FOOD PROCESSING

Towards Sustainable Growth Opportunities

Sector Profile

Plant-based Proteins

Contents

Preface

The Indian food-processing sector has witnessed remarkable growth, during the last 9 years ending 2023-24, Food Processing Industries sector has been growing at an Average Annual Growth Rate (AAGR) of around 6.55% as compared to around 6.06% in manufacturing at 2011-12 prices. The sector constituted as much as 7.93% share of FPI in manufacturing sector in 2023-2024. The sector is one of the largest employment providers in the organised manufacturing sector with 12.91% employment in the total registered/organised sector. This highlights its competitiveness and capacity to cater to global markets.

India is the world's largest producer of milk, pulses and jute and ranks as the second largest producer of rice, wheat, sugarcane, groundnut, vegetables, fruit and cotton. It is also one of the leading producers of spices, fish, poultry, livestock and plantation crops. This abundant raw material base offers immense potential for value addition and export. Notably, India reported the processed food exports amounted to USD 10.09 billion in 2024-2025 with significant shares in processed vegetables and fruits, pulses, cereal preparations etc. Further, the sector has attracted 7.21 billion FDI inflow in the last one-decade ending 2024-25. Recognizing the sector's significance, Ministry of Food Processing Industries has extended support and incentives for creation of modern infrastructure with efficient supply chain management, creation of employment opportunities, reducing post-harvest losses, increasing the processing level and enhancing export of the processed foods.

In an era marked by climate urgency, health consciousness, and ethical awakening, the global food system stands at a pivotal crossroads. Among the most transformative shifts is the rise of plant-based foods-a movement that transcends dietary preference to embody a broader vision for sustainability, nutrition, and innovation. From ancient grains and indigenous legumes to cutting-edge protein isolates and dairy alternatives, plant-based foods are redefining how we nourish ourselves and our planet. This sector is no longer niche; it is a fast-scaling industry projected to reach USD 44.2 billion globally by 2035, driven by innovation in protein extraction, clean-label formulations, and sustainable sourcing.

As global demand surges and consumer preferences evolve, plant-based foods offer not just a dietary alternative, but a strategic opportunity to reshape food security, public health, and economic resilience. Smart protein (also known as alternative proteins) which includes plant-based, fermentation-derived, and cultivated proteins, is increasingly being recognised by governments worldwide as an important and upcoming source of nutrition. As alternatives to animal-sourced proteins like meat, eggs, dairy, and seafood, smart proteins are environmentally sustainable and notably safer for public health.

India, with its rich agricultural heritage and diverse culinary traditions, is uniquely positioned to lead this revolution. Despite being one of the world’s largest producers of pulses and legumes, India imports nearly 90% of its plant protein isolates, revealing a critical gap in processing infrastructure and value addition. The journey from farm to functional food requires more than raw abundance. It demands investment in research, infrastructure, and market ecosystems that can unlock the full potential of plant-derived nutrition.

1. Introduction

Protein is a crucial macronutrient essential for building and repairing tissues, making enzymes, and boosting immunity. It is fundamental for muscle growth, energy, and overall health. Unlike animal-based proteins, plant-based proteins are often lower in calories and fat and are cholesterol-free. Additionally, they have a lower carbon footprint, making them a sustainable choice for the environmentally conscious.

