



## Mains Practice Question

**Q.** What is Bio-fortification? How it can help in realizing the objectives of the National Nutrition Mission? (150 words)

04 Feb, 2019 GS Paper 3 Economy

### Approach

- Give brief introduction on Biofortification
- Discuss how Biofortification can help in National Nutrition Mission
- Give other advantages of biofortification

### Introduction

- **Bio-fortification:** Bio-fortification is the process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology.
- It differs from conventional fortification in that bio-fortification aims to increase nutrient levels in crops during plant growth rather than through manual means during processing of the crops.

### Body

- **National Nutrition Mission:** Government has set up National Nutrition Mission (NNM) for improving the nutritional indicators of children and pregnant women and lactating mothers.
- The Mission aims to prevent and reduce prevalence of stunting among children (0-6 years) in the country by 6%, undernutrition (underweight) prevalence among children (0-6 years) by 6%, prevalence of anaemia among children (6-59 m) by 9%, prevalence of anaemia among women (15-49 years) by 9% and reduction in prevalence of low birth weight by 6%.

### Bio-fortification can help in achieving the objectives of National Nutrition Mission:

- Micronutrient deficiencies, also known as hidden hunger, occur when there is a lack of essential vitamins and minerals in a person's diet and can contribute to stunted growth, poor cognitive development, increased risk of infections and complications during pregnancy and childbirth.
- Through Bio-fortification micronutrients are added to commonly consumed foods. This strategy can be implemented at population level, and does not require individuals to change their eating behaviours.
- It is feasible to fortify foods with several micronutrients simultaneously, to treat multiple micronutrient deficiencies that often coexist in a population that has a poor diet.
- It is sustainable method of fortification as fortification passes on from one generation to next generation of crops without further investment and effort (on bio-fortification).
- Bio-fortified crops have higher yielding along with higher disease resistant and drought tolerance. These advantages are boon to the poor undernourished farmers.
- This method is far more cheaper compared to addition of nutrients in the processed foods and can easily be adopted for a large poor and undernourished population.

### Conclusion

- Bio-fortification may therefore present a way to reach populations where supplementation and conventional fortification activities may be difficult to implement and/or limited.
- Of course, bio-fortification is a partial solution, which must go hand in hand with efforts to reduce poverty, food insecurity, disease, poor sanitation, social and gender inequality. But it has the potential to contribute to the eradication of hidden hunger, and the UN's aim to end all forms of hunger and malnutrition by 2030.

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