

THE PRIME MINISTER

**Decision No. 1895/QĐ-TTg of
December 17, 2012, approving the
Program on hi-tech agriculture
development under the national
program on hi-tech development
through 2020**

THE PRIME MINISTER

*Pursuant to the December 25, 2001 Law
on Organization of the Government;*

*Pursuant to the November 13, 2008 Law
on High Technologies;*

*Pursuant to the Prime Minister's Decision
No. 2457/QĐ-TTg of December 31, 2010,
approving the national program on hi-tech
development through 2020;*

*At the proposal of the Minister of
Agriculture and Rural Development,*

DECIDES:

Article 1. To approve the Program on hi-tech agriculture development under the national program on hi-tech development through 2020 (below referred to as the Program), with the following principal contents:

I. OBJECTIVES

1. To promote the development and effective application of high technologies in the agricultural sector, contributing to building a comprehensively developed agriculture toward modernity and commodity production of high yield, quality,

efficiency and competitiveness to reach an annual growth of over 3.5%; to assure short- and long-term national food security.

2. By 2015

- To initially develop high technologies on the list of high technologies prioritized for development investment and advanced technologies in agriculture in order to create and produce 1-2 new variety(ies) or breed(s) of high yield, quality and dominant resistance for each major agricultural and forest plant or livestock and aquatic species; 2-3 advanced technological processes in each field; 2-3 bio-preparations; 2-3 animal feeds; 1-2 test kit(s); 1-2 vaccine(s); and 1-2 new supply(ies), machine(s) and equipment for agricultural production;

- To step by step apply high and advanced technologies for producing safe agricultural products of high yield, quality and economic efficiency; to make hi-tech agricultural production account for around 15% of the total agricultural production value of the whole country;

- To form and develop at least 80 hi-tech agricultural businesses in provinces in key economic regions; to build 3-5 hi-tech agricultural zones in some agro-ecological areas and 1-2 hi-tech agricultural area(s) in each province in key economic regions.

3. During 2016-2020

- To step up the development of high technologies on the list of high technologies prioritized for development investment and advanced technologies in agriculture in order to create and produce 2-3 new varieties or breeds of high yield, quality and dominant resistance for

each agricultural and forest plant or livestock and aquatic species; 3-4 advanced technological processes in each field; 3-4 bio-preparations; 3-4 animal feeds; 2-3 test kits; 2-3 vaccines; and 2-3 new supplies, machines and equipment for agricultural production;

- To promote the application of high technologies and advanced technologies for producing safe agricultural products of high yield, quality and competitiveness; to make hi-tech agricultural production account for around 35% of the total agricultural production value of the whole country;

- To form and develop around 200 hi-tech agricultural businesses in provinces in key economic regions; to build 1-2 more hi-tech agricultural zone(s) in each agro-ecological area and 2-3 hi-tech agricultural areas in each province in key economic regions.

II. MAJOR TASKS

1. To create and develop high technologies in agriculture

To research, create and develop high technologies in agriculture on the list of high technologies prioritized for development investment and advanced technologies for producing products on the list of hi-tech products promoted for development, including:

a/ Technologies for creation and propagation of plant varieties and livestock and aquatic breeds of high yield and quality

- For agricultural and forest plants: To focus on the research and application of hybridization technology, mutation technology and

biotechnology for creating new plant varieties with preeminent agronomic properties (high yield, high quality and resistance to insects and unfavorable conditions) to meet market needs, and propagation technology to supply high-quality and disease-free seedlings;

- For livestock breeds: To study and improve reproduction technology, especially animal cell technology in sperm and embryo freezing, embryo transfer, gender differentiation and in vitro fertilization, focusing on milch and beef cows; to combine traditional methods with biotechnology in creation and fast propagation of new livestock breeds of high yield and quality;

- For aquatic breeds: To research the combination of traditional methods and heredity technology for creating disease-free and fast-growing aquatic breeds of high resistance; to develop advanced technologies for producing high-quality breeders of key species.

b/ Technologies in the prevention and control of plant, animal and aquatic pests

- For agricultural and forest plants: To study and apply microbiotechnology, enzyme and protein technology for developing industrial processes to produce bio-preparations for plant protection; to study and develop kits for diagnosis and inspection of plant diseases; to study and apply biotechnology and remote sensing technology in the management, prevention and control of agricultural and forest plant pests;