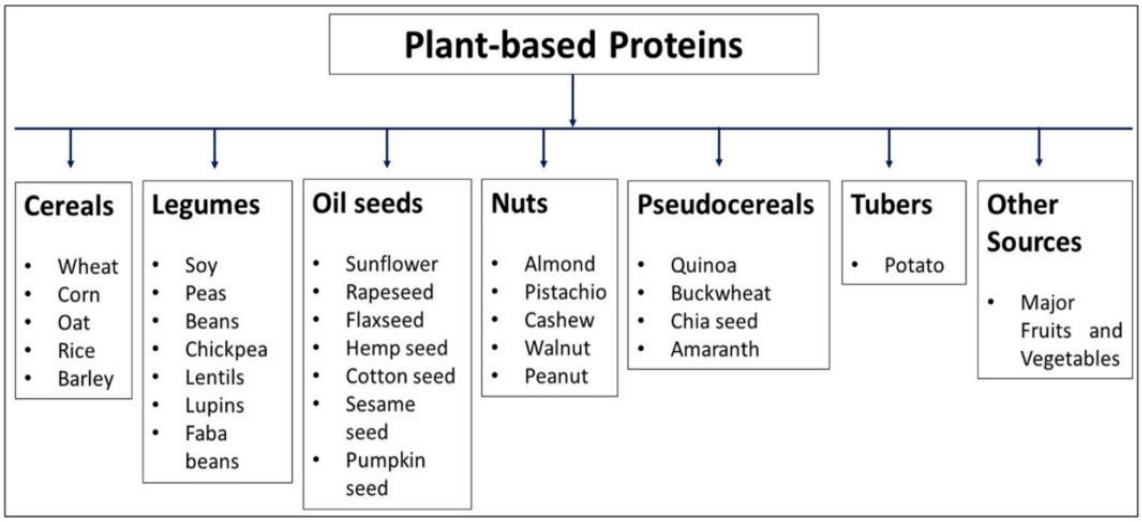
Plant-based protein refers to protein derived from plant sources like legumes, nuts, seeds, whole grains, and soy products. Plant-based proteins are often used as supplements, added to food products, or consumed as part of a balanced diet. Eg., Pea protein, hemp protein, soy protein, rice protein, and lentil protein. The global plant based protein market size reached USD 16.9 Billion in 2024. The market is expected to reach USD 29.9 Billion by 2033, exhibiting a growth rate (CAGR) of 6.55% during 2025-2033.[1]

Historically, many cultures have relied on plants as primary protein sources. In India, pulses, beans, and lentils have been dietary staples for centuries. The Mediterranean diet emphasizes beans, nuts, and seeds, while Asian diets often incorporate tofu and tempeh, made from soybeans.

The rise in popularity of plant-based protein can be attributed to several factors. Health concerns, environmental awareness, ethical considerations, and dietary restrictions have all played a role. Many people are now prioritizing plant-based foods to reduce their risk of chronic diseases, such as heart disease and diabetes. Furthermore, the desire for sustainable food sources has driven more individuals to seek alternatives to animal proteins.

Additionally, advances in food technology have improved the taste and texture of plant-based protein products, making them more appealing. From protein powders that blend smoothly to delicious meat substitutes, the market has evolved to offer a wide variety of options that cater to diverse dietary needs.

Figure 1: Plant-based proteins derived from different crops[2]



[1] https://www.imarcgroup.com/plant-based-protein-market
[2] Frontiers | Sustaining Protein Nutrition Through Plant-Based Foods

Legumes

Pea protein has taken over as the top plant protein in food and beverage products with a plant-based or vegan claim. Soy protein is the second most widely used, and wheat protein follows soy. However, there are a few additions to the list that could become the next generation of plant proteins, including fava bean, flaxseed, lentil, and sunflower protein. Fava bean protein is highly versatile and can be used in various types of meat substitutes, as well as other plant-based products calling for extra protein. Lentil protein may be used in dairy alternative creamers while sunflower protein has been spotted in egg and meat substitutes.

Cereals

The mixture of legumes and cereal helps improve the overall nutritional quality. Millets and its concentrates of protein are a mostly nutritious source of proteins.

Oil Meals/Press Cakes

During oil processing, the by-products, such as oil meals/press cakes, have been released from oil-bearing fruits and seeds. Oil meals contain 15–50% of protein content and are, hence, considered valuable sources for the extraction of proteins. Soybean, cottonseed, peanut, sunflower seed, sesame seed, pumpkin seed, hazelnut, grape seed, walnut, hemp seed, and rapeseed are the major oilseed crops containing a high proportion of protein meal.

Nuts & Seeds

Almonds, cashew and peanut have better protein density. Almonds can fulfil 16.6% and 13.4% of the estimated protein requirement for adult women and men respectively.

- Peanut, being rich in protein obtained the name ‘poor man’s meat’ because of its affordable price.
- The protein of hemp seeds is considered ‘perfect protein’ as it contains all 20 amino acids along with nine essential amino acids.
- One hundred grams of pumpkin seeds fulfil the 54% of the protein RDA.
- The amino acid distribution of sunflower proteins is quite commendable which makes it a balanced protein source.

