RESEARCH ON POLICIES TO PROMOTE SCIENCTIFIC AND TECHNOLOGICAL ADVANCES IN THE NORTHERN MOUNTAINOUS AGRICULTURAL PRODUCTION

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Abstract:

Over the years, Vietnamese agriculture has been growing at a rapid rate. However, recent growth rate tends to slow down, efficiency is not high and unsustainable. To further promote the role of agriculture in the economy, the Government has directed the implementation of the policy of restructuring the agricultural sector in association with the new rural construction. The most important solution to implement this policy is to accelerate the application and transfer of scientific and technological (S&T) advances, including high technology. In recent years, the Party and State have paid much attention to invest in the application and transfer of S&T advances in agriculture. The system of research and transfer organizations has been strengthened, human resources have been trained, and there have many innovative policies. However, in the face of the development needs of sector, efforts should be made to further promote policies to facilitate the development of application and transfer of S&T advances and to promote the role of system of institutions, universities, agricultural expansion systems, especially to encourage the participation of enterprises.

This paper is intended to provide an overview of policy for the application and transfer of S&T advances in agriculture and to provide solutions to further promote the application and transfer of S&T advances for agricultural development in Northern mountainous area.

Keywords: *Scientific and technological advances transfer; Northern mountainous area.*

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1. Introduction

The Northern Mountain Region (NM) has great potential for agricultural development. However, this is the region with the highest rates of poverty and economic slowdown. Six out of eight provinces in the country have the lowest human development index in Vietnam[2], over 60% of all poor households, over 75% of the poor are ethnic minorities[3]. Agricultural

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[2] Vietnam Academy of Social Sciences, 2015.

[3] Report of UNDP in 2006

production of the region has not really developed to match the available potential and advantages.

In recent years, many policies promoting the application and transfer of S&T advances in agriculture have been promulgated and many S&T advances have been applied and transferred through conducted programs, projects, international organizations. However, the effectiveness is limited due to lack of appropriate measures and many shortcomings in the policies of application and transfer. The method of transfer is still top-down which is not suitable with the socio-economic conditions and needs of farmers and communities. There is no close relationship between the application and transfer to the consumer market. The policy has not mobilized the effective participation of farmers and communities, so efficiency is often unsustainable.

Therefore, the topic of "Research on the situation and measures to promote agricultural economic restructuring in the Northwest region to 2020" is carried out with the aim at proposing policies to promote the application and transfer of S&T advances in agricultural production, focusing on some main aspects: *Firstly*, to clarify the scientific basis of policy of promoting research and application of S&T advances in agricultural production; *Secondly*, to analyze the current state of scientific transfer policies in agricultural production; *Thirdly*, to propose solutions to improve policies in order to promote the application and transfer of S&T advances in agricultural production in NM region. Due to limited time, budget and surveyed on a large area, the topic does not investigate separately resources of investment funds from central or local and projects under major programs of the State.

2. Current situation of application and transfer of scientific and technological advances in Northern mountainous area

2.1. Current situation of the system of transferring S&T advances

System of transferring S&T advances includes:

1) State agricultural promotion centers;

2) Research institutes, universities;

3) Projects under the programs of Government, Ministries;

4) Projects supported by international organizations;

5) Enterprises;

6) Community conducted activities;

7) Private sector conducted activities.

2.1.1. State agricultural promotion system

So far, all 14 provinces in NM region have promotion centers, with an average of 17 promotion staff per promotion center. At the district level, there are 127 promotion stations in the whole region, with an average of 8.5 stations per province. Nearly 85% of mountainous and midland districts have promotion stations. The state promotion system has been operating to the commune level. For example, some communes have agricultural promotion activities such as Yen Bai 38.8%, Hoa Binh 46.7% and Cao Bang 49.2%. This situation has had a great impact on application and transfer of S&T advances into agriculture and improvement of agricultural productivity.

In addition, the promotion system at grassroot level is an agricultural promotion organization which is set up by the local government to carry out the task of applying and transferring S&T advances in communes, villages and hamlets. Agricultural promotion staff are not civil servants, elected by the people, and in some places, such as Ha Giang province, agriculture promoting agents at grassroots level get paid by local population. Both the NM region and 1,019 communes have promotion facilities (36.1%). This rate is highest in Ha Giang, the rate is low in Hoa Binh province. At present, there are the following forms of agricultural promotion: Cooperatives providing promotion services, agricultural promotion clubs, self-managed agricultural promotion villages, agricultural promotion branch and agricultural promotion enterprises, etc. However, the most common form of promotion organizations is agricultural promotion club.

