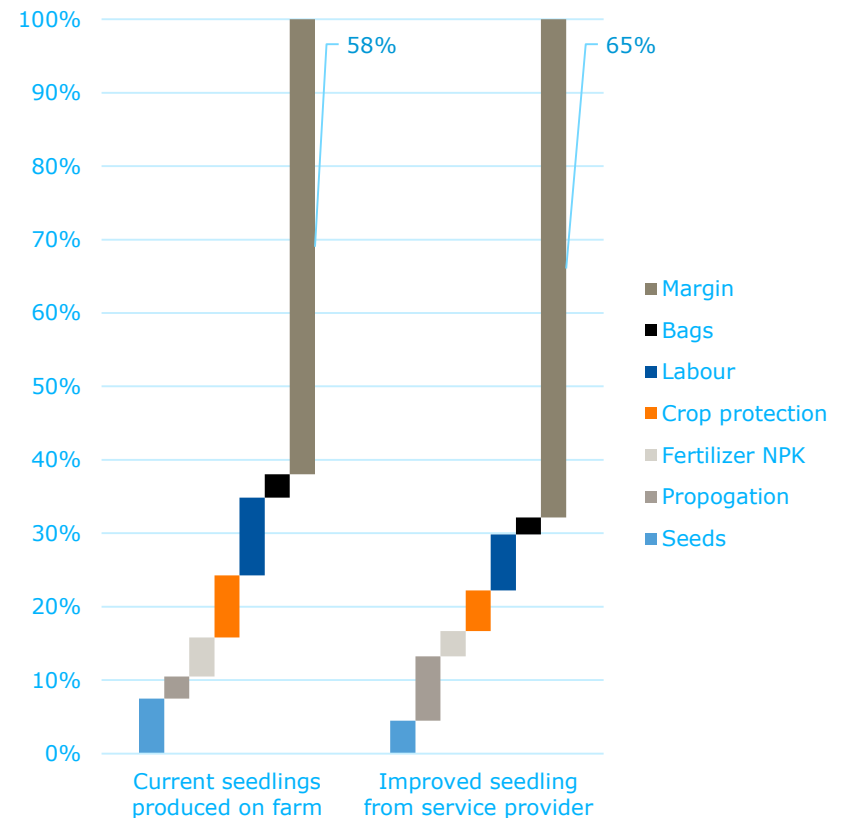
- Passive greenhouse structure with controllable roof vents (multispan)
- PE cover
- Simple air heating system
- Pad and fan system
- Basic raised tables
- Water and fertilizers application system
- Small water pump (RO)
- Nets and sluices
- Water storage

Design: feasibility of the improved design

- Total investment for the improved design is estimated at 400k.
 - Capacity is key and currently underutilized, will have to be increase to make it feasible
 - Sales price per tray: 1.5 to 3.4 EUR
 - Profit margin is positive (between 50 and 35%)
 - Different sales price per season due to different costs allocated (e.g. costs for heating and cooling)

Feasibility for the grower

- If the growers will switch to seedlings from a professional nursery at higher costs it is assumed that they will generate higher yields
- Typical crop budget for the spring season
- 8% higher margin per dunnum (0.25ha)



Follow up

- Topsectoren → timing was unfavourable
- SMP consortium partners have a strong link with the “Coalition for Impact” (BUZA funded initiative)
- RVO SDGP facility → negative advise
- Explorative meeting with RVO → January 2020