- For livestock: To study and apply biotechnology for molecular diagnosis of diseases; to study technology for producing kits for fast diagnosis of animal diseases; to study and produce veterinary vaccines, especially

vaccines against avian flu, foot-and-mouth and blue-ear diseases and other dangerous diseases;

- For aquatic species: To study and produce kits for instant diagnosis of aquatic diseases; to study and apply molecular biotechnology, immunology and microbiology in the prevention and control of dangerous aquatic epidemics and diseases.

c/ Technologies for effective cultivation, animal husbandry and aquaculture

- For cultivation: To study and develop an integrated and automatic technological process for the cultivation and harvest of plants in net houses and greenhouses such as media, hydroponic technology, economical irrigation, automatic regulation of nutrition, light, tending and harvest; to study and develop intensive-farming technological process and integrated crop management (ICM) process; and technological process for safe production of plants according to VietGAP standards;

- For forestation: To study and develop an integrated technological process for intensive forestation;

- For animal husbandry: To study and develop an integrated and automatic technological process for industrial husbandry using closed-cage and air-conditioning systems with appropriate humidity and in-cage feed distribution and quantification systems;

- For aquaculture and fishing: To study and develop a technological process for intensive and super-intensive aquaculture and environment treatment technology in rearing key aquatic species; and advanced technology for efficient and sustainable fishing.

d/ Manufacture of new supplies, machines and equipment for agriculture

- To study and manufacture supplies, machines and equipment for the production, post-harvest and processing of agricultural and forest plants, especially plants in greenhouses and net-houses, such as special-use fertilizers, media, bio-preparations, growth regulators, net-house frames, covering nets, irrigation systems, tending and harvest equipment, and ventilation systems;

- To study and manufacture supplies, machines and equipment for animal husbandry and aquaculture such as feeds, bio-preparations; house frames, and lighting, feed distribution and harvest systems in animal husbandry; automatic control systems in animal feed production; wastewater and solid waste treatment systems, irrigation systems, floating raceway systems and artificial pond systems in aquaculture.

e/ Technologies in preservation and processing of agricultural products

- For agricultural products: To study and develop radiation technology, steam- and hot-water-based treatment technology, cool and fast drying technology in preservation of agricultural products; technology for consolidated preliminary processing and preservation of fresh vegetables, flowers and fruits; modified atmosphere packaging technology; technology for rapid cooling preservation combined with ethylene absorbents for preservation of fresh vegetables, flowers and fruits; membrane technology in preservation of vegetables, fruits, meat and eggs; fermentation technology, deep processing technology, biotechnology and microbial technology for producing bio-preparations and

natural colorants and additives in preservation and processing of agricultural products;

- For forest products: To study and apply information technology and automation technology with a view to saving materials and time and raising the use efficiency of wood: modified wood technology, eco-drying technology, soaking technology for wood preservation; biotechnology for producing new-generation preservative preparations and termite-killer preparations; technology for producing environment-friendly membranes;

- For aquatic products: To study and develop technology for long-term preservation of catches on offshore fishing ships; biotechnology for producing additives in aquatic product processing; and technology for intensive processing of aquatic products of high added value.

f/ Technologies in irrigation

- To study and improve technology for forecasting, reserving and exploiting water sources; technology for collecting and keeping water to stably and effectively supply water for multiple purposes; technology for construction of irrigation works; technology for filtering and supplying fresh water for salinized, coastal and island areas; and technology for wastewater treatment and environmental sanitation in rural areas;

- To study and develop technology for economical irrigation of agricultural and forest crops; technology of new materials, new structural solutions and new equipment for the construction of irrigation works;

- To study and apply automation and remote sensing technology and geographical information

system for the management and operation of irrigation works.

g/ Import and mastery of high technologies in agriculture

To select and import some domestically unavailable high technologies in agriculture; to experiment, master and adapt imported high technologies to Vietnam's ecological and practical conditions, especially high technologies in cultivation, animal husbandry and aquaculture.