Some advantages of the grassroot agricultural promotion system are: low capital, suitable with the level, conditions and needs of the people; socialization of agricultural promotion tasks, collaboration with mass organizations for agricultural promotion; promote people's participation in identifying needs, techniques of transfer, transfer organization, contribution of resources; the responsibility of the transferor is linked with the results of transfer; farmers adopt the application lead to increase the productivity of plants and animals. However, community agricultural promotion also has some points that need to be finalized: there is no unified policy and mechanism for agricultural promotion staff at grassroot level. Sometimes they are elected by farmers, so they lack of knowledge and skills to transfer; poor communes, lack of capital for initial investment.

2.1.2. Transfer system of research institutes and universities

There are now more than 11 institutes and research centers; Three universities have applied and transferred research results in NM region.

Many institutes of the central government have successfully applied and transferred: Maize Research Institute, Livestock Institute, Vietnamese Academy of Forestry Sciences, etc., which created remarkable changes in the restructuring of the agricultural economy in the provinces in general and the whole region in particular.

Transferring system of these channels has some advantages: S&T advances are applied, transfer is new technology, high scientific and to create breakthrough in agricultural developmen which contribute to solve food security, poverty alleviation.

However, this transfer system also reveals the following limitations:

- The channel for S&T advance application and transfer is not well integrated. These agencies are lack of research centers/stations located in the NM region (except Northern Mountainous Agriculture and Forest Science Institute located in Phu Tho province) to test and finalize the research results. The new research results are confirmed mainly in the testing centers/stations of the institute itself, where the conditions for the application of S&T advances are ideal. These S&T advances have not been localized or perfected to be suitable with local conditions. Therefore, sometimes they are high risk, requires large investment, not suitable with the needs and characteristics of each locality;
- There is no regular assessment of the needs of each locality as a basis for developing research plans of institutes and universities. Therefore, some S&T advances are less suitable the actual market. S&T advances of some institutes and universities transferred to farmers has not always come from demand, which are often included in major research programs of the state and people who are less responsive to these techniques;
- Institutes and universities are often less coordinated with local promotion agencies, so there is no close association;
- Due to the nature of the application, transfer of S&T advances is to bring the results of research to farmers. Thus, this transfer is more likely to provide one-sided information, from these agencies to farmers rather than to identify problems to address which help farmers overcome them.

2.1.3. The transfer system of enterprises

At present, many enterprises (including private enterprises, state-owned enterprises and foreign invested enterprises) have applied and transferred S&T advances to farmers in order to form raw material areas. Especially in the NM region, there is a specialized area for commodity raw materials such as cotton (Dien Bien), lemon (Son La), tea (Yen Bai). Staff of

enterprises have a close connection with the community, implement technical guidelines, product underwriting through contract mechanism with farmers in production and product consumption.

This channel has the advantage: S&T advances are applied, the transfer of focus; Products have stable output so household can be asssured of production; Technical experience is drawn in many places so the method of transfer is appropriate and flexible. However, this channel also reveals a number of constraints: If enterprises are not linked with farmers, both enterprises and farmers face difficulties; the control of contract implementation between farmers and enterprises is also a concern, as there is a phenomenon when the farmed product price will not sell to the business anymore.

2.1.4. Transferring S&T advances through projects under State/ Ministerial/Sector programmes

Mountainous Agricultural Program of the Ministry of Science and Technology; Northwest Program of Hanoi National University and Science and Technology Program serving new rural is hosted by the Ministry of Agriculture and Rural Development. These programs are financed by Government and funded by Ministry of Agriculture and Rural Development. The implementation is mainly under the direction of the ministries and branches. The advantage of this channel is its high concentration, ease of implementation, large-scale synchronization of a product and achievement of local or government goals and orientations.

However, the experience of project implementation under these programs has shown some shortcomings in application and transfer as follows: *Firstly*, S&T advances are applied and transferred largely by others who will identified or located in the target program system was identified from the central/provincial rather than from the needs of the people. Therefore, the suitability of S&T advances is not high, sometimes it is not suitable with practical conditions. *Secondly*, the beneficiary farmers - communities have little or no participation in the demonstration/implementation plan. Therefore, the implementation solutions have not mobilized all the resources of the participants. *Thirdly*, the location of project implementation in many places is subjective and lack of ground.

