

Technology Fact Sheet

Plant genetics to select and create new drought-, flood-, and pest-resistant species for climate change adaptationⁱ

1) Technology description

Biotechnology is widely used in forestry, such as plant cutting, tissue culture, cross-breeding, genetic engineering or the recent genetic modification technology. Techniques to develop new genes that define resistance to pest and diseases have been applied successfully in Vietnam and produced some results. Crossbred or genetically modified plants that can tolerate drought and resist diseases have been created. This technology is applied in many pulp plantations on a large-scale to produce pulp materials for paper manufactures with high productivity.

2) Social – economic benefits

- Having high economic benefits, increasing productivity and reducing the risks of pests and diseases.
- Increasing income of local people.

3) Environmental benefits

- Promoting afforestation and reforestation in degraded lands.
- Preventing pest and diseases.
- Reducing pesticide use in production.

4) Status of technology

- Several national biotechnology research and development programs are going to be underway by 2020 and the Government has decided to increase investment in science and technology in Vietnam. Although actions have been taken to increase the economic value of goods and services, generally the results are not positive; in fact, there have not been an industry and market for biological products.
- There are many overlaps in biological research over the years due to the lack of coordination between research institutes, thus wasting investment in biotechnology.
- Although there are many programs on developing biotechnology in agriculture and aquaculture, there is not enough attention to the content industry development biology.
- Assisting-industries support for bio-industry has not developed.

5) Application potential

Large-scale; highly potential in forestry; requiring further research for development.

6) Barriers

High costs, leading to high prices while forestry production activities usually have low budget, which may prevent access from poor people.

7) Costs

Implementation and technology application costs

- Implementation costs of research and application of this technology depends on the characteristic species of each subject, scale transfer research. Average cost approximately 143.000 USD / species (including the cost of research, technology transfer).

Incremental costs to adapt to climate change (compared to conventional technology)

- None because the technology itself creates products to adapt to the environment.

ⁱ This fact sheet has been extracted from TNA Report - Adaptation for Vietnam. You can access the complete report from the TNA project website <http://tech-action.org/>