

The 12th Five-Year Plan for Agricultural Science and Technology Development

Zhen Zhong

Assistant Professor

School of Agricultural Economics and Rural Development

Renmin University of China

Background

The 12th Five-Year period (2011-2015) is very critical for the country's further industrialization, urbanization and agricultural modernization. Agricultural science and technology is the basis and drive for ensuring national food security, relaxing current resource and environment constraints and accelerating agricultural modernization. This plan is made to clarify the target, strategy and priority of agricultural technology development during the 12th Five-Year period.

Situation and Demand

Status Quo

Since the 11th Five-Year period, agricultural science and technology have made great contributions to ensuring national food security, accelerating agricultural modernization and constructing a new socialist countryside. Agricultural technological progress' contribution rate to agriculture growth has increased from 48% at the end of The 10th Five-Year period to its current 53.5%.

Demand

- Ensure sufficient food supply and strengthen support ability of technology
- Foster and support emerging industries and enhance independent innovation ability
- Accelerate production pattern transformation and utilize technology to solve key problems
- Coordinate urban-rural development and intensify livelihood-related technology innovation
- Support technical entrepreneurship initiatives and improve rural technology service system;
- Adapt to global competition and enhance technology competitiveness.

Strategy and Targets

Overall strategy

- The primary task is to ensure national food security;
- The core strategy is to enhance self-dependent innovation;
- The target is to lead industry development;

- The fundamental requirement is to improve living standard of rural residents

Development Priorities

- Intensify fundamental research and enhance original innovation capacity;
- Forward cutting-edge research and stress the leading role of advanced technology;
- Focus on common used key technologies and improve the integrated innovation ability;
- Intensify critical technology research and fully utilize the spillover effect;
- Emphasize researches related to urbanization and new countryside construction and improve the ability to serve local residents;
- Establish and improve the rural technology service system and support agricultural technological enterprise initiatives.

Development Goals

The goals for the 12th Five-Year plan are: to improve independent innovation ability and obtain some globally competitive technologies; to form better agricultural technology innovation system; to build efficient technology expert team; to increase technology's contribution to agricultural development and achieve the goal of 55% or above contribution rate; to increase the productivity of labor, land and other resources; to promote the development of agriculture and rural area. Specifically:

- Strengthen researches related to food and other main products: create new crop varieties; keep the new variety adoption coverage rate up to 95%; keep the comprehensive mechanization rate for main crops up to 60%; increase average yield; create new varieties for livestock and aquatic species; significantly increase the utilization of modern breeding technology;
- Achieve breakthroughs in emerging technical fields: create new biological products, fertilizers, machinery equipment, food and bioenergy; make breakthrough in some key techniques; enhance enterprises' innovation ability and lead the development of emerging industries; increase the percentage of processed agricultural products to 50%; further promote agricultural mechanization and informatization;
- Use further agricultural resources and protect environment to its optimum level: increase water efficiency of irrigation; increase fertilizer utilization rate; decrease the damage due to diseases; recycle agricultural and forestry waste; enhance the ability to prevent and control natural disasters;
- Intensify research related to urbanization and new countryside construction: try to ensure that 60% of villages have systematic development plan; increase the coverage of waste and sewage treatment; improve rural living environment;
- Build rural information platform and technology enterprise initiative support system: make substantial progress in the informatization model province construction; increase the number of scientific special commissioners; basically form comprehensive rural scientific service system which

incorporates extension system, enterprise initiative support system and multi-service system;

- Form a better agricultural innovation system: build the alliance among industry, research institute and universities; reform current management system; increase research input; expand technology platform; cultivate advanced expert group.

Major Areas

1. Sufficient food and other agricultural product supplies

To ensure sufficient supplies, future research should focus on: technologies for high grain yield; animal disease prevention and control; marine resource exploitation; freshwater resource utilization. Two major projects are to be initiated: food security related technology and marine agriculture technology development.

2. Agricultural Biotechnology Industry

There are four major areas: bio-seed, bioenergy, bio-based material and agricultural biological products. Seed technology, biomedicine and bio-energy are the major projects.

3. Food and other products' safety and quality

To meet the requirements of industry upgrade and to ensure food safety and quality, three major areas should be focused on food and other agricultural product processing, storage and logistics management; product safety and quality.

4. Informatization

To promote agricultural informatization and improve rural information service, there are two major research areas: digital agricultural and precision farming, rural informatization.

5. Improve the efficiency of agricultural resource utilization

There are four major research areas related to utilization efficiency improvement: water-saving agriculture; efficient usage of forest resources; special local resource efficient use, land resource protection and cultivated land quality improvement

6. Agricultural equipment and input

To achieve the target of improving agricultural labor, land and other input productivity and sustainable development, there are two key research areas: agricultural equipment and inputs.

7. Ecological Environment

To meet the requirements of resource-saving and environment-friendly development, there are three major research areas: agriculture and forestry related ecological environment protection, major disaster prevention and control and adaption to climate

change.

8. Urbanization and Rural Livelihood

To be consistent with the goal of urbanization and improving rural people's living standard, there are three major research fields: making systematic plan for urbanization, build livable communities and protect rural residents' health and safety.

Extension Services and Local Technology Development

1. Encourage scientific special commissioner to start technology related business
2. Improve new rural technology service system
3. Implement the model province construction program for rural informatization
4. Further carry out the Spark Program
5. Accelerate the construction of national Agricultural Technology Park
6. Intensify local technology service

Policy and Support System

1. Strengthen the organization for rural and agricultural technology-related issues;
2. Further reform current management
3. Increase input for agricultural technology
4. Build and improve innovation platform
5. Speed up expert group formation
6. Enhance agricultural enterprises' innovation ability
7. Increase international cooperation and communication

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