2. To apply high technologies in agriculture

To implement schemes and projects on the application of high technologies in agriculture on the basis of technology research or transfer of outcomes, including schemes and projects covering experimental activities to create hi-tech agricultural products; to conduct trial production for improving high technologies and hi-tech agricultural products on a small scale; to build models of and produce environment-friendly products of quality, dominant features and high added value which can substitute imports, specifically:

a/ In cultivation

- To produce and widely apply new plant varieties of high yield, quality and resistance, focusing on key plants to serve food security, export and import substitution; to step by step produce genetically modified plant varieties (maize, soya and cotton);

- To produce quality, safe and effective agricultural products applying integrated crop management (ICM) process and VietGAP standards, focusing on key food, fruit and industrial crops;

- To produce safe vegetables and high-grade flowers in net houses and greenhouses;

- To propagate and produce edible and pharmaceutical mushrooms in a centralized manner;

- To produce and apply bio-preparations, disease diagnosis kits and new-generation fertilizers in agricultural crop cultivation and protection.

b/ In animal husbandry

- To produce new breeds of high yield and quality, focusing mainly on cows, pigs and poultry;

- To rear poultry, pigs and cows on an industrial scale;

- To produce and apply new bio-preparations, animal feeds, vaccines and kits in animal husbandry and epidemic and disease prevention and control.

c/ In forestry

- To rapidly propagate and produce on an industrial scale new forest plant varieties like hybrid acacia and eucalyptus by tissue and cutting technologies;

- To apply intensive growing of forests for commercial purposes;

- To apply remote sensing technology, geographical information system and global positioning system in forest management and protection.

d/ In fisheries

- To rapidly propagate and produce aquatic breeds of high yield and quality, focusing mainly on tiger prawn, white leg shrimp, freshwater and sea fishes of high value, and bivalve mollusks;

- To apply intensive and super-intensive methods and automatic environmental control and treatment by advanced technologies (chemical fog, biofloc, bio-filtering) in rearing some species like fish and shrimp;

- To produce aquatic feeds, drugs for aquatic diseases and kits for instant diagnosis of aquatic diseases;

- To apply remote sensing technology and geographical information system for the planning, management and exploitation of aquatic resources and aquaculture areas.

e/ In irrigation

- To apply automation and remote sensing technology and geographical information system for the management, operation and administration of irrigation works;

- To produce new materials and equipment and construct irrigation works;

- To develop and expand the model to apply economical irrigation technology for some agricultural and forest crops.

f/ In processing and preservation

- To produce and apply bio-preparations, natural additives and colorants for the preservation and processing of agricultural, forest and aquatic products;

- To develop and expand the model of preservation and deep processing of agricultural products;

- To apply advanced technologies in timber preservation and processing; nano materials and technology for increasing the mechanic and biological durability of timber of fast-growing planted forests; to produce bio-composite

materials from timber and fiber-plants;

- To build and expand the model of long-term preservation of aquatic products on fishing ships; to process aquatic products of high added value.

g/ In electrical engineering, automation and manufacture of supplies, machines and equipment

- To apply advanced technologies, including automatic electromechanical and electronic control technology for manufacturing supplies, machines and equipment for agricultural and forestry production and aquaculture;

- To build and develop establishments of automatic or semi-automatic cultivation (variety propagation and vegetable and flower production), animal husbandry (pigs, chicken and cows), aquaculture (production of aquatic breeds and intensive rearing of fishes and shrimps).

3. To build hi-tech and develop hi-tech agriculture

a/ To build hi-tech agricultural zones

- By 2015:

- + To implement projects and schemes under the master plan and overall plan on hi-tech agricultural zones in different ecological areas;

- + To establish and build hi-tech agricultural zones in advantageous agro-ecological regions such as the Red River delta, the central coastal and Central Highlands region, the southeastern region and the Mekong River delta;

- + To implement projects supporting the demonstration and application of high technologies in agriculture in established hi-tech agricultural zones.

