

# Demand Aggregation in Indian Agriculture

The transformation of Indian agriculture is driving an unprecedented demand for skilled manpower across diverse segments. Over the next five years, modernization, mechanization, and digital interventions will significantly reshape workforce requirements. Precision farming, sustainable practices, and post-harvest value addition are set to be key drivers of employment. As rural enterprises and agripreneurship flourish, demand for specialized skills in emerging domains will continue to rise.

## Segment-Wise Skilled Workforce Demand by 2030

### A. Farming and Crop Production

- a) Farming: With increasing mechanization and data-driven practices, demand for skilled farm supervisors, agronomists, and agricultural engineers is expected to surpass 1.2 million professionals by 2030. Adoption of climate-resilient farming methods and government-backed precision agriculture initiatives will further drive employment.
- b) Farm Mechanization and Precision Farming: The integration of AI-driven farming solutions, drones, and IoT-based monitoring will require 260,000 skilled professionals to operate, maintain, and optimize technology-based solutions.
- c) Agriculture Crop Production: By the end of this decade, over 1 million trained personnel will be needed to support commercial farming, hybrid seed development, and sustainable cultivation practices. The increasing role of integrated pest and nutrient management will add to workforce needs.

### B. Horticulture and Landscaping

- a) Amenity Horticulture and Landscaping: Driven by urbanization and infrastructure expansion, demand for professionals in landscaping, ornamental gardening, and green space management is projected to cross 65,000 skilled personnel by 2030.
- b) Production Horticulture: With an increasing focus on high-value crops, hydroponics, and floriculture, skilled workforce requirements in this sector will rise to over 105,000 professionals in the next five years.

### C. Post-Harvest, Inputs, and Soil Health

- a) Post-Harvest Supply Chain Management: By 2030, an estimated 200,000 skilled individuals will be required in logistics, cold chain management, and food safety inspection to reduce post-harvest losses and improve market efficiency.
- b) Agriculture Inputs (Seeds, Pesticides, and Fertilizer): The sector will see a surge in employment, with 520,000 professionals needed to support production, distribution, and advisory services related to high-quality inputs.
- c) Soil Health Management: Expanding soil testing infrastructure and regenerative agriculture practices will create employment for 130,000 skilled personnel, ensuring sustainable soil fertility and productivity.

### D. Agri-Entrepreneurship and Digital Agriculture

- a) Agri-Entrepreneurship and Rural Enterprises: In the next five years, the rise of agribusiness ventures, farmer producer organizations (FPOs), and rural startups will demand 120,000 professionals skilled in business development, financial planning, and supply chain coordination.
- b) Agri-Information Management: The shift toward digital agriculture will require specialists in data analytics, farm management software, and remote sensing applications, with demand exceeding 95,000 professionals by 2030.

#### E. Animal Husbandry, Dairy, and Fisheries

- a) Dairy Farm Management: Automation and scientific breeding techniques will create opportunities for 400,000 skilled professionals in herd management, feed formulation, and dairy product innovation.
- b) Poultry Farm Management: Expanding poultry production and processing will require 270,000 trained individuals in farm management, disease control, and biosecurity.
- c) Fisheries (Marine, Inland, and Aquaculture): With growing investments in aquaculture and seafood exports, employment in this sector will rise to 200,000 professionals, covering hatchery operations, feed formulation, and sustainable fishery management.

#### F. Rural Development and Environmental Management

- a) Watershed Management: Efforts toward climate adaptation and efficient water resource utilization will generate demand for 105,000 skilled professionals in watershed planning, irrigation efficiency, and soil conservation.
- b) Agroforestry: By 2030, initiatives in carbon farming, sustainable forestry, and afforestation will require 160,000 professionals trained in silviculture, biodiversity conservation, and farm forestry management.

#### G. Other Allied Sectors

- a) Beekeeping: The demand for skilled beekeepers and honey processing experts is set to increase, with employment projected at 40,000 professionals. Rising exports and pollination services will further boost workforce needs.
- b) Sericulture: With silk production receiving continued government support, workforce demand in sericulture will reach 27,000 trained personnel, including roles in silkworm breeding and raw silk processing.

### **Total Skilled Manpower Demand by 2030**

By the end of the decade, the Indian agriculture sector will require approximately 5.7 million skilled professionals across various subdomains. With increased focus on mechanization, sustainability, and digital transformation, skilling initiatives must be aligned with emerging industry demands to bridge workforce gaps effectively.