

Sustainable Resources & Environment Protection

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Outline

- Some significant related facts
- Major issues to Agriculture and Environment
- Potential solution to combat with these issues
- Why Sustainable Agriculture
- Some major Sustainable Agriculture techniques
- Challenges to Sustainable Agriculture
- Examples of Resource Conservation Technologies
- Resource Conservation Technology development & Transfer
- Livelihood realities in Pakistan

Some significant related facts

- Global population would be >9 Billion upto 2050
- Are developing countries especially Asian, produce enough food to feed their ever growing population?
- To feed this huge population developing countries need to be able to access food by growing (using local resources) it or purchasing it
- Food, fiber and fuel demand would be double in 2050
- In this situation agricultural production must be enhance upto 42%
- This is also a fact that agriculture is responsible for >70% of the global GHGs emission

Major Issues to Agriculture

- Illiteracy or poor literacy
- Loss of bio-diversity
- Climate Change
- Food Crises
- Desertification
- Rapid deforestation
- Energy crises
- Youth unemployment
- Intensive Use of pesticides (poorly trained manpower)

Major Issues to Environment

- Pollution
- Global warming associated with Emission of GHGs
- Ozone Layer depletion
- Radiation and Human health

Potential Solution?

• **Adopting sustainable agricultural & Resource Conservation Technologies**

• **Adopting Energy Conservation Techniques (Balance of Energy Input & Output)**

Why Sustainable Agriculture?

- Protect environment
- Public health protection
- Ability to remain socially & economically viable
- Protect animal health and wellbeing

Some major Sustainable Agriculture Techniques

- Crop rotation
- Grow cover crops
- Soil enrichment
- Natural Pest Predator
- IPM

Emerging challenges for Sustainable Agriculture

- To make better use of internal resources
- Minimizing the external inputs
- Regenerating internal resources
- Combination of both internal and external resources

Some examples of Resource Conservation Technologies

- Reduce use of inputs
- IPM
- Soil and water conservation
- Nutrient recycling
- Multiple cropping
- Waste recycling

Resource Conservation Technology Development and Transfer

- Developed and practiced at research stations
- Adoption rate is low
- Only few farmers can adopt
- Whole package is very costly
- Conditions are different at research stations than that at farmer's fields

Resource Conservation Technology Development and Transfer

- True in case of sustainability enhancing innovations
- Farmers adopt technologies according to their own needs
- Field experimentations by the farmers are essential tool for resource conservation technologies

Incorporating Farmer Field's experimentations

- Problem of Agri. Research and Extension personnel
- Poor understanding about the indigenous knowledge of rural people
- Rural people are primitive and unscientific
- Overtaken by development
- Extension transfer scientific knowledge
- Local knowledge is valuable

Livelihood realities in Rural Pakistan

Road-side House