District level, especially at commune and village levels, is less likely to be involved in decision-making. This makes the practicality of the model, the representativeness of the technical solution not high. In some places, the application and transfer of S&T advances is for poverty alleviation, but the areas where the models are chosen have good economic conditions. Farmers selected for modeling are usually well-off farmers so the

replication of the model is not high. *Fourthly*, these projects are often large in scale, sometimes it does not match with the investment funding that makes investment expenditures unfavorable for localities. *Fifth*, there are many inadequacies in financial mechanism and balance of payments, complicated allocation process. *Sixth*, the current projects largely lack of the stage of monitoring, evaluating the results and impact of the application and transfer. In practice, it is difficult to specifically capture the transfer results of programs. Some localities have had monitoring and evaluation systems, but most of the data collected are the result indicators such as new cultivated area, number of raised animals... and the indicators show the superiority, the impact of scientific and technological advances on farmers and communities, such as productivity, costs, income and livelihoods, is minimal, almost none. This is a measure of the overall result of technology transfer to farmers.

2.1.5. Transfer through international projects

There are many projects funded by IFAD, OXFAM, AAV, EU, etc. in MNPB. These projects generally involve participatory transfer. These projects invested considerable funds for staff and farmers to access new applications and deliverables.

This channel has the advantage of: (i) Involving farmers' participation in the whole transfer process. Under this system, farmers participate in demand identification, problem analysis, solution selection, resource contribution, implementation organization, technical evaluation and benefit sharing; (ii) Technical consultants help farmers to make decisions on their own; (iii) Make a lot of S&T advances to farmers, focus, scale and specific results; (iv) Focusing on poverty reduction, focusing on building sustainability in the community. However, this system has the following disadvantages: *Firstly*, the system often requires large funding sources; *Secondly*, some of the most notable projects of non-governmental organizations are implemented under a rigid principle. Therefore, efficiency and replicability are not high; *Thirdly*, the application and transfer in some large projects, the management from central to grassroots is not unified.

2.1.6. Application, delivery of science and technology equipment by the private implementation

Advances in science and technology have also been transferred through private activities, including: agricultural materials suppliers (selling seedlings, livestock, pesticides, processing and preserving agricultural products), application, transferring to serve their interests. The form of transfer is flexible from product introduction, consulting, contract care and

even product consumption. In some provinces, the private sector introduced new seedlings and products to many farmers. On the other hand, the responsiveness of this private channel is often faster and more sensitive than other channels. However, due to a lack of legal corridors, these activities are not fully recognized by the society as a technology transfer.

The transfer channel also reveals certain limitations as follows. First, the person performing the transfer is usually a trader who performs the transfer primarily for trading. Hence profit is a key factor in the transfer decision; Second, most transferers lack knowledge and transfer methods; Third, the scale of the transfer is usually small, odd and scattered.

2.2. The status of staff transferred

Transfer staff have an special importance in the application and transfer of scientific and technological advances to farmers. Corresponding to 7 transfer systems, there are five groups of transfer officers.

2.2.1. State promotion officers

The core of the application and transfer of scientific and technological advances are agricultural promotion workers working in agricultural promotion centers, agricultural promotion stations, commune clusters and some other establishments. The average NM region in each provincial promotion center is 17 staff, and the district promotion center has 56 staff. These promotion workers were trained at university level (76%), secondary (12.7%) which is specialized in cultivation (29.3%), husbandry (19.7%), forestry (14%) and agricultural economics (14%). The number of district promotion officers have a university degree accounted for 65% (of which 44.5% are specialized in cultivation, 17.8% have specialized in animal husbandry and 14% forestry sector). All promotion staff focus on technical knowledge, lack of social knowledge and ability to mobilize the community.

2.2.2. The transfer staff of community

Promoting agents at village level are selected by the local community and they get assigned to instruct other people to apply S&T advances. They are staff members of Women's Union, Veterans' Association, Youth Union, good farmers, typical farmers,... elected by the people. Especially in Ha Giang, the promotion staff force is very large, this force is called the village promotion which are elected by farmers. Village promotion staff are trained and fostered to improve their knowledge.

