15 Dec 2023
Friday.

Q.2 What do you know about Bio-fortified crops? What role do they play in addressing malnutrition in India (150 words)?

Soln. Bio-fortification of crops is a type of technique in which crops are added with some essential minerals, vitamins etc, which are very much effective ~~in~~ for Human Health.

There can be 2 types of Bio-fortification process

(1.) By coating the crop with essential minerals and vitamins. But they can be washed off at the time of cleaning the crops.

(2.) By converting the crop into a ~~powder~~ powder and then adding multivitamins, minerals in it. Hence while washing they will not be washed off.

eg: Bio-fortification of Rice, Wheat, Beans, Sweet ~~pho~~ potato, maize etc are being done in India.

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Benefits :

1. Bio-fortification make sure the essential nutrients like minerals, vitamins etc are being included in crops.

2. Essential for Crop/food security. As by having only one type of crop, Children & people can have nutritious food.

3. Helps in sustainable Agriculture practices; Hence will have spill over effect on Climate Change preventions as well.

4. Helps in improving the Human Development Index by ~~improving stunt~~ reducing stunting and Wasting. And also malnutrition problem can be overcomed through it.

5. Reduces the Administrative, Logistics governance also. As one crop will contain the nutrients of multiple crops.

Hence Biofortification should be continued at the higher level and it should also include more crops. Specially to poor and vulnerable group will be more benefitted from it. India should look forward in Technology Upgragration and mechanization of this area.

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Do not write anything this margin (इस भाग में कुछ ना लिखें)

Q. Ground water is being pumped and used faster that it can naturally replenish. Discuss its impacts on geographical and environmental aspect (250 words)?

Ground water makes up about 30% of the world's fresh water supply. Hence is very traditional way is to pull the ground water for Agricultural purposes; commerical purposes etc.

Why Ground Water is important:

1. Getting the ground water everywhere is possible and hence convienent.
2. It is considered as a vital supply for humans
3. Used at multiple stages like Seeding, Irrigation, manufacturing, etc.
4. Important role in Water Cycle, and also for Climate Change, drought conditions, ecology.

Impacts on Geographical Aspect:

1) More pumping of Groundwater, creates the land degradation, hence drought conditions.

2) Make land not suitable for agriculture will groundwater is pumped out beyond the limits

3) Extraction of Ground water can also cause land subsidence. Hence land sliding in Himalayas become common eg: Joshimath (2022)

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4) Extraction of Groundwater can also causes fractured in hard rock terrains.

5) It effects the topography of an region, including Geology, land use etc...

Environmental Aspect :-

1) impacts the Water table of the Region hence affecting the Water cycle of the atmosphere.

2) Environmentally, it gives rise to alot of Disaster.

3) Climate Change : In ~~tropical~~ arid region, at the time of summer, groundwater is considered to be very essential.

4) Properties of minerals are also being changed due to extraction of ~~Environment~~ ground water.

Government Initatives :-

1) Creation of National Ground water management

2) Atal Bhujal Yojana on sustainable groundwater

3) Jal Shakti Abhiyan accelerate Water conservation

4) National Water mission.

Challenges :-

1) Less awareness among people to conserve the groundwater and also about its uses and effects

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2.) With increasing population the need of water as a resource is also increasing.

3.) Private sector involvement is absent as it is a welfare programme.

4.) People, specially farmers are not provided with better and effective alternative of Ground water.

5.) Water managment practics are not being applied in true spirit.

Way forward :-

"Protecting our Groundwater : A priority for a sustainable future".

Hence Water conservation, Extraction of guound water regulation, Awarness, and promoting alternative source of water should be our priority.