- During 2016-2020:

+ To further establish and build hi-tech agricultural zones in agro-ecological areas under the approved master plan;

+ To step up the implementation of projects supporting the research and application, demonstration, training and production of agricultural products in hi-tech agricultural zones;

+ To implement projects promoting the attraction of domestic and foreign investment sources in hi-tech agricultural zones.

b/ To form and develop hi-tech agricultural areas

- By 2015:

+ To implement projects and schemes under the master plan on hi-tech agricultural areas nationwide and the overall plan on hi-tech agricultural areas in localities;

+ To initially form hi-tech agricultural areas in advantageous localities, first of all in intensive rice cultivation areas and quality rice-growing areas (the Mekong River delta and Red River delta), safe vegetable and flower production areas (the Red River delta, the Central Highlands and the southeastern region), areas growing fruit trees like orange, mandarin, longan, litchi, grapefruit and blue dragon (the Mekong River delta, the Red River delta and the northern midland-mountainous region), areas growing industrial crops like tea, coffee, pepper and cashew (the northern midland-mountainous region, Central Highlands and southeastern region), and aquaculture areas (the northern mountainous region, the Central Highlands and the Mekong River delta).

- During 2016-2020:

+ To demonstrate and apply high technologies

in agriculture and produce hi-tech agricultural products in recognized or planned hi-tech agricultural areas;

+ To step up the formation and development of hi-tech agricultural areas in localities; to attach importance to production areas focusing on one or more than one agricultural commodity product of high yield, quality and economic efficiency, then expanding to areas having animal husbandry and forest products.

c/ To develop hi-tech agricultural businesses

- By 2015:

+ To form and recognize hi-tech agricultural businesses in provinces having advantages in the fields in which high technologies have been applied such as flower and vegetable growing in net houses; industrial production of seedlings and breeders; industrial rearing of cows, pigs and poultry; intensive aquaculture; and industrial production of fertilizers and bio-preparations;

+ To implement projects on the experimentation, demonstration and application of new varieties and breeds and advanced technological processes for producing safe agricultural products of high yield, quality and economic efficiency in recognized agricultural businesses and hi-tech agricultural businesses.

- During 2016-2020:

+ To step up the development of agricultural businesses applying high technologies in all fields of agricultural production in provinces; to step by step expand the scale and operation of hi-tech agricultural businesses; to promote the development of hi-tech agricultural businesses in hi-tech agricultural areas and zones;

+ To step up the implementation of projects

supporting the research and application, experimentation and demonstration of new technologies and imported technologies and projects on production of hi-tech agricultural products in hi-tech agricultural businesses.

III. SOLUTIONS

1. Funding sources for the Program implementation

Funds for the Program implementation come from:

a/ The state budget

- Funds for non-business activities will be used for the performance of tasks, schemes and projects to create, develop and apply high technologies in agriculture; the formation and development of hi-tech agricultural businesses; public information work; and for the Program management;

- Funds for development investment will be used for the construction of technical infrastructure of hi-tech agricultural zones and areas.

b/ Businesses, which are used mainly for production of hi-tech agricultural products, transfer of technical advances for technology renewal, human resource training, improvement of managerial skills of businesses, and application of advanced management systems in businesses.

c/ Other sources prescribed by law.

2. Development of markets and services in support of hi-tech activities in agriculture

a/ To form trading floors for agricultural high technologies and develop brokerage, counseling, evaluation, investment, legal, financial, insurance,

intellectual property and other services to promote hi-tech activities and sale and use of hi-tech agricultural products;

b/ To build a database of agricultural high technologies; to create favorable conditions for organizations and individuals to access, use and exchange information on agricultural high technologies; to hold and participate in national and international markets, fairs and exhibitions on agricultural high technologies;

c/ To increase public information work via the mass media and internet to enable public access to high technologies, hi-tech application outcomes, hi-tech development models and hi-tech agricultural products.

3. International cooperation

a/ To organize and implement schemes and projects on bilateral and multilateral cooperation, especially cooperation with agriculturally developed countries, on the research, development, application and transfer of agricultural high technologies;

b/ To exchange experts and personnel engaged in research, development and application of agricultural high technologies between Vietnamese organizations and businesses and foreign hi-tech organizations and businesses;

c/ To simplify legal procedures for Vietnamese organizations and individuals joining international cooperation programs and projects, international societies and associations and other organizations in the development and application of agricultural high technologies.

