



Mains Practice Question

Q. How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered off by the science-based technologies? (UPSC GS-3 Mains 2020)

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Approach

- Start the answer by briefly discussing the role of science and technology.
- Discuss, with examples, the impact of Science-Based Technologies on Agriculture.
- Conclude suitably.

Introduction

Many believe that science is the greatest collective endeavor. From the micro to the macro level, science, and technology influence almost every aspect of human life. The role of science-based technologies in transforming agriculture is one such example.

Body

Impact of Science-Based Technologies on Agriculture

- **Green Revolution:** During the Green Revolution in the 1960s, India could achieve self-sufficiency in food grain production by using modern methods of agriculture like better quality of seeds, proper irrigation, chemical fertilizers, and pesticides.
- **GM Crops:** Genetically modified (GM) crops are believed to be one of the many S&T innovations for increasing productivity and food security.
- **Precision Agriculture:** Information and communication technologies and mobile technology is playing an important role in monitoring and controlling crop irrigation systems.
 - If modern agriculture is applied widely in the near future, millions of farmers will be able to benefit from the acquisition of real-time farm information.
- **Sustainable Agriculture:** Commercialization of Agriculture, all across the world, has led to the increasing use of chemical fertilizers, widespread mechanization, etc. This has led to environmental detrimental agriculture.
 - The ongoing research in agriculture sciences can make agriculture more sustainable.

Conclusion

Whether science and technology is a boon or bane, is the never-ending topic of debate. It is difficult to predict the future of technology in agriculture but there are many promising trends and pilot projects.

