

# **DEVELOPING PRODUCTIVE, SUSTAINABLE & RESILIENT AGRICULTURE FOR FOOD SECURITY**

**MUHAMMAD ISRAR  
SECRETARY  
AGRICULTURE, LIVESTOCK,  
FISHERIES AND COOPERATIVES  
GOVERNMENT OF KP, PAKISTAN**

# Sequence of Presentation

- Current status of Agriculture Development in China and Success stories
- Agriculture Development Challenges
- Problems of other Developing Countries
- New Requirements to sustainable Developments
- Way forward

# Agriculture Development in china, current status and challenges

China aim is to improve agricultural efficiency, increase rural incomes sustainably, and enhance sustainable development since 2016 when it presented it 13<sup>th</sup> five year plan, in which the supply side structural reform is a top priority

- The central government emphasizes:
  - To boost the supply-side reform and modernization in agriculture sector
  - To refine the agricultural structure and develop diverse kinds of appropriate business models
  - To promote the positive interaction between urbanization and agricultural modernization

# Agricultural Development in China

- ◆ New increase is obtained in overall agricultural production capacity
- ◆ Progress is being achieved in agricultural operating system
- ◆ Continuous increase is gained in contribution rate of agricultural scientific and technological progress
- ◆ A new growth given in farmer's income level

# Success stories are the Extension of Agricultural Technology

According to the regional features and requirements, CAAS has successfully carried out high quality and high yield technology integration and high efficiency production mode research plans and actions for 9 major products, i.e. corn, rice, maize, soybean, rapeseed, dairies etc. in cooperation with 210 organizations across the country.



# Challenges of Agricultural Development

- **Prominent issue 1: the restriction of agricultural resources and environment becomes more and more severe.**
- The decrease in the cultivated land area and quality, the overexploitation of groundwater, and worsening of agricultural non-point source pollution. The restriction of agricultural resource factors become more and more strong, and the condition of agricultural ecological environment is rather serious.

## **Prominent issue 2: the imbalance in the structure of agricultural production has already become a growing problem**

The distribution of agricultural regions is not matched with the resource endowment

The grain-feed structure is not reasonable, and the increase in the stocks of some agricultural products coexists with the increase in their imports

Incompact combination between the crop and the animal production, poor circulation and reduced soil fertility coexist with the incomplete utilization of breeding industry wastes

### **Prominent issue 3: the low quality and efficiency of agricultural development becomes a growing problem.**

The agricultural production costs show a rising trend, and the international prices of primary agricultural products are already lower than their domestic prices. Under the pressure from the “**floor cost**” and the “**ceiling price**”, the agricultural comparative benefits continue to decline.

# Problems of other Developing countries

- Policy and Regulatory frame works like Agrarian land reforms, land zoning, uneven urbanization at the cost of agriculture lands, waste and drainage water disposal etc.
- Institutional capacities and coordination
- Poor crop and animal husbandry practices
- Monoculture production systems
- Extreme weather
- Soil erosion and poor soil fertility
- Deforestation and loss of watersheds coupled with soil erosion

# Continued.....

- Loss of soil organic matter
- Overgrazing and excessive use of wood & crop residues for household energy
- Low rainfall and risk of drought
- Vulnerability of the environment to desertification and global warming
- Salinization
- Lack of digitization
- Orthodox methods and Non use of modern equipment
- Non application of climate resilient practices
- Non application of climate simulation modeling and ICT
- Wastage and over exploitation of natural resources
- Pre and post harvest losses
- Quality and certification issues
- Marketing issues

# NEW REQUIREMENTS TO SUSTAINABLE DEVELOPMENT

- **Changing growth pattern and regulating structure to realize sustainable development**
- The basic principle of one control (on agricultural water, reduction in use of fertilizers & pesticides and utilization of basic resources like crop straw and animal manure) have been adopted leading to transformation from resource overuse to saving and high efficient use.
- **Establishing the modern agricultural industry system with a high degree of integration among the primary, the secondary and the tertiary industry**
- **Expansion and change of agricultural multi-functions**
- Utilizing the functions of nutritional materials and functional factors of organism fully to meet the new needs of human beings

# Proposal for future collaboration with the developing countries and Regional Partner organizations

- ◆ Enhance scientists visits and joint PhD training
- ◆ Encourage cooperative research on prioritized topics such as soil erosion assessment, land usage, natural resources management, agricultural biotechnology, agricultural remote sensing and plant protection, and jointly apply for calls from China, Belgium and EU
- ◆ Under the framework of the *Ghent University-CAAS Joint Laboratory of Global Change and Food Security*, jointly explore new ways of comprehensive collaboration

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THANK YOU