Rehabilitation and Modernization of Irrigation System in China

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Irrigation Zones in China

Average Annual Water Resources in China
Irrigation development in China

Grain Production in China

The Sources of Irrigation Water

Improvement Water Management at Various Scales
**Flood Irrigation – Starting Point**

- Small Basin Irrigation

**Laser Control Levelling and improved surface irrigation**

**Fixed Sprinkler System Application**

- Tobacco
- Sunflower
- Cotton
- Nursery
Movable sprinkler system

Hose reel sprinkler (Gun type)

Multi-nozzle cantilever type reel irrigation machine

Micro Irrigation

Integrated Drip Tapes Applied in Cotton

Drip Irrigation for Cotton (SDI) for Cotton Harvest Season

Sugar-Cane With Drip Irrigation
Increasing production for potatoes

Mulched drip irrigation for corn

Soybeans Drip Irrigation Projects

Windbreaks Drip Irrigation Projects

Drip Irrigation Projects for Vegetables & Grapes

Watermelon Drip Irrigation Engineering

The comparison between the corns with mulched drip irrigation and without it
Drip lines products

The Main Products

• PVC Pipes & Fittings
• Drip Tapes
• Pivots
• PE Pipes & Fittings
• Filters
• Controller Machines

• Subsurface low pressure pipeline

2016: 9.45 million ha
Accounting to 14.08% of irrigated area

Sprinkler irrigation

(2016: 4.38 million ha)
Micro Irrigation

• (2016: 5.57 million ha)
  Sprinkler + micro irrigation accounting to 14.83% of irrigated area

Irrigation Scheme

Most of the existing irrigation schemes were built before the 1980's

• Canal lining
Low Pressure Pipeline

Rehabilitation of Control structures

Water Measurement and Control

Application of Information and Automation Technology
Canal system simulation

Reuse of Return Flow

Major water challenge in China

Over-exploitation of water resources in several basins
Reform in Irrigation Management Institution

Role: Government
- Providing Leadership;
- Working out national development planning stipulating and modifying related regulations;
- Supervising the implementation of planning and regulations;
- Stipulating and modifying policy and legal arrangement;
- Making and modifying institutional arrangement;
- Strengthening capacity building;
- Making financial arrangement;

Role: Management Agents
- Operating and maintaining the main structures and canals system;
- Implementing institutional reform;
- Bridging the gap between government and WUAs;
- Providing technical support to WUAs;
- Monitoring and evaluating irrigation systems;
- Keeping documentation of irrigation scheme;
- Carrying out rehabilitation of the main canals and structures of irrigation systems;

Role: WUA
- Operating and maintaining on-farm structures and canals system;
- Carrying out rehabilitation of on-farm canals and structures;
- Providing irrigation service to individual water users;
- Collecting water fees.
**Future Objectives**

1. Increasing Agricultural Production Without Increasing Water Use for Irrigation

2. Developing Water-saving Irrigated Area:
   In 2016 the total irrigated area was 67.14 million ha, accounting for 49.6% of total farmland; water-saving irrigated area was 32.85 million ha, accounting for 48.93% of irrigated area.

3. Increasing water use efficiency and productivity
4. Reform on irrigation water price

Water price based operation and maintenance cost, even full cost in some area.

Transform in rural development
less labour and scaling up of farming land

Modernization of irrigation
2020-2050

Modernization of Irrigation Scheme
Balance of Comprehensive Benefits

Economic Benefits

Social Benefits

Environmental Impact

Thank You!
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