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*Shaping Lives...
Empowering Communities...*

Center for Smart Agriculture

Hydroponics Technology



Module 1: Prerequisites for hydroponics technology

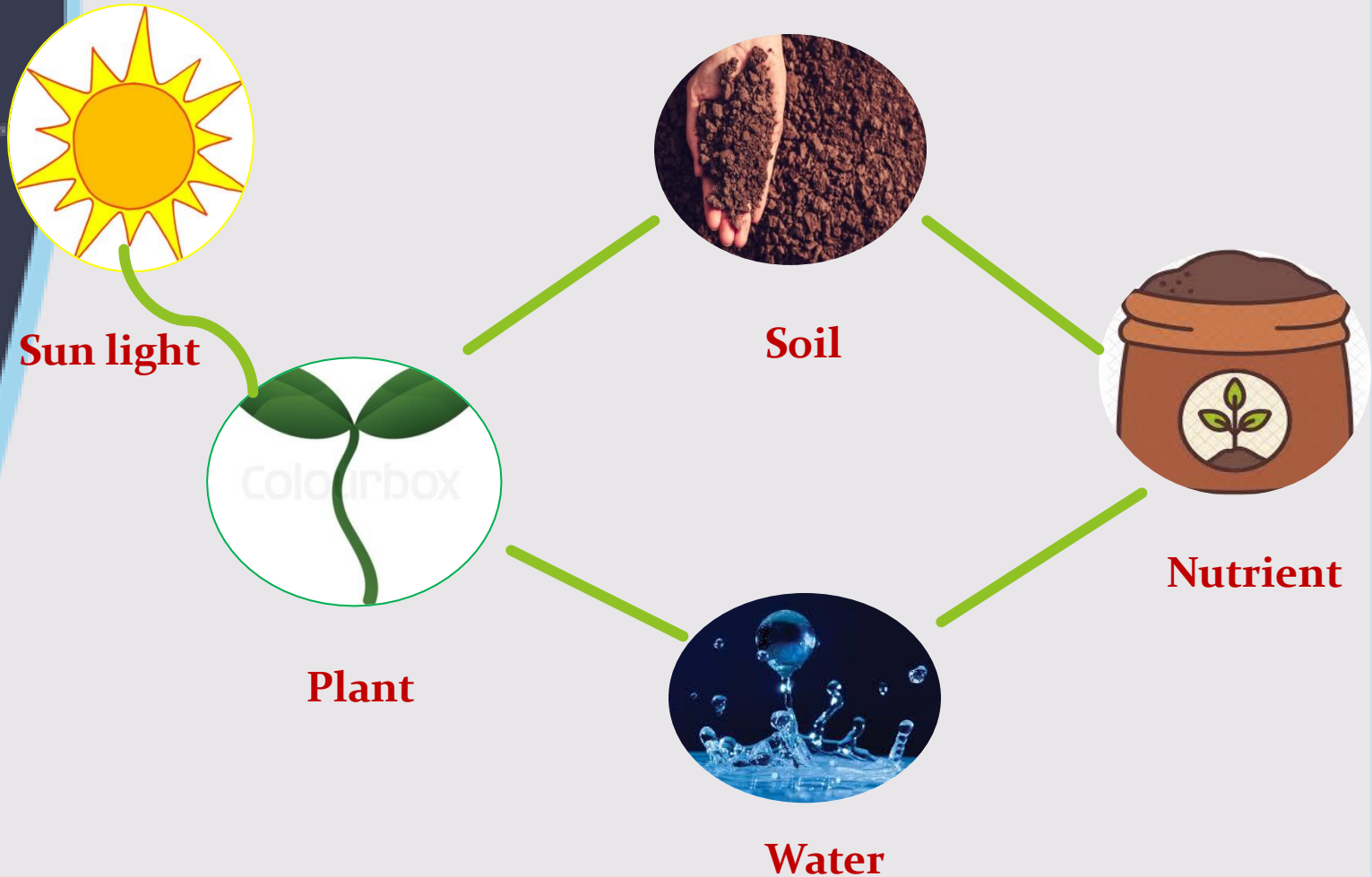
Session1: Introduction, scope and importance of hydroponics technology



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What does a plant need to grow ?



Soil is just a medium to provide nutrients to the plant. Water is as good a medium as soil.



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- The word hydroponics has derived from combining the two Greek words, hydro, meaning water, and ponos, meaning labor (i.e., working water).
- It is a method of growing plants using a solution of suitable nutrients instead of soil and the plants need some type of inert medium to support the root system.



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Historical Background

- ❖ The classic work on growing terrestrial plants without soil was published by Sir Francis Bacon in 1627, in the book named 'Sylva Sylvarum'.
- ❖ It was Professor William Frederick Gericke (1937), who finally introduced the term hydroponics and wrote the book named 'Complete Guide to Soilless Gardening'.
- ❖ Hydroponics did not reach India until 1946. The first research studies were started at the Government of Bengal's Experimental Farm at Kalimpong in the Darjeeling district.