Pseudocereals

Pseudocereals like amaranth and quinoa are gluten free and contain high-quality protein, unsaturated fatty acids, fibres, vitamins, and minerals. Pseudocereals such as quinoa, amaranth, buckwheat and chia stand out because their seeds contain roughly 13 – 23 % protein by dry weight which is two-to-three times the concentration found in polished rice or maize and the proteins are unusually well-balanced in essential amino acids. Quinoa and amaranth deliver complete amino-acid profiles with ample lysine and tryptophan that conventional cereals lack, while buckwheat is notably rich in lysine and arginine, and chia supplies a digestible globulin-albumin fraction that retains good functionality even after processing. This chemical complementarity means that adding modest amounts of pseudocereals to staple cereal or legume dishes can raise the overall Protein Digestibility-Corrected Amino Acid Score (PDCAAS) of the meal, an advantage for vegetarian and gluten-free diets as well as for school-meal and food-aid formulations. Since these crops are gluten-free, drought-tolerant and thrive on marginal soils, they also offer a climate-resilient path to diversify protein sources while reducing dependence on animal products.

Tubers

Tuber crops such as potatoes, sweet potatoes, yams and cassava are not "protein-dense" in the way legumes are, yet they still make a strategic contribution to human protein nutrition for three reasons. First is quantity because tubers are eaten in large masses, they can add 5-10 g high-quality protein to daily diets in many regions. Second is quality, the storage protein of potato (patatin) is unusually complete since it supplies about 37 % essential amino acids with leucine at 8.3 % of total protein, this is considerably higher than eggs. Third is accessibility & sustainability as tubers yield edible protein with minimal inputs. Potatoes, for instance, produce more utilizable protein per unit water than most cereals and thrive on marginal soils. Processing side-streams (potato fruit-water, sweet-potato peels) can be up-cycled into protein isolates for gluten-free bakery or sports-nutrition blends, further broadening plant-based options.

Other sources

Typical green vegetables supply 2 – 3 g protein per 100 g fresh weight and starchy or immature-seed vegetables edge higher as whole green peas deliver 5 % protein (5 g per 100 g), nearly trebling the density found in polished rice and bringing substantial lysine and threonine to cereal-based diets. Qualitatively, vegetable proteins are relatively rich in the indispensable amino-acids lysine, arginine and threonine, thereby compensating for the lysine deficit in most cereal grains and improving the meal-level PDCAAS or DIAAS when consumed together. Their cell-wall fibre matrix also slows gastric transit, enhancing nitrogen retention compared with equal gram amounts delivered from refined starch staples.

Nutritional requirements of a plant-based diet

Key nutrients to pay attention to in a plant-based diet include protein, iron, calcium, vitamin B12, vitamin D, omega-3 fatty acids, and iodine. Additionally, a plant-based diet should be high in fibre, antioxidants, and other beneficial phytochemicals[3].

The protein content of plant-based food products, like legumes (20%–38%), cereals (6%–15%), pseudocereals (11%–23%), nuts (18%–38%) and seeds (9%–30%) is considerably higher than that of milk (3%–5%) while approximately similar to meat (average 23%).

Plant-based protein alternatives such as plant-based meat, seafood, and eggs are gaining traction as consumers seek out alternatives to traditional/animal protein. As a result, demand for plant-based meat has surged exponentially. The food manufacturers have developed various plant-based meat products using a range of plant-derived proteins, including soy, wheat, pea protein, mycoprotein, and potato.

Plant Based Market Overview:

Market Segmentation – Product Type:

1. By Type: Isolates, Concentrates, Textured
2. By Source: Soy, Wheat, Pea, Other Sources
3. By Form: Dry, Liquid
4. By Application: Feed, Food, Other Applications

[3] Nutritional Update for Physicians: Plant-Based Diets - PMC

Subsegments:

5. By Isolates: Soy Protein Isolate, Pea Protein Isolate, Rice Protein Isolate, Wheat Protein Isolate
6. By Concentrates: Soy Protein Concentrate, Pea Protein Concentrate, Rice Protein Concentrate, Hemp Protein Concentrate
7. By Textured: Textured Soy Protein (TSP), Textured Pea Protein, Textured Wheat Protein, Textured Rice Protein

