

13th FYP on Science and Technology Innovation “十三五”国家科技创新规划

China's 13th Five-Year Plan was released by the State Council on 28 July 2016.

Objectives

The Plan aims to accelerate the pace of agricultural modernisation, ensure food security and increase rural income, through development of high efficiency, safe and eco-friendly modern agricultural technologies.

National Major programmes

Among the national major programmes will be implemented in the next five years, cultivation of GMO new varieties and enhancing independent innovation in seed industry are the major agricultural programmes. These programmes will enhance the research on genetic technologies for crop tolerance to insect, diseases, drought, and cold; enhance research on GM cotton, maize and soy; promote the industrialization of new pest-resistant cotton, pest-tolerant maize, herbicide tolerant soy; enhance the research and development of new technologies for biosecurity, and gene cloning. Provide new varieties and technology reserves to ensure China's food security. Establish biosecurity assessment technology system, ensure the safety of GMO products.

Development of new agricultural technologies

China will develop cutting-edge technologies to boost the efficiency, quality and competitiveness of agriculture. The Plan identified the following 14 specific technologies as priority.

1. R&D of biological breeding

Cultivate a bunch of new varieties which are featured with high yield, high efficiency, and high quality, more tolerant and wide adaptability; cultivate competitive modern seed enterprises.

2. High yield, high efficiency technologies for grains

Research on new technologies and integrative demonstration to increase yield and efficiency for rice, wheat and maize, yield increases by 5%, waste reduces by 5%, fertilizer and water efficiency increase by 10%, heat and sunlight resource efficiency increase by 15%, production efficiency increases by 20%.

3. High yield and high efficiency technologies for major cash crops

Make breakthroughs in the theory and methods in increasing yield and efficiency for major cash crops, cultivate new varieties.

4. Innovation in marine agriculture and fresh water fishery sciences and technologies

Germplasm resources. Development of, select and breed new varieties, marine and freshwater healthy aquaculture, deep and fine processing, fishery environment protection.

5. High efficiency and safe livestock and poultry farming

Research and development on the technologies in detection, prevention and control of major epidemics and diseases; process and environment control in livestock and poultry farming; livestock and poultry farming equipment and facilities; better waste treatment and recycling; protection of grassland ecosystem.

6. Forestry resource cultivation and high efficiency utilisation

7. Prevention, control and rehabilitation of agricultural non-point pollution and heavy metal pollution

Making breakthroughs in prevention, control and rehabilitation of nitrogen, phosphorus, toxic chemicals and organisms, heavy metal, and organic pollutants in agricultural and forest ecosystems.

8. Sustainable development and utilization of agricultural and forestry resources

Research on the key technologies for fertilizer and pesticides use reduction, high efficient use of soil and water resources, ecosystems rehabilitation and disaster prevention and reduction.

9. Reclamation of saline-alkali soil and low yield land

10. Agricultural biological manufacturing

Research on the mechanism of action, target design, synthetic biology, pathogenic mechanism, nutrient control and release mechanism; develop genetic engineered vaccine and molecular diagnostics technologies, biological pesticides, bio-fertilizers, bio-feed, plant growth conditioners, bio-energy.

11. Agricultural machinery and facilities

12. High efficient utilization of biomass

New technologies and business models on the clean collection, storage, processing of agricultural and forest wastes (straw, manure) and new biological resources (energy crops, microalgae).

13. Smart agriculture

Key technologies and products, establish the technology system for precision production in fields and orchards, smart production of facility agriculture, informatized livestock and poultry production.

14. Smart high efficiency facility agriculture

Make breakthroughs on the key technologies of fertigation, smart environment control, whole process mechanization; make innovations on the equipment and facilities for greenhouse energy saving, PV utilization, and smart vertical farm

(The full text (in Chinese) of the “13th FYP on Science and Technology Innovation” is available at: http://www.gov.cn/zhengce/content/2016-08/08/content_5098072.htm)

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