

# **India Drip Irrigation Market By Component (Emitters/Drippers, Pressure Pumps, Drip Tubes/Drip Lines, Valves, Filters, Fittings & Accessories, Others), By Crop Type (Cereals & Grains, Pulses & Oilseeds, Fruits & Vegetables, Olericulture, Others), By Emitter Type (Inline, Online), By Application (Surface, Subsurface), By End User (Agriculture, Non-Agriculture) and By Region, Competition, Forecast & Opportunities, 2020-2030F**

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## **Abstracts**

India Drip Irrigation Market has valued at USD 160.37 Million in 2024 and is expected to reach USD 213.55 Million with a CAGR of 4.76% through the forecast period. This can be ascribed to the limited water resources, and most of its agriculture relies on monsoon rains. Drip irrigation provides a more efficient way of watering crops, allowing farmers to use less water and still achieve good yields. growing population and increasing demand for food, farmers are looking for ways to increase their crop yields. Drip irrigation helps farmers to grow more crops with the same amount of water an excellent growth of India Drip Irrigation Market during the forecast period. Maharashtra has the highest area under drip irrigation in India, accounting for more than major of the total area under drip irrigation in the country. According to ICAR Maharashtra, approximately 80% of the state's total geographical area, equivalent to 17.43 million hectares, is under cultivation. However, only about 17%, or 2.94 million hectares, of this cultivated land is irrigated.

The Indian government has implemented several schemes and initiatives to promote drip irrigation in the country, including subsidies and loans to farmers. This may increase the market of India Drip Irrigation.

Advances in drip irrigation technology have made it more efficient and affordable for farmers. Drip irrigation systems are now more precise and can be tailored to the specific needs of different crops. These factors may anticipate in the growth of India Drip Irrigation Market during the forecasted period. The requirement of food and water also increase because of rising population. For growing crops through traditional method 70% of withdrawal water uses. so, for decreasing the consumption of water the Market of India Drip Irrigation increases.

### Key Market Drivers

#### Rising Water Scarcity is driving the Market

Water scarcity is one of the primary factors promoting the adoption of drip irrigation in India. India is a country with limited water resources, and most of its agriculture relies on monsoon rains. According to the Indian Council of Agricultural Research (ICAR), Maharashtra has approximately 80% of its total geographical area, or 17.43 million hectares, under cultivation. However, only about 17%, equivalent to 2.94 million hectares, of this cultivated land is irrigated.

Drip irrigation is a more efficient way of irrigating crops as it delivers water directly to the plant's roots in a slow and precise manner, minimizing water loss due to evaporation, runoff, and deep percolation. This makes it possible to achieve higher crop yields with less water than traditional irrigation methods such as flood irrigation.

Drip irrigation also allows farmers to irrigate their crops with saline water, which is not possible with traditional irrigation methods. This is particularly important in areas where the water table is high, and the water is saline. As it helps to irrigate crops through saline water also and other features also this may help in the growth of India Drip Irrigation Market. According to data from the Indian Investment Grid, India is home to the world's largest irrigated crop area, spanning 8.26 million hectares, and the second-largest arable land area, covering 159.7 million hectares. This presents a significant opportunity for further growth and investment in the country's irrigation sector. In response, the Government of India has launched the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), supported by a substantial investment of USD 7.7 billion. This initiative focuses on developing irrigation resources, offering a sustainable solution to drought challenges and ensuring the long-term prosperity of India's agricultural sector. Explore investment opportunities and contribute to India's agricultural transformation, fostering fertile lands and bountiful harvests.

Instead of water conservation, drip irrigation has other benefits such as reduced labor costs, improved fertilizer use efficiency, and better control over soil moisture. This can lead to higher crop yields, improved quality, and increased profits for farmers. Water Management Institute (IWMI) found that the adoption of drip irrigation in India led to a 40% increase in crop yield and a 55% reduction in water use compared to flood irrigation.

### Technological Advancement

Technological advancements in drip irrigation systems have led to the development of more efficient, user-friendly, and cost-effective products. For instance, the use of sensors, automation, and remote monitoring has enabled farmers to manage their irrigation systems more efficiently, leading to higher crop yields and reduced water consumption.

Precision agriculture is another area where technology has had a significant impact on the drip irrigation market in India. The use of data analytics, machine learning, and artificial intelligence has enabled farmers to optimize their irrigation systems by analyzing data on soil moisture, weather patterns, and crop growth, among other factors. The development of new materials, such as low-density polyethylene, has led to the production of drip irrigation pipes that are more durable, flexible, and resistant to environmental factors such as ultraviolet radiation, temperature changes, and chemical corrosion. Anticipated in the growth of India Drip Irrigation Market.

