

(Please do not write anything except the question number in this space)

कृपया इस स्थान में प्रश्न संख्या को अतिरिक्त कुछ न लिखें।

17.10.23

UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.
Content of the Question is more important than length.
(Specimen Answer Booklet - For Practice Purpose Only)

उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
Candidates must not write on this margin

Sustainable water management is critical to address impending food and nutrition security threats. Evaluate. (250 ~~words~~)

Water resources and its availability plays a vital role in all the aspects of one's life and sustainable management of the same is critical in the case of food and nutrition security. Availability of water resources has become more challenging due to the increasing effects of climate change in food production. Countries around the globe experience drastically unprecedented rainfall patterns, higher temperatures, land degradation, flood/inundation, glacial lake outburst flooding, decrease in soil fertility, acidification of water resources, prolonged dry spells and all alike.

In India, about 60% of the net sown area is rained region and those contribute to 40% of total production. These regions heavily depend on rainfall and soil moisture content for production. If there is a prolonged dry spell in those regions and if there no proper irrigation technology and if the farmer is a small scale producer, this scenario is a threat to his/her livelihood. Unfortunately, in India, there are approximately 60% ^{of} small scale producers (or) small farmers and they are particularly vulnerable to climate shocks and land degradation.

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A large amount of freshwater is stored in the form of glaciers in the Himalayan region (in the case of India). Recently, due to global warming exacerbated by anthropogenic activities, are leading to the melting of those glaciers which eventually results in flooding in the downstream regions. (eg): Teesta river in Sikkim (glacial lake outburst flooding). These kind of extreme events damage the agricultural crops and degrade the agricultural land which eventually leads to food insecurity.

Without proper adaptation measures, rained rice yields in India are projected to reduce by 20% in 2050 while irrigated rice yields are projected to decline by 3.5% in 2050. Climate-smart agricultural practices and proper irrigation system can be an effective measure to make agriculture more resilient.

India has been ranked 111 out of 125 countries in the recently published Global Hunger Index report ⁽²⁰²³⁾, indicating a serious level of hunger. Child stunting is prevalent at 35.5%, according to NFHS-5 and the prevalence of Undernourishment is at 16% in India. We are also experiencing a severe micronutrient deficiency, also known as hidden hunger. These are majorly due to inefficiency in agricultural practices, reduced crop yields, extreme weather events, climate change and crop failures due to natural disasters.

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Several measures are being taken by UN agencies for sustainable water management by reducing water stress and to meet SDG 6 - ensure availability of water, sustainable management & sanitation for all. Few of the measures are :-

- (a) ^{the} Food and Agriculture Organisation (FAO), in Andhra Pradesh, Karnataka, Maharashtra and Himachal Pradesh is piloting a crop forecasting model integrating climate, soil features & market information to aid rained farmers in making informed decisions in contributing to food security.
- (b) UN World Food Programme ^(WFP) supports water conservation by building flood barriers, irrigation canals, dams through food assistance in exchange of labour.
- (c) International Fund for Agricultural Development (IFAD) supported projects in Maharashtra, Nagaland, Mizoram, etc., that incorporated climate-resilient seed varieties and crops like millet (which contributes to nutritional security too), train farmers in climate-sensitive agricultural practices.
- (d) WFP is also promoting a millet-value chain that reduces water usage and improves nutrition.