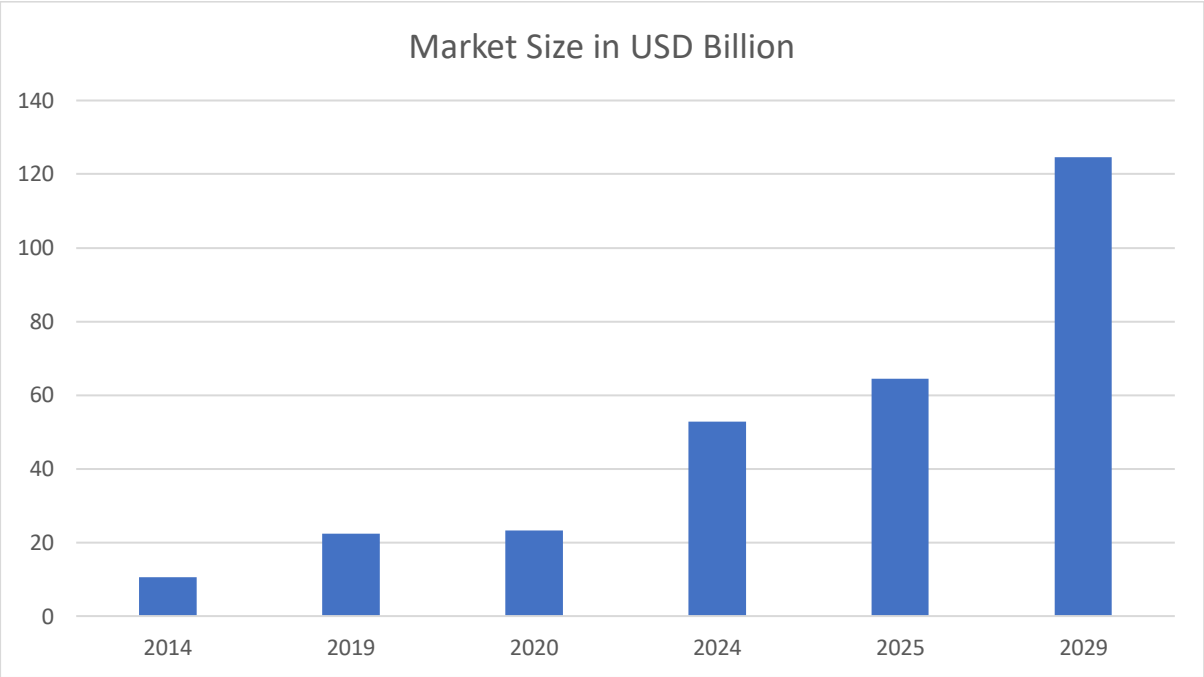
Furthermore, Plant-Based Dairy Derivatives consist of Plant-Based Ice Cream & Frozen Desserts, Plant-Based Cheese, Plant-Based Yoghurt, Plant-Based Creamer, Plant-Based Diary Spreads & Dips, etc. Plant-Based Beverages encompass Soy milk, Almond milk, Packaged Smoothies etc. Plant-Based Meat Substitutes consist of soy-based meat alternatives such as Tofu, tempeh, kebabs, chaaps, and textured vegetable protein; Pea protein-based products: Burgers, sausages, etc; Other Legume-based products include products made using lentils and black beans; Mushroom-based products: Mushroom burgers and sausages; Jackfruit-based products: Burgers, biriyanis, and tacos; Mycoprotein, Seitan, and other meat Substitutes; Plant-Based Nutrition/Snack Bars: Moringa bars, Millet Nutri bars, Peanut bars, etc; Plant-Based Bakery Products: Plant based Breads, Vegan Cakes, Muffins, Cookies, Pastries, Brownies, etc; Plant-Based Seafood: Plant based Tuna, Shrimp, Salmon, Crab Cakes, Fish Fillets where Pea protein, soy protein, chickpea flour, wheat protein, plant starches, seaweed for flavour are main ingredients.

2. Global Trends in Plant based Proteins

Plant-based foods could potentially provide optimal food substitute solutions for the global food system. Currently, the global plant-based food market is concentrated in North America, Europe, Asia-Pacific, Latin America, and the Middle East and Africa[4].