The use of solar energy to power drip irrigation systems has also emerged as a significant technological advancement in India. Solar-powered drip irrigation systems have reduced farmers' dependence on electricity and diesel-powered pumps, making irrigation more affordable and sustainable. The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) aims to provide financial assistance to farmers to set up micro-irrigation systems, including drip irrigation. The National Mission on Micro Irrigation (NMMI) is another initiative that promotes the adoption of drip irrigation systems in India. The adoption of technology in the drip irrigation market has not only led to increased efficiency and productivity but has also created new job opportunities in the field of research and development, manufacturing, and maintenance of drip irrigation systems. As the increase in different technologies and resources the market of India Drip Irrigation Also Increases.

### Agricultural Productivity and Crop Yield

Agricultural productivity and crop yield have a significant impact on the growth of the drip irrigation market in India. Drip irrigation systems enable farmers to deliver water and nutrients directly to the root zone of crops, thereby optimizing water usage and enhancing nutrient uptake. By providing precise irrigation, drip systems contribute to improved plant growth, higher crop yields, and better-quality produce. As farmers witness the tangible benefits of increased productivity and profitability, there is a growing inclination towards adopting drip irrigation technologies. The ability of drip irrigation to support a wide range of crops, including high-value horticultural crops, further amplifies its appeal among farmers seeking to diversify their agricultural activities. Thus, the positive correlation between agricultural productivity, crop yield, and the adoption of drip irrigation systems continues to drive the growth of the drip irrigation market in India.

## Key Market Challenges

### High Initial Investment

The high initial investment required for drip irrigation systems can significantly impede the growth of the market in India. This initial cost encompasses various components, including the purchase of drip lines, emitters, filters, pumps, controllers (if automated), and installation expenses. For small and marginal farmers, who constitute a significant portion of India's agricultural workforce, such upfront expenditures can be financially burdensome and may deter them from investing in drip irrigation technology. The return on investment (ROI) from drip irrigation systems is often realized over the long term through savings in water, labor, and fertilizer costs. However, many farmers may prioritize short-term financial concerns and may not have the liquidity or access to credit to afford the initial investment, despite the potential long-term benefits. Consequently, the perceived financial risk associated with high initial costs acts as a significant barrier to the widespread adoption of drip irrigation in India, hindering its market growth.

### Maintenance and Technical Support

Maintenance and technical support represent significant barriers to the growth of the drip irrigation market in India. Drip irrigation systems require regular maintenance to ensure optimal performance, including periodic cleaning of filters, inspection of emitters, and repair of damaged components. However, many smallholder farmers lack access to the necessary technical expertise, spare parts, and maintenance services required to address issues with their drip irrigation systems. Without adequate support mechanisms

in place, farmers may experience difficulties troubleshooting problems or repairing malfunctioning equipment, leading to reduced system efficiency and productivity losses. The absence of reliable technical assistance can erode farmers' confidence in drip irrigation technology, discouraging them from investing in these systems in the first place.

## Key Market Trends

### Sustainability and ESG

Sustainability and Environmental, Social, and Governance (ESG) considerations are poised to significantly influence the growth of the drip irrigation market in India. With increasing concerns about water scarcity, climate change, and sustainable agricultural practices, there is a growing emphasis on efficient water management and conservation in the agricultural sector. Drip irrigation technology offers a sustainable solution by minimizing water wastage, reducing chemical runoff, and improving soil health. As businesses and investors prioritize ESG factors and consumers demand products and services with positive environmental impacts, the adoption of drip irrigation systems aligns with these sustainability goals. Government initiatives and incentives aimed at promoting water-efficient irrigation practices further bolster the market growth. India has introduced various initiatives and subsidies to promote the adoption of drip irrigation. A notable example is the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), which aims to improve water use efficiency in agriculture. Through PMKSY, farmers are provided with financial assistance to install drip irrigation systems, reducing their reliance on traditional irrigation methods and promoting water conservation. In addition to PMKSY, state governments offer incentives and programs to further encourage the use of drip irrigation. These include subsidies for equipment purchases, technical support, and training programs that educate farmers on the proper installation and benefits of drip irrigation systems. The combined efforts of both the central and state governments have played a crucial role in driving the widespread adoption of drip irrigation in India.

The integration of sustainability and ESG principles into agricultural practices will drive the uptake of drip irrigation systems in India, contributing to enhanced water efficiency, increased crop yields, and overall environmental sustainability in the agriculture sector.