**Greater
control of
nutrients**

**No soil
needed**

**Saves
water**

**Plants grow
faster and
larger**

**Better
utilization
of space**

Advantages

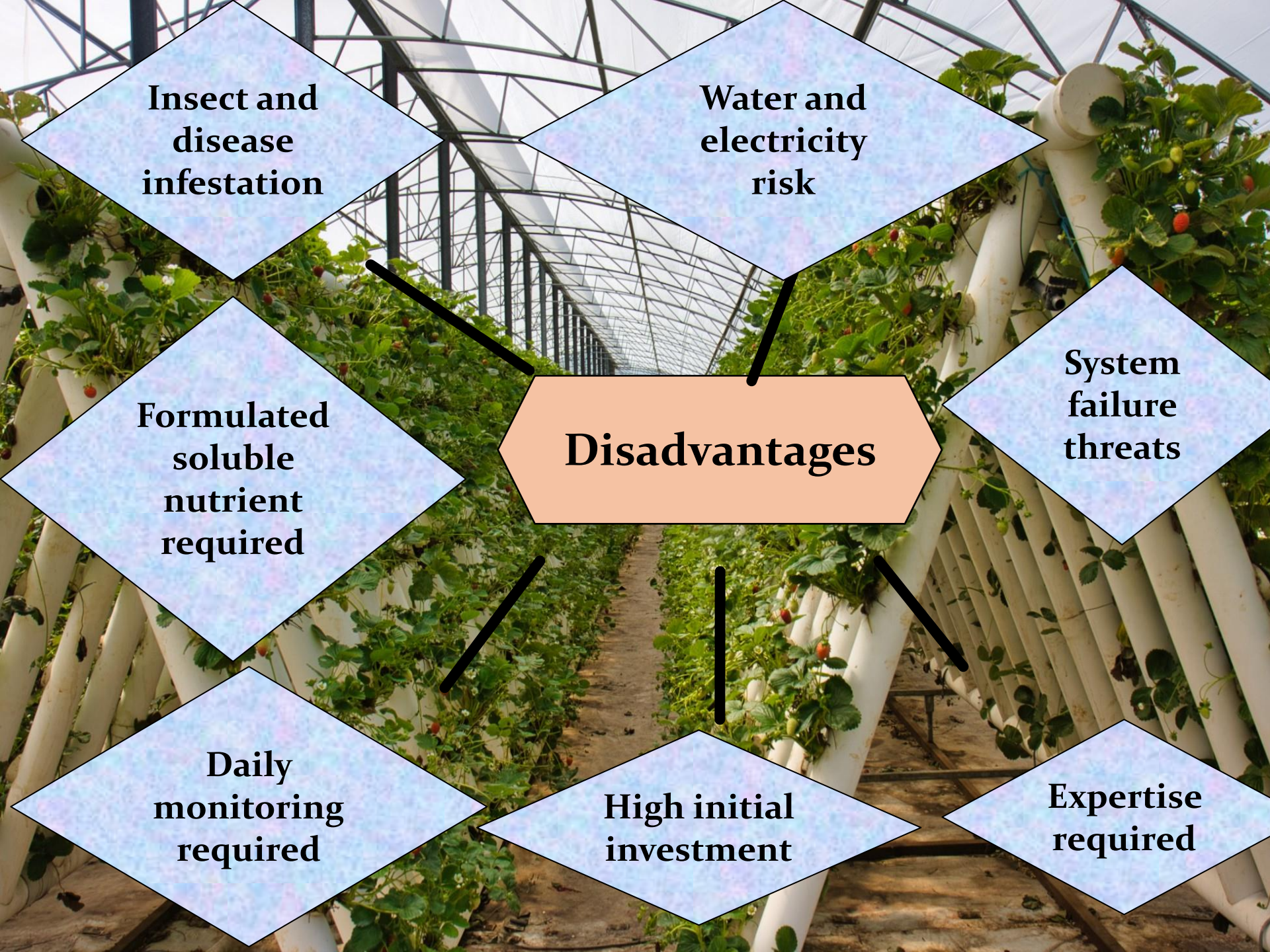
**Off season
production**

**No tillage,
Weeds, less
pests**

**Controlled
climate**

**Less labor
intensive**

**Ease of
harvesting**



**Insect and
disease
infestation**

**Water and
electricity
risk**

**System
failure
threats**

**Formulated
soluble
nutrient
required**

Disadvantages

**Daily
monitoring
required**

**High initial
investment**

**Expertise
required**



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Scope and Importance of hydroponics

- ❖ Hydroponics scope is very good especially in India as most of the vegetable supplies available are with residual chemicals and harmful to our health. No matter how rich or poor we are, these vegetable supplies are same for all of us and affect to us and our children.
- ❖ Entrepreneurs with visions could enter into commercial farming and flood hydroponic vegetables to the super market stores on big margin and earn tax free, market slump free regular income.



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Thank you...