The plant-based protein market size has grown exponentially in recent years. It was expected to grow from USD 52.08 billion in 2024 to USD 64.38 billion in 2025 at a compound annual growth rate (CAGR) of 23.6%. The growth in the historic period can be attributed to increased health and wellness awareness, rise in concerns about environmental sustainability, growth in preference for vegetarian and vegan diets, expansion of plant-based food and beverage industry, demand for allergen-free and non-GMO protein sources.

Figure 2: Global market trend of Plant based Proteins (2014 to 2029)



The plant-based protein market size is expected to see rapid growth in the next few years. It will grow to USD 124.55 billion in 2029 at a compound annual growth rate (CAGR) of 17.9%.

Regional Market Outlook[5,6]

United States leads the global plant-based proteins industry with the market projected to grow at a CAGR of 5.3% between 2024-34.

European Union countries, particularly Germany, France, and the Netherlands, are at the forefront of plant-based adoption. The market is experiencing rapid growth, with CAGR of 6.9% from 2024-2034.

[4] Plant Based Protein Market – Global Market – Industry Trends and Forecast to 2031 | Data Bridge Market Research
[5] Plant-Based Food Market 2024 - Statistics and Share
[6] Plant-Based Food Market Growth & Trends 2025 to 2035

Asia pacific: The prospects for plant-based products are higher in countries such as China and India. India is becoming a key exporter of plant-based proteins, with growing interest from global importers due to its rich agricultural base and innovation in sustainable food products. The estimated growth rate (CAGR) of India is 9.4% through 2034.

Globally, the overall sector growth can be attributed to continued health and wellness trend, climate change awareness, expansion of vegan and flexitarian populations, investments and expansion by food companies, government initiatives and regulations. Major trends in the forecast period include introduction of plant-based eggs and dairy alternatives, focus on nutrient-dense plant-based snacks, market expansion in retail and E-Commerce, globalization of plant-based cuisine, sustainable packaging solutions.

List of Top Plant-Based Food Companies in the world[7]

- The Archer Daniels Midland Company (U.S.)
- Beyond Meat, Inc.
- Nestlé S.A.
- The Hain Celestial Group, Inc
- Glanbia plc (Ireland)
- Cargill (U.S.)
- Danone S.A. (France)
- DowDuPont (U.S.)/ DuPont Nutrition & Biosciences
- Kerry Group (Ireland)
- Amway (Nutrilite)'s protein powder
- Ingredion (U.S.)
- Tate & Lyle (UK)
- Royal DSM (Netherlands)
- Parmalat (Lactalis) (Italy/France)
- Axiom Foods Inc.
- Roquette Freres SA
- Wilmar International Ltd.
- Emsland Group
- Australian Plant Proteins Pty Ltd.
- Impossible Foods Inc.
- Herbal life's protein shake
- Puris Proteins LLC.

2.1 Global Consumption

The global demand for protein is rising with the growing population and income levels. The move to alternatives of protein is taking place globally.

Categories of plant-based consumers[8]

- **Flexitarians:** They follow a predominantly plant-based diet but occasionally consume animal products.
- **Whole food plant-based:** Their diet primarily consists of whole, unrefined, or minimally processed foods.
- **Curious non-vegans:** Individuals who are not following a vegan diet but are interested in learning more about it and exploring the potential benefits of incorporating more plant-based foods into their diet.
- **Vegans:** They do not consume or use animal in any form and depend on Plant based foods.

During the period 2019 to 2023, the sales grew at a CAGR of 7.9%, and it is predicted to continue to grow at a CAGR of 8.6% during the forecast period of 2024 to 2034. USA and

[7] Plant-Based Protein Market Report 2025, Share Analysis, Forecast
[8] Frontiers | Sustaining Protein Nutrition Through Plant-Based Foods

Germany are set to exhibit high consumption, recording CAGRs of 5.3% and 6.9%, respectively, through 2034.

2.2 Global Trade Scenario[9]

The plant-based protein market consists of sales of wheat protein, soy protein, pea protein, and other plant-based proteins.

