

Rainfed Agriculture in India

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Rainfed areas account for nearly 57 per cent of the agricultural land in India. These areas assume special significance in terms of ecology, agricultural productivity and livelihoods for millions. With proper management, rainfed areas have the potential of contributing a larger share to food grain production. In-fact the potential is such that there is more opportunity for faster agricultural growth here than in irrigated areas.

In news: 'Rainfed farmers are the most neglected'

Placing it in syllabus: Agriculture

Dimensions

- Features
- Critical inputs
- Lack of policy directives
- Government Schemes
- Way forward

Content:

Features:

- Rainfed agriculture is a type of farming that relies on rainfall for water. It provides much of the food consumed by poor communities in developing countries.
- Rainfed areas in India are highly diverse, ranging from resource rich areas to resource-constrained areas.
- Some of the resource rich areas are highly productive and have experienced widespread adoption of technology. However, most of the areas are resource constrained and dry areas.
- In the resource constrained and dry areas, the farming is a survival mechanism rather than a growth oriented

activity.

- Rainfed agriculture contributes to 60 per cent of the value of agriculture GDP of India
- Rainfed agriculture is practiced under a wide variety of soil types, agro-climatic and rainfall conditions ranging from 400 mm to 1600 mm per annum.
- Rainfed Crops are prone to breaks in the monsoon during the crop growth due to water stress.
- This water stress may be due to variability of rainfall, delay in sowing, diversity in crop management practice and variability of the soil type.
- The prolonged breaks can result in partial or complete failure of the crops.

Interesting Facts on Rainfed Agriculture:

- India ranks first in rain-fed agriculture, both in area and value of produce.
- About 61 per cent of India's farmers rely on rain-fed agriculture and 55 per cent of the gross cropped area is under rain-fed farming.
- Farmers in irrigated areas earn 60 per cent of their income from agriculture. However, farmers in rainfed areas earn only 20-30 per cent from farm-related activities
- They account for 89 per cent of millets production, 88 per cent of pulses, 73 per cent of cotton, 69 per cent of oilseeds and 40 per cent rice production in the country.
- Besides, rain-fed areas support 64 per cent of cattle, 74 per cent of sheep and 78 per cent of goat population in the country.

Critical Inputs

- The Rainfed farming system mainly dependent upon the locally available inputs (seeds, manures, animal draft)

- Usually crops that are able to withstand drought-like situations are mostly grown.
- Exploitation of the groundwater resources is a common feature to supplement rainfall.
- The lack of timely availability of quality seeds impels a significant proportion of farmers to rely on local varieties and local sources of seeds, whose quality is not assured.
- There is limitation of affordability and acceptability of high input requiring seeds due to high input risk under the conditions of low and uncertain rainfall as well as lack of access to any reliable means of irrigation. Marginal and small farmers are particularly constrained.

Over the years, farmers in rain-fed areas have been facing several adversities such as climate variability, crop failure, non-remunerative prices, etc.

The rainfed lands suffer from a number of biophysical and socio-economic constraints which affect productivity of crops and livestock. These include:

- Low and erratic rainfall,
- land degradation and poor productivity ,
- low level of input use and technology adoption,
- low draft power availability
- inadequate fodder availability
- low productive livestock and
- resource poor farmers and inadequate credit availability.

Other Issues Related to Rainfed Farming

Farmer suicides in Rainfed areas:

- Many of the farmers in these regions started cultivating high value crops which requires intensive use of costly inputs (chemical fertilizers/ pesticides, hybrid seeds,

life saving irrigation, farm energy etc.)

- Due to high input costs farmers find it difficult to manage the resources on their own.
- This is the major reason for growing farm suicides in rainfed areas.

Over-Exploitation of Groundwater Resources:

- The cropping patterns also changed with the advent of the green revolution, electricity and groundwater tube wells.
- The switch to a cropping system that uses more water than is available has forced farmers to rely on groundwater.
- The too much exploitation of the groundwater by tube wells led to the depletion of this finite resource.

Lack of policy directives:

- Rain-fed agriculture has historically been at the receiving end of imbalances in terms of policy and public investments.
- Government spending on procurement shows policy bias towards rainfed agriculture.
- The government spent ₹5,40,000 crore on procuring rice and wheat at MSP (Minimum Support Price) between 2003-04 and 2012-13.
- In comparison, its expenditure on procurement of major rain-fed crops such as coarse cereals, millets and pulses during the same period was merely ₹3,200 crore

Government Schemes:

Rainfed Area Development Programme (RADP):

- Rainfed Area Development Programme (RADP) was implemented as a sub-scheme under **Rashtriya Krishi Vikas Yojana (RKVY)**.
- To **improve quality of life of farmers**, especially, small

and marginal farmers by offering a complete package of activities to maximize farm returns.

- **Increasing agricultural productivity of rainfed areas** in a sustainable manner by adopting appropriate farming system based approaches.
- To **minimise the adverse impact of possible crop failure** due to drought, flood or uneven rainfall distribution through diversified and composite farming systems.
- **Restoration of confidence** in rainfed agriculture by creating sustained employment opportunities through improved on-farm technologies and cultivation practices
- **Enhancement of farmer's income and livelihood support** for reduction of poverty in rainfed areas
- The basic endeavour of this programme is to encourage exploitation of different farming systems based on the natural resource endowments created by the farmer or by schemes like the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), Rashtriya Krishi Vikas Yojana (RKVY), National Horticulture Mission (NHM).

NRAA Drought Proofing Action Plan:

- **The National Rainfed Area Authority (NRAA)** is working on developing a comprehensive drought-proofing action plan for 24 districts in Rajasthan, Andhra Pradesh, Maharashtra and Karnataka
- Districts are identified as drought-prone according to a study by **Indian Council of Agricultural Research (ICAR)**, based on parameters set by the Intergovernmental Panel on Climate Change.
- The key principles of drought proofing are:
 - (i) to conserve every drop of water;
 - (ii) to enhance water use efficiency (including change in the cropping system and adoption of integrated agricultural systems);
 - (iii) to conserve every inch of soil and

- (iv) risk mitigation.
- The key objectives for success of **Drought Proofing Action Plans** are to enhance the ability of the farming system to cope with expected climate-variations more effectively by adopting resilient technologies and practices.

Way forward:

- If we need to make agriculture a viable proposition in India, there is a need to do more research and development in rain-fed agriculture.
- Work should also be done to bring in more policy and marketing perspective in Rainfed agriculture.

Mould your thought: What are the main features of Rainfed Agriculture in India? Discuss the constraints of this type of agriculture and mention solutions for them.

Approach to the answer:

- Introduction
- Discuss Rainfed agriculture and its features
- Write about the problems in Rainfed Agriculture
- Discuss government schemes
- Write about the way forward