4. Mechanisms and policies

a/ Supporting activities to create, develop and apply high technologies in agriculture

- Organizations and individuals that research to create, develop and apply high technologies in agriculture and production of hi-tech agricultural products are entitled to the highest incentives and supports under Clause 1, Article 12 of the Law on High Technologies, Sections 1, 2 and 4, Part III, Article 1 of the Prime Minister's Decision No. 2457/QĐ-TTg of December 31, 2010, and other relevant laws;

- To formulate mechanisms and policies for allocating state budget funds for the procurement of equipment of laboratories and research institutions to develop high technologies in agriculture under approved investment projects; to import domestically unavailable high technologies and hi-tech machines and equipment in agriculture for the implementation of approved projects on hi-tech application and demonstration.

b/ Supporting the development of hi-tech agricultural businesses

Hi-tech agricultural businesses defined in Clause 2, Article 19, and Clause 2, Article 20, of the Law on High Technologies are entitled to development support policies of the State and other incentives decided by provincial-level People's Committees according to their competence.

c/ Supports for hi-tech agricultural zones

- Investors building technical infrastructure of hi-tech agricultural zones are entitled to the State's highest incentives and supports in accordance with Clauses 2 thru 5, Article 33 of the Law on High Technologies, and relevant

laws;

- Businesses operating in hi-tech agricultural zones may enjoy incentive policies like hi-tech agricultural businesses.

d/ Supports for hi-tech agricultural areas

- Investors building hi-tech agricultural areas are entitled to the highest incentives in accordance with the land law with regard to land used for hi-tech agricultural production and for building providers of services for hi-tech agricultural development in the areas;

- Recognized hi-tech agricultural areas may enjoy up to 70% of state budget funds for the construction of technical infrastructure (transport, irrigation and waste treatment systems) in the areas under approved investment projects and enjoy other incentives prescribed by provincial-level People's Committees according to their competence.

e/ Attracting and employing hi-tech human resources in agriculture

To formulate and implement special treatment policies for attracting and employing local and foreign hi-tech human resources in agriculture to activities to develop hi-tech agriculture under Clause 1, Article 29 of the Law on High Technologies, and other relevant laws.

IV. ORGANIZATION OF IMPLEMENTATION

1. The Ministry of Agriculture and Rural Development shall:

- Assume the prime responsibility for, and coordinate with the Ministry of Science and Technology and related ministries, sectors and localities in, organizing the implementation of the

Program;

- Guide, examine regularly summarize the implementation of the Program and report such to the head of the Steering Committee of the national program on hi-tech development through 2020; and conduct preliminary and final reviews of the Program implementation;

- Assume the prime responsibility for, and coordinate with related ministries and agencies in, elaborating documents guiding the implementation of the Program; formulate and submit to the Prime Minister mechanisms and policies supporting the implementation of the Program;

- Integrate the Program with other component programs under the national program on hi-tech development through 2020 the implementation of which is jointly in charge by the Ministry of Science and Technology and the Ministry of Industry and Trade;

- Summarize and report to the Prime Minister for consideration and decision modifications of the Program's contents when necessary.

2. The Ministry of Science and Technology shall coordinate with the Ministry of Agriculture and Rural Development in setting and performing the Program's tasks.

3. The Ministry of Planning and Investment shall assume the prime responsibility for, and coordinate with the Ministry of Agriculture and Rural Development and related ministries and sectors in, allocating investment expenditure estimates for the implementation of the Program's contents and submit them to competent authorities for decision in accordance with regulations.

4. The Ministry of Finance shall assume the prime responsibility for, and coordinate with the Ministry of Agriculture and Rural Development and related ministries and sectors in, allocating regular spending estimates for the implementation of the Program's contents, and submit them to competent authorities for decision in accordance with regulations.

5. Ministries, sectors and localities shall:

- Based on the Program's contents and within the ambit of their functions and powers, coordinate with the Ministry of Agriculture and Rural Development in implementing the Program;

- Facilitate the use of land for hi-tech agricultural development; and implement preferential mechanisms and policies for the performance of the Program's tasks in localities;

- Integrate the Program's tasks into development tasks of sectors, localities, national target programs and socio-economic development programs.

Article 2. This Decision replaces the Prime Minister's Decision No. 176/QĐ-TTg of January 29, 2012, approving the Scheme on hi-tech agriculture development through 2020, and takes effect on the date of its signing.

Article 3. Ministers, heads of ministerial-level agencies, heads of government-attached agencies and chairpersons of provincial-level People's Committees shall implement this Decision.-

Prime Minister
NGUYEN TAN DUNG