Table 1: Global trade of plant-based proteins for 2023-24

HS Code	Product	Global Level Export (USD Billion)
1106	Flour, meal and powder of peas, beans, lentils, and other dried leguminous vegetables	0.95
1109	Wheat gluten, whether or not dried	1.67
120190	Soya beans, whether or not broken (excl. seed for sowing)	79.67
120242	Groundnuts, shelled, whether or not broken (excl. seed for sowing, roasted or otherwise cooked)	3.87
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard	1.76
210610	Protein concentrates and textured protein substances	3.05
0802	Other nuts, fresh or dried, whether or not shelled or peeled	20.30
0713	Dried leguminous vegetables, shelled, whether or not skinned or split	18.33
200811	Groundnuts, prepared or preserved (excl. preserved with sugar)	2.51
350400	Peptones and their derivatives; other protein substances and their derivatives, n.e.s., (Isolated Soya protein)	4.80

Table 2: Top countries and export value for plant-based proteins for 2023-24

Value: In USD billion

HS Code	Product	Top country	Export value (USD Billion)
1106	Flour, meal and powder of peas, beans, lentils, and other dried leguminous vegetables	1. India 2. Spain 3. Turkiye	0.17 0.09 0.06
1109	Wheat gluten, whether or not dried	1. China 2. Belgium 3. Germany	0.32 0.26 0.23
120190	Soya beans, whether or not broken	1. Brazil 2. USA 3. Paraguay	42.94 24.57 3.17
120242	Groundnuts, shelled, whether or not	1. Argentina	0.88

[9] www.trademap.org

	broken (excl. seed for sowing, roasted or otherwise cooked)	2. India 3. USA	0.83 0.39
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard	1. USA 2. Italy 3. Bolivia	1.32 0.13 0.04
210610	Protein concentrates and textured protein substances	1. USA 2. China 3. Netherlands	0.78 0.38 0.31
0802	Other nuts, fresh or dried, whether or not shelled or peeled	1. USA 2. Turkiye 3. China	9.07 2.25 1.24
0713	Dried leguminous vegetables, shelled, whether or not skinned or split	1. Canada 2. Australia 3. Myanmar	3.40 2.45 1.79
200811	Groundnuts, prepared or preserved (excl. preserved with sugar)	1. China 2. Netherlands 3. USA	0.70 0.37 0.25
350400	Peptones and their derivatives; other protein substances and their derivatives, n.e.s., (Incl. Isolated Soya protein)	1. China 2. USA 3. Denmark	0.77 0.65 0.45

Global Export Trends for Plant based Proteins[10]

- The **United States** tops the list with products exported to Europe, Asia, and Latin America. **Germany** and the **Netherlands** follow closely, known for clean-label and organic products, with strong intra-EU trade and innovation hubs like 'The Vegetarian Butcher'.
- **Canada** excels in pea protein exports, supported by government initiatives, while **China** expands soy-based offerings to Southeast Asia and the Middle East.
- **India** is emerging as a key player with cost-effective jackfruit, soy, and millet-based products targeting markets in the UAE, Europe, and North America.
- **Australia** rounds out the list with oat milk and plant-based meats, exporting primarily to Asia-Pacific and the Middle East. These nations are shaping the future of food through sustainability and innovation.

[10] Trade Statistics by Country | WITS

Global Export Value

In 2024, the global export value of plant-based proteins was USD 52.1 billion, with projections indicating it will reach around USD 259.1 billion by 2034, growing at a CAGR of 17.40%. This growth is driven by increasing demand for dairy and meat alternatives, particularly in regions like Europe, which holds the largest market share at 46%. The market includes a wide range of products such as soy, pea, and oat-based foods, with meat substitutes leading the category at nearly 48% of the market share.