The development of the village promotion staff has many advantages: (i) Village promotion staff are people who are elected and they will work with

a high sense of responsibility in transferring advances in S&T; (ii) They are local people should understand the customs, language and experience of the community, so the transfer are more effective; (iii) People who voted for these staff so they will trust and follow their instructions; (iv) This is an important team in receiving the transfer of support from other programs and transfer systems (state promotion, business,...). Therefore, in the coming time, funding for capacity building and knowledge of village promotion workers should be allocated to the transfer function. The mechanism of democracy should be respected in the selection and identification of remuneration mechanisms for village promotion workers.

2.2.3. Transfer staff of institutes, universities

This is a highly qualified professional resource which trained in a specific area of agriculture. These staff are often at the grassroots level, transferring them at the request of the local authorities or these organizations when the research results transferred. This team has difficulty in communication because they lack of understanding of the language and customs of the farmer, not equipped with social knowledge and community in the transfer. Their activities depend heavily on State budget and low remuneration. On the other hand, some researchers have succeeded in bringing S&T advances to farmers. But now, the protection of intellectual property has limited researchers to involve in the transferring.

2.2.4. Transfer staff of enterprises

Enterprises have staff who are responsible for transferring S&T advances to farmers for business development purposes. Transferring staff are professionally trained and have good market knowledge, marketing and communication skills. They are paid higher salaries than research and transfer staff of state agencies. Their income is tied to the results of S&T advance to farmers. They are often assigned to a specific area to carry out the transfer and have close links with local, local private sector actors (seed service agents, livestock breeders and animal feed,...). In Son La, staff of Northwestern Nafoods Joint Stock Company in collaboration with the transfer team of the community jointly deployed the application of S&T advance and took many successes. The enterprise has attached the final transfer result to the income of the transfer agent.

2.2.5. Transfer staff of international programs and projects

International projects such as IFAD, OXFAM, Action Aid VietNam... have hired experienced and capable staff to do the transfer task. These staff are often employed by promotion agencies, research institutes/universities, etc.,

who are contracted over time or with the project to carry out S&T advances to farmers in accordance with the program and plan defined by the project. Project staff transferred to farmers receive very high salaries (paid by the project), have the capacity and expertise, are equipped and transfer skills to farmers (especially PRA method), able to communicate well. These officers are tasked to carry out specific transfer activities within the project scope.

3. Current status of mechanisms and policies for application and transfer of S&T advances in the Northern mountainous area

Over the past few years, the Government has shown great interest in supporting the promulgated policies to help improve the system of research and application and transfer of S&T advances in agriculture. Ministry of Science and Technology, under the guidance of the Government, has made great efforts in improving both the research and transfer system. These efforts have achieved remarkable results: improving the organizational apparatus in both the research area and the technology transfer area, while significantly improving the relevant management mechanisms of science, capital, balance sheet... which help to significantly improve the effectiveness of these works.

3.1. Focused policies on S&T advance in agriculture in Northern mountain region

Firstly, increasing investment in research and transfer of S&T advances in agriculture: The proportion of investment in research and transfer in the provinces in the region is about 0.4-0.5% of total budget expenditure. Of this, 37-38% of the budget will be invested in agriculture. In terms of content, most of the transfer programs focus on cultivating fields, assaying rice varieties, crops, applying intensive farming techniques, pest management, vaccination, disease prevention for livestock, holding, multiplication and development of forest seedlings.

Secondly, the formation of a transfer system: This system involves the participation of agricultural promotion staff at state level, research institutes and enterprises, initially involving the transfer system of the community. Funds from the State budget for agricultural promotion activities in the past 15 years increased 12.7 times, average annual increase of 8.5% per year. Provinces are striving to have each commune, especially the communes under category 135, have an agricultural promotion staff to transfer. In many places such as Lao Cai, each cluster has 1-2 agricultural promotion workers and subsidies for agricultural promotion (Son La, Ha Giang, Lao Cai,...).

Thirdly, implementing subsidy and subsidy policies for farmers to apply S&T advance: The government has a policy to subsidize the transportation of materials, fertilizers and seeds to remote areas, tax exemption and reduction for individuals/enterprises who research, apply and successfully transfer S&T advances. Many provinces in the region subsidize new varieties for farmers from 30 to 35% in Lang Son and 50% in Lao Cai. With livestock, 100% of cattle, piglets and 50% of sows are supported in Lao Cai.

