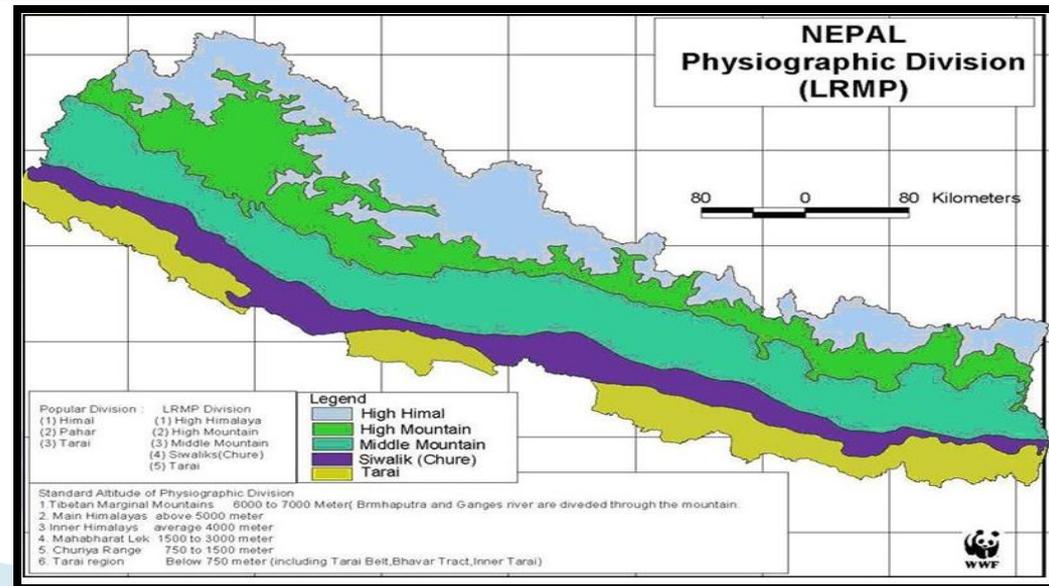
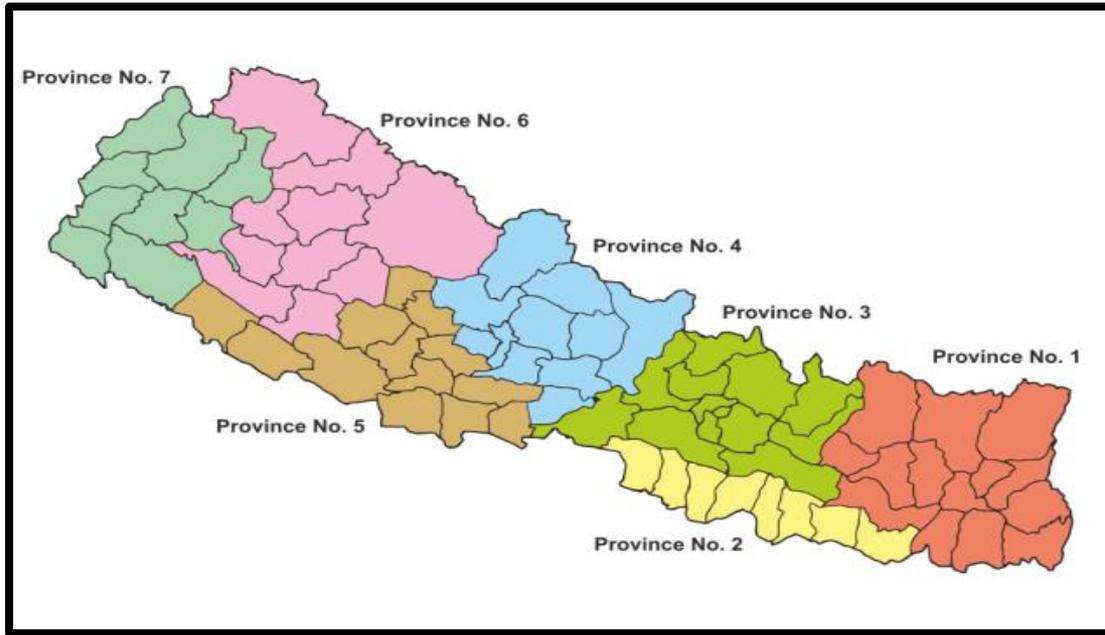


