Protected Agriculture
Present status and future trends

G.A.M.A. WIJETHUNGA
MECHANICAL ENGINEER
FARM MECHANIZATION RESEARCH CENTER
DEPARTMENT OF AGRICULTURE
SRI LANKA
**Present status**

- Sri Lanka has experience only around 2 decades
- Primary level net houses are established for foliage, vegetable and fruit
- Import and supply business (China, Thailand, Israel, etc)
- Research activities are less
- As a rain shelter (specially B onion)
- Shade nets
- Insect proof nets
- Nursery houses
Nursery houses
Rain shelter
Protected agriculture in dry zone
Protected agriculture in dry zone
Protected agriculture in dry zone
Flowers

- Roses
- Gerbera
- Carnation
- Daisy
- Tulips
- Chrysanthemum
Vegetables and Fruits

- Bell Pepper
- Cucumber
- Broccoli
- Cauliflower
- Tomato
- Strawberry
- Cherry tomato
Basic differences in design

- **Wet zone**
  - As a rain shelter
  - *Moisture control (reduction)* for quality control in foliage (cut flower)

- **Dry zone**
  - As a rain shelter
  - *Moisture control (misters and foggers)*
  - Protect from Insects
Related problems and solutions

- Higher initial cost for installation
  - Subsidy schemes and low interest rate loans
  - Increase the competitiveness in the market
  - Frame fabricate locally and only the polythene/net is import

- Higher temperature in Dry zone protected houses
  - Special design of structure for dry zone
  - Exhaust fan installation to remove excess heat (cost factor)

- No fix price for agriculture produce, hence low profit
  - Introduction of new customers (star grade hotels, super markets, export and air lines)
  - Formation of producer groups
  - Buy back agreements
  - Higher farm gate price (no intermediate sellers)
Related problems and solutions

- Lack of knowledge on new technologies
  - Training and education programs

- Pest and diseases problems
  - High quality polythene and nets (cost factor act adversely)
  - Good agricultural practices
Future trends

- Protected hoses with advance technology
  - Misters and foggers
  - Exhaust fans
  - Semi automated structures
  - Smart net houses
- Crop diversification
- Demonstration of high tech tunnels in government institutes
Research Interest

- Protected houses with advance technology
  - Smart protected houses