### Renewable Energy and Clean Technologies

Renewable energy and clean technologies are expected to play a pivotal role in influencing the growth of the drip irrigation market in India. As the country strives to

address climate change and reduce its carbon footprint, there is a concerted push towards adopting sustainable practices in all sectors, including agriculture. Renewable energy sources such as solar power can be harnessed to provide the energy needed to operate drip irrigation systems, offering a cost-effective and environmentally friendly alternative to traditional grid electricity. By integrating renewable energy solutions with drip irrigation technology, farmers can reduce their reliance on fossil fuels, mitigate greenhouse gas emissions, and lower operational costs in the long run. Advancements in clean technologies, such as precision irrigation systems and smart water management platforms powered by renewable energy, enhance the efficiency and effectiveness of drip irrigation, thereby optimizing resource utilization and promoting sustainable agricultural practices across India. As the country continues to prioritize renewable energy and clean technologies, their synergistic integration with drip irrigation systems will likely drive market growth by offering farmers more sustainable and economically viable irrigation solutions.

## Segmental Insights

### Component Type Insights

In 2024, Drip Tubes is the fastest growing segment in the drip irrigation market primarily due to several factors. Drip Tubes are a fundamental component of drip irrigation systems, serving as the primary conduit for delivering water and nutrients directly to the roots of plants. Their widespread adoption is driven by their simplicity, reliability, and cost-effectiveness compared to other components. Drip Tubes are highly customizable, allowing for precise control over water application rates and distribution patterns, which is crucial for optimizing crop growth and water efficiency. Advancements in Drip Tube technology, such as improved materials, clog-resistant designs, and pressure-compensating features, have enhanced their performance and durability, further solidifying their position as the preferred choice among farmers and irrigation professionals.

### Emitter Type Insights

Inline emitters dominated the drip irrigation market in 2024 due to several key reasons. Inline emitters offer precise control over water flow and distribution, as they are integrated directly into the drip tubing at regular intervals. This design ensures uniformity in water application, which is crucial for optimizing crop growth and minimizing water wastage. Inline emitters are known for their durability and resistance to clogging, resulting in reliable performance over extended periods. Farmers value these



attributes as they contribute to reduced maintenance requirements and overall system efficiency. Advancements in inline emitter technology, such as pressure-compensating features and self-cleaning mechanisms, have further enhanced their popularity among users.

## Regional Insights

The dominance of the North region of India in the drip irrigation market in 2024 can be attributed to several factors. Firstly, the Northern region encompasses states with significant agricultural activity, such as Punjab, Haryana, Uttar Pradesh, and Rajasthan, which are known for their large-scale cultivation of crops such as wheat, rice, vegetables, and fruits. The region's fertile plains and favorable climatic conditions make it a hub for agricultural production, driving the demand for efficient irrigation solutions like drip irrigation. The Northern region has been proactive in adopting modern agricultural practices and technologies to improve productivity and water efficiency, given the increasing pressure on water resources and the need for sustainable farming methods. Government initiatives and subsidies aimed at promoting drip irrigation adoption, coupled with growing awareness among farmers about the benefits of water-saving techniques, have further fueled the market's growth in the Northern region. Infrastructure development, availability of skilled labor, and access to agricultural inputs and support services have also contributed to the region's dominance in the drip irrigation market, making it a key driver of innovation and growth in the sector.

## Key Market Players

Jain irrigation system Ltd.

Netafim Ltd.

Mahindra EPC Irrigation Ltd.

Eurodrip Irrigation System India Pvt. Ltd.

Ecoflo Irrigation

## Report Scope:

In this report, the India Drip Irrigation Market has been segmented into the following

*India Drip Irrigation Market By Component (Emitters/Drippers, Pressure Pumps, Drip Tubes/Drip Lines, Valves, F...*

categories, in addition to the industry trends which have also been detailed below:

India Drip Irrigation Market, By Component:

Emitters/Drippers

Pressure Pumps

Drip Tubes

Valves

Filters

Fitting & Accessories

India Drip Irrigation Market, By Crop Type:

Cereals & grains

Pulses & Oilseeds

Fruits & Vegetables

Olericulture

India Drip Irrigation Market, By Emitter Type:

Inline

Online

India Drip Irrigation Market, By Application:

Surface

Subsurface

India Drip Irrigation Market, By End User:



Agriculture

Non-Agriculture

India Drip Irrigation Market, By Region:

East

West

North

South

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the India Drip Irrigation Market.

Available Customizations:

India Drip Irrigation Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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