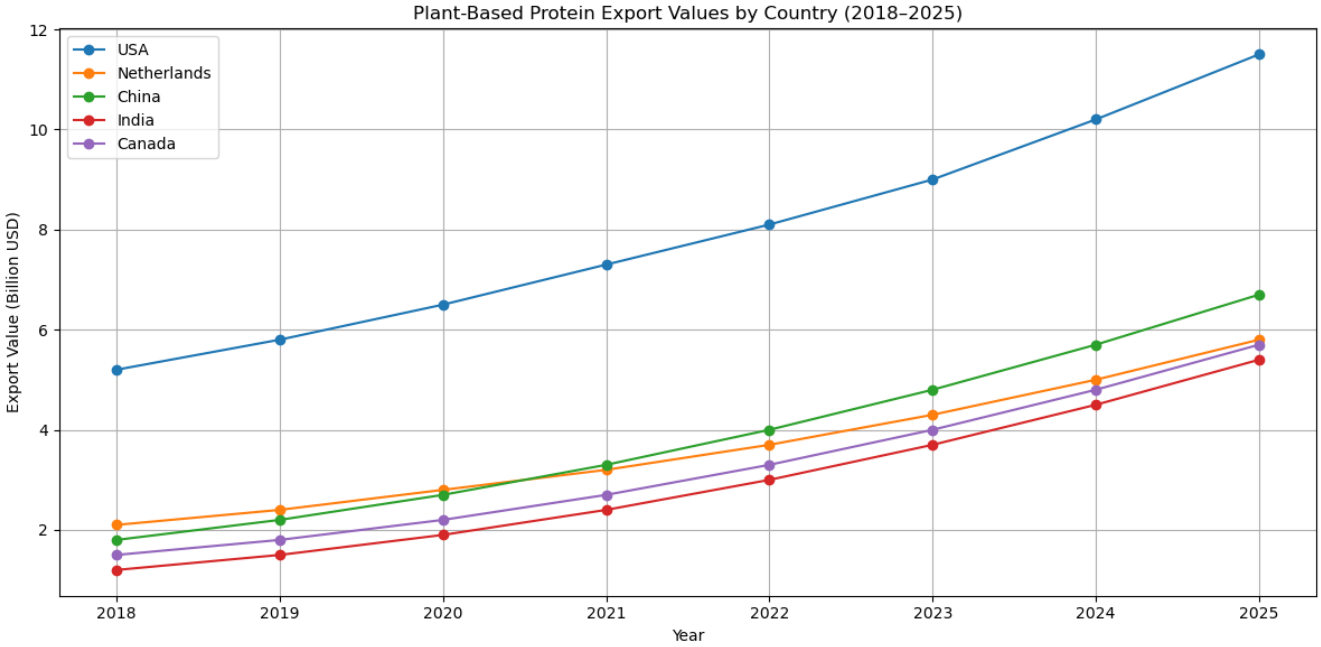


Table 3: Leading Exporting Countries & Specialties

Country	Key Exported Products
United States	Plant-based meat, Dairy alternatives, Protein isolates
Netherlands	Vegan cheese, Meat substitutes, Protein ingredients
Canada	Pea protein, Oat milk, Functional foods
Germany	Ready-to-eat vegan meals, Soy-based products
China	Soy protein, Jackfruit-based foods, Tofu products

High-Demand Export Categories

- Meat alternatives (Soy, Pea, Jackfruit-based)
- Dairy substitutes (Almond, Oat, Coconut milk)
- Protein isolates for functional foods and beverages
- Vegan snacks and ready meals

Global Import Trends for Plant based proteins

The global import demand for plant-based proteins is rising sharply, reflecting a broader shift toward sustainable and health-conscious consumption. Imports are a major component of this

growth, especially in regions like Europe, North America, and Southeast Asia, where demand outpaces local production.

Table 4: Global trade of plant-based proteins for 2023-24

HS Code	Product	Global Level Import (USD Billion)
1106	Flour, meal and powder of peas, beans, lentils, and other dried leguminous vegetables	0.73
1109	Wheat gluten, whether or not dried	1.74
120190	Soya beans, whether or not broken (excl. seed for sowing)	85.91
120242	Groundnuts, shelled, whether or not broken (excl. seed for sowing, roasted or otherwise cooked)	4.91
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard	0.97
210610	Protein concentrates and textured protein substances	2.91
0802	Other nuts, fresh or dried, whether or not shelled or peeled	19.64
0713	Dried leguminous vegetables, shelled, whether or not skinned or split	18.65
200811	Groundnuts, prepared or preserved (excl. preserved with sugar)	2.16
350400	Peptones and their derivatives; other protein substances and their derivatives, n.e.s., (Isolated Soya protein)	4.77