Fourthly, Government has implemented many programs in NM area such as:

- The Mountainous Country Program 2016-2025 is chaired by Ministry of Science and Technology. With supporting policies such as: application and transfer of S&T advances through specific models which are suitable to each locality; Training, fostering and development of a team of ministries in service of application and transfer of S&T; Developing a database of S&T advances, conducting dissemination activities on S&T knowledge;
- The Northwest Program is chaired by National Universities. With the main contents: Research, database development, scientific basis, model of sustainable development; Study the scientific basis of appropriate socio-economic development models for subregions and inter-regions; Researching, proposing and transfering S&T solutions for economic development, transport, information, cultural and social infrastructure, rational use of natural resources and environmental protection, prevention and mitigation; The study identified the need for human resources training and proposed appropriate training solutions for human resource development;
- The program of S&T serving the new rural development is led by Ministry of Agriculture and Rural Development, with the following basic policies: To study, propose the supplementation and perfection of mechanisms and policies for construction new countryside; Researching and proposing S&T solutions for the construction of new rural areas; Building a number of demonstration models on new rural areas on the basis of application of S&T achievements and solutions; Developing content and organizing some training programs to enhance the capacity of practitioners to acquire and apply S&T to those who are involved in new rural construction, especially the technology transfer officers, farmers and businesses.

On the other hand, provinces also carry out many local private sector development programs (supporting service of seed/livestock, agricultural

materials, etc.). Many provinces have considered transferring advances in science and technology as one of the important contents of the agricultural restructuring program, building a new rural model.

3.2. Inadequacies of applied policy, transfer of scientific and technological progress in Northern mountainous region

Mechanisms and policies to promote the application and transfer of S&T advances in agriculture have helped NM farmers to apply new techniques, making a great leap in crop and animal productivity. Raising, contributing to poverty reduction in rural areas. However, there are many inadequacies, some of which have limited the effectiveness of application, transfer technology advances to farmers. The shortcomings are:

1) The mechanism for reforming the organizational system and managing the application and transfer of scientific and technological advances has been promulgated, but the implementation guidance has not been good, causing difficulties in the implementation process. Not yet created effective mechanisms for effective operation of research and technology transfer units: There are still some studies that are not based on requirements from actual production; Research capacity at the grassroots level is very weak so the effectiveness of the research results is not high. Current policy on S&T management does not encourage enterprises to actively participate in coordinating, transferring scientific and technological advances, or rather, solutions to encourage socialization of this work are ineffective. Projects under the State Program are mainly transferred from the top down, not creating local initiative. During the implementation of the project, sometimes the coordination between management agencies and transferring units has not been tight, leading to the results of project implementation has not achieved high results.

   It takes a year and a half (starting to build the plan in December or January each year), but until the implementation is April of next year, so project descriptions were made to the approval level and started to take 16 months). Therefore, most of the projects affected the inflation rate. There is a technology project being transferred but it has become outdated by the emergence of new technology that has affected the outcome of the project.

2) The financial policy for research and transfer of scientific and technological progress is still inappropriate. More than 90% of surveyed transfer officers and interviewed managers confirmed that the financial mechanism for advancing technology transfer in agriculture

has many inappropriate points. *Firstly*, the norm Expenditure of items as guided in Circular 55/2015/TTLB/BTC-BKHCN shall only be provided for all types of subjects and projects without specific levels for items of subjects, Project implementation in mountainous areas difficult. *Secondly*, funds for transfer and support for the development of the technology transfer model are not transferred directly to the transferor. *Thirdly*, funding for transfers in one province is often held by multiple agencies (DOST and DARD, DOF), which leads to overlapping, wasteful and ineffective investments. *Fourthly*, the annual demand for the implementation of local projects is very large, because the budget is limited so not meet the demand. *Fifthly*, communities, villages, communes and districts are often not held financially. This situation makes the funds ineffective because they have to follow the superiors' plan. It is necessary to study the financial decentralization of different types of model projects among different ministries, provinces, districts, communes and communities. *Sixthly*, the current financial transfer policy does not regulate expenditures for agencies that administer local transfer programs. This has led to a shortage of funds for monitoring and monitoring the implementation of programs to transfer the basic technology to farmers. *Seventhly*, the current financial mechanism only allows farmers to attend training courses, not allow them to work as specimens, samples, practice, but investment in training materials is very small.

3) Information and Communication Infrastructure: There has no strong science and technology information infrastructure has been developed to support the dissemination of mechanisms and policies on state management of science and technology. Lack of technology and technological know-how database has led to limited market for S&T. S&T information centers in localities have not been developed, consolidated and modernized in a uniform manner. Communication on applied models and technology transfer in localities is still limited, not encouraged to replicate the model after the project ends.

4) Group of supporting policies supporting the application of S&T advance is currently the most effective in helping bring S&T into agricultural production. However, the projects producing goods are not large scale, not closed from the stage of development of raw material areas to preliminary processing, processing and bringing products to market or in other words, the organizing of production and consumption of products have not been developed under “chain”. Implementation of application, maintenance and replication of the model (project results) in production practice face some difficulties: In

terms of production capital (mostly poor ethnic people without capital), the grasp of technical progress is limited (due to low educational level). The dynamism of the local staff, the technical staff trained from the project is limited, not active in the implementation, maintenance and replication of the model (project results) into local practice.

In summary, the system of policies to promote the application and transfer of scientific and technological advances in agriculture has made many innovations facilitate the positive changes of agriculture in the NM region in the past time. However, this policy system, in addition to its remarkable advantages, still has many points that need to be further supplemented and adapted to the development of agricultural production in the context of national integration. In order to do this, attention should be paid to some of the issues that are considered to be the causes of these problems, including: non-policy factors such as the capacity of S&T managers, as well as policy-related factors such as the direction of policy implementation, the consistency and practicality of the policy, the investment capacity of the State for the implementation, regulations related to the implementation of policies... To promote the achievements, overcome the shortcomings in the research, transfer and application of scientific and technological advances in agriculture need a lot of different solutions in which the solution perfecting the incentive policy, promoting the application. Transfer of scientific and technological advances in agricultural production is important, pivotal, paving the way for other solutions.

4. Policy proposals for transferring S&T advance in the Northern mountainous area in the coming period

Firstly, it is necessary to further rearrange the research system according to the basic research group, applied research; Establishment of a new incubation center for agricultural technology testing in the NM area. The promotion system should be reformed in a way that links application and transfer to meet the needs of agricultural production as a basis for the development of connectivity across the whole process from research and transfer to apply advanced science and technology in agricultural production.

Secondly, the project selection closely follows the actual needs of the locality to identify projects that are in line with the socio-economic development planning and development and bring into full play the strengths of the locality. On that basis, select appropriate technologies, prioritize projects that exploit the potential of the area, create new products, and take measures to create the market.

Thirdly, technology transfer agencies must have affirmed technology, or have a firm grasp of the technology to be transferred, have scientific and technological potentials, and have enthusiastic and enthusiastic transfer staff. Help people acquire new techniques during project implementation. Special attention should be paid to cultivating awareness and skills for the recipients, building a contingent of technicians and improving production management for local staff so that they can maintain and continue their work. Develop the results of the project when the transferd-technology staff leave from the area and must build a system of technical services to serve farmers when the need to expand production.

Fourthly, attention should be paid to encourage enterprises to participate in the project implementation in order to innovate technology to create high value products and attract social resources to participate in production. The role of the business will be the nucleus that creates the link between the five: managers, scientists, entrepreneurs, farmers, ice-houses.

Fifthly, it is necessary to attach importance to summarizing, drawing experiences and disseminating experiences and information to people in order to promote the spread of the project. In order to maintain and develop the transferred technologies, the replication of high efficiency models for mass production in the area and in other areas should have the following elements:

- Summing up and assessing the economic efficiency of the implemented models and promoting dissemination of information, knowledge and experience in the community;
- Applying scientific and technological solutions successfully applied in models into indicators and measures in the local economic development plans (province, district and commune);
- Use investment from other socio-economic programs to encourage the expansion of effective models.

Recommendations

Firstly, further promulgation of legal documents concretizing the Government's undertakings and policies related to research, application and transfer of S&T advances in agricultural production, especially for mountainous and ethnic areas.

Secondly, planning and development of research, application and transfer of S&T advances in the agricultural sector in each period of socio-economic development planning are in line with the development orientation of each sub-ecological zone.

Thirdly, actively with the public S&T organizations, the state agricultural promotion system to formulate policy proposals to the Government to remove difficulties in the process of implementing autonomous management organization towards autonomy and effiency./.

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