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Q4

Explain various types of revolutions, took place in Agriculture after Independence in India. How these revolutions have helped in poverty alleviation and food security in India?

UPSC Civil Services Mains 2017 · GS III · 10 marks · Crops, Irrigation and Marketing

Major crops - cropping patterns in various parts of the country; different types of irrigation and irrigation systems; storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

Core demand of the question

- Explain the main agricultural revolutions in India after Independence
- Show how they helped food security and poverty alleviation, and where gaps remain

Revision summary

The **Green Revolution** raised wheat and rice with seeds, water, fertiliser and procurement, ending ship-to-mouth cereal shortage.

Operation Flood built cooperative milk; Blue, Yellow and Golden revolutions targeted fish, oilseeds and horticulture.

PDS, FCI buffers and **NFSA 2013** converted grain surplus into household cereal access.

Dairy, fish and horticulture add protein, micronutrients and daily income that grain alone does not.

Gains were regionally uneven; nutrition and rainfed poverty remain unfinished.

Introduction

After Independence, India faced **food shortage** and rural poverty. A series of **commodity revolutions** raised output of grain, milk, fish, oilseeds, horticulture and related products. They did not all start in the same decade, and they did not all reach the same regions. Together they moved the country from **ship-to-mouth** grain toward **self-sufficiency in staples**, and they created new rural incomes. Poverty and nutrition gaps did not disappear.

Body

Types of revolutions after Independence

- **Green Revolution (1960s-70s):** high-yielding wheat and rice, irrigation, fertiliser and procurement in Punjab, Haryana and western Uttar Pradesh, later spreading in the rice bowl. **National Food Security Mission** later tried to take the grain push to eastern India.
- **White Revolution / Operation Flood (1970s-90s):** Amul-style dairy cooperatives under the National Dairy Development Board raised milk production to the world's largest, with village collection and urban markets.
- **Blue Revolution:** inland and marine fisheries, hatcheries and, later, **Blue Revolution schemes** to raise fish protein and coastal livelihoods.

- **Yellow Revolution:** oilseeds (and related pulses effort) to cut edible-oil imports; results were uneven, so import dependence remains.
- **Golden Revolution:** horticulture (fruit, vegetables, spices, honey) under missions that expanded orchards and kitchen nutrition.
- Related labels include **Grey** (fertiliser), **Silver** (eggs and poultry), **Pink** (onions, prawn or meat in different usages), and **Evergreen Revolution** (M.S. Swaminathan: productivity with ecology).
- Supporting tools today include **Pradhan Mantri Krishi Sinchayee Yojana**, **soil health cards**, **e-NAM (2016)**, and the **National Food Security Act, 2013** for the consumption side.

Food security

- **Green Revolution** grain plus **Food Corporation** buffers and the **public distribution system** ended famine-scale cereal shortage and allowed NFSA entitlements of rice and wheat.
- White and Blue revolutions added **protein and fat** that cereals alone cannot give, which is food security in a wider sense.
- Horticulture improved **micronutrients** where markets and roads exist.
- The same **Green Revolution** mix also locked some regions into **rice-wheat**, groundwater stress and micronutrient-poor diets, so calorie security is not the same as nutrition security.

Poverty alleviation

- Higher cereal output lowered real food prices for **net buyers**, which include most of the urban and land-poor rural poor.
- Dairy, poultry, fisheries and horticulture created **daily cash** for smallholders and women in cooperatives, which grain harvests do not always provide.
- **Gains were** uneven: irrigated north-west and some coastal belts gained more than rainfed central and eastern tracts, so poverty fell slower there.
- Landless labour gained from cheaper grain but not always from asset revolutions that need a cow, a pond or a well.

Flow diagram

Green grain -> Cereal food security PDS
 White milk -> Protein and daily cash
 Blue fish -> Protein and daily cash
 Yellow oilseeds -> Cereal food security PDS
 Golden horticulture -> Nutrition
 Cereal food security PDS -> Poverty relief for net buyers
 Protein and daily cash -> Poverty relief for net buyers

Conclusion

Post-Independence agricultural revolutions raised staple grain, milk, fish and horticulture and underpinned PDS food security and some rural cash incomes. They cut mass hunger more than they cut regional and nutritional poverty. The next step is an evergreen mix: water, protein, eastern grain, and markets, not only another wheat-rice spike.

Facts & figures

Green Revolution

HYV wheat and rice, irrigation and fertiliser from the mid-1960s, concentrated first in Punjab, Haryana and western UP.

Operation Flood

NDDB dairy programme that linked village cooperatives to city markets and made India the largest milk producer.

NFSA 2013

National Food Security Act: legal cereal entitlements through PDS for a large share of the population.

e-NAM

National Agriculture Market (2016): electronic mandi network meant to improve price discovery after the production revolutions.

PMKSY

Pradhan Mantri Krishi Sinchayee Yojana: water-use mission (Har Khet Ko Pani, more crop per drop) to spread Green Revolution irrigation more widely.

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