NEPALESE PRACTICE AND RESEARCH NEED IN PROTECTED AGRICULTURE

Prepare by
Mr. Madhusudan S. Basnyat / Sanjeeb Bimali / Prakash Tandukar
Directorate of Agricultural Engineering
Department of Agriculture
Ministry of Agricultural Development

Federal Democratic Republic of Nepal



Nepal at a glance

- Total land area – **147,181 sq. km**, Only **0.1% of total land mass** of earth
- 77 districts, 263 Municipalities, 3157 VDCs
- Population 28.98 millions, 10 religions
- 125 caste/ethnic groups, 123 languages spoken as mother tongue
- Predominantly an agrarian country
- **25.2 % people still below poverty line** as of 2010
- **Agriculture contributes 29.37 % to GDP**, 66% employment
- 21% of the land is cultivable (47% rain-fed)
- **Average land holding – 0.68 ha**
- Major crops Paddy, Maize, Wheat and Horticulture
- Livestock: Cattles, Buffaloes, Sheep/Goat, Pigs and Poultry

Protected Agricultural Practice

1. Mulching:

- ✓ Traditional mulching: Mulching material crop residue / stem and leaf of trees.
Common Crop: Potato Planting with Mustard straw
- ✓ Plastic mulching: Plastic sheet with drip irrigation
Common Crop: Tomato, pumpkin, Banana, Cucumber



Straw mulching



Plastic mulching

Protected Agricultural Practice

2.Tunnel:

- ✓ Straw Tunnel : Rice and Wheat straw and frame (local wood, bamboo)
Common Crop: Mushroom, Leafy vegetable, Tomato,



Straw Tunnel for Mushroom Cultivation

Protected Agricultural Practice

2.Tunnel:

✓ Plastic Tunnel: Plastic and frame (local wood, bamboo, iron pipe and pole)

Common Crop: leafy vegetable, Cauliflower Cabbage, Tomato, Capsicum



Plastic Tunnel for Different Crops with Drip Irrigation

Protected Agricultural Practice

3.Shade House

- ✓ Net shade: Frame (bamboo, wood, GI pipe)
Common Crop: Nursery, Orchard and Flower



Protected Agricultural Practice

- ✓ Net shade: Anti Hail Net for Apple Orchard



Protected Agricultural Practice

3.Shade House

✓ Plastic shade: Frame (bamboo, Wood GI pipe) & Plastic

Common Crop: Vegetable, Flower



Protected Agricultural Practice

4. Closed house:

Plastic house: local wood, Bamboo, GI Pipe

Common Crop: Vegetable and Cut flower



Protected Agricultural Practice

4. Closed house:

Glass House: Glass and frame (local wood, iron)

Common Crop: Research and Nursery.



Protected Agricultural Practice

5. Control Atmosphere House :

Fan and Cooling Pad Green House: Wall (brick and glass / plastic), Frame (iron and wood), roof (glass / Plastic)

Common Crop: Flower, Tomato, capsicum, Nursery



Government Step on Protected Agriculture

Government of Nepal: **subsidy of 25–100%** on the following activity

- Mulching plastic with drip irrigation
- Plastic tunnel with mulching plastic and drip irrigation
- Net House with drip irrigation
- Plastic house with drip Irrigation
- Fan & pad green house & drip/ sprinkle
- Hydroponic system with sprinkle on closed house

The total budget under **Ministry of Agricultural Development** is more than **USD 2 million**.

Research Need

- ✓ Adoptive research of successful good practices from other country
 - ✓ Effect of change in atmospheric within Control Atmosphere House on production and quality:
 - ✓ Increasing/decreasing of Carbon dioxide and Oxygen level
 - ✓ Pre and post Soil health
 - ✓ Effect of Drip/Sprinkle Irrigation and Mister
 - ✓ Effect of different color protective cover on production and quality
 - ✓ Economic Analysis of different method of PA
- 



Thank You