

TECHNOLOGY AND SCIENCE AS DRIVERS OF FARMING ACTIVITIES IN VIETNAM

Presenter

Hop Tien Agricultural Cooperative

Description

Vietnam is an agricultural country and is assessed by UNDP as one of the top five countries in the world that are directly vulnerable to climate change. The negative evidences of climate change in Vietnam are becoming more and more evident: sea levels have risen, as well as drought and saltwater levels in the Mekong Delta; more and more floods have affected the northern and central mountainous areas; extreme weather events such as prolonged hot weather are becoming more and more serious, negatively affecting agricultural activities.

The rise of sea levels has resulted in a reduction of arable land, changing crop structure, crop distribution and production techniques, leading to the appearance of foreign organisms and increasing disease. In addition, frequent weather changes have damaged crops and livestock production.

In recent years, the Ninh Binh province has been frequently affected by storms and tropical depressions; extreme weather events such as prolonged hot weather, severe cold, epidemics and erratic rainfall have been seriously threatening agricultural production. Specifically, climate change has shortened the growth time of many crops, reducing productivity by about 300-500 kg/ha of rice, 100-200 kg/ha of peanuts and soybeans.

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- The application of innovative new farming methods to increase plant resistance, paired with the usage of organic fertilizers, preventing pests and diseases with biological products.
- Changes in the farming structure in line with climate change events, with the direction of specialized agencies. By way of example, if an area under rice cultivation was not efficient, the crops have been replaced by fruit trees, and aquaculture.
- A new focus on promoting internal resources, mobilizing resources from members, investing in infrastructure of canals, ditches, machinery, warehouses and working offices, to ensure the quality of successful service to serve its members and customers.
- The reinforcement of research and testing to bring new seedlings that are resistant to climate change into cultivation. Examples include salt-tolerant rice varieties and water-tolerant crops.



Results

The results of this innovative approach have mainly concerned:

- **An increase of rice yields** by 15-20%, compared to the previous years before the introduction of new rice varieties, reaching 67 quintals/ha. In addition, cultivated maize products have reached 450 kg/acre (360m²).
- The production of **quality agricultural products**. Several products have been produced safely and organically, such as glutinous rice, which is realized with 100% organic fertilizers and without herbicides. Glutinous rice is grown in an entirely mechanised process. This technique also includes dosing the water so that the rice plants grow and develop properly, avoiding pests and diseases.
- **An increase of the economic value of the cultivated area**. The revenue of the cooperative in 2020 reached over VND 7.5 billion (an increase of VND 2.9 billion compared to 2015), with profit reaching 225 million VND, and it is estimated that in 2021, revenue will reach 8.7 billion VND. This increase of value has also made possible thanks to the conversion of some rice-growing areas to short-term vegetables crops such as young cucumber, mushrooms, sweet corn, cherry tomatoes etc., bringing about 3-4 times more efficiency than rice cultivation.

Climate smartness

This story captures the importance of the integration of science and technology for sustainable food production. At the same time, strengthens the social fabric by engaging the farmer's members in conducting research around climatic factors. Crop management practices —for example, testing stress-tolerant seeds or recently developed machinery for sowing and other farm activities— allow an active and timely response to climate risks and impacts. Explicit food security and adaptation outcomes are addressed when yield increase and produce quality objectives are attained, and when alternative and diversified cropping systems are explored to better adapt farmers and farming systems to changing climate and market conditions. In complement, seek for building a model of safe agricultural production, towards organic, environmental-friendly, high-economic value and more efficient use of natural resources, provide opportunities to improve rural livelihoods, and overcome ongoing and future agricultural challenges linked to environmental degradation, poor soil health and nutrient depletion, lack of employment possibilities and rural-to-urban migration, abandonment of the land and farming, rural ageing, loss of traditional knowledge, and deepening of gender and social inequality, among other events, that are expected to be exacerbated due to adverse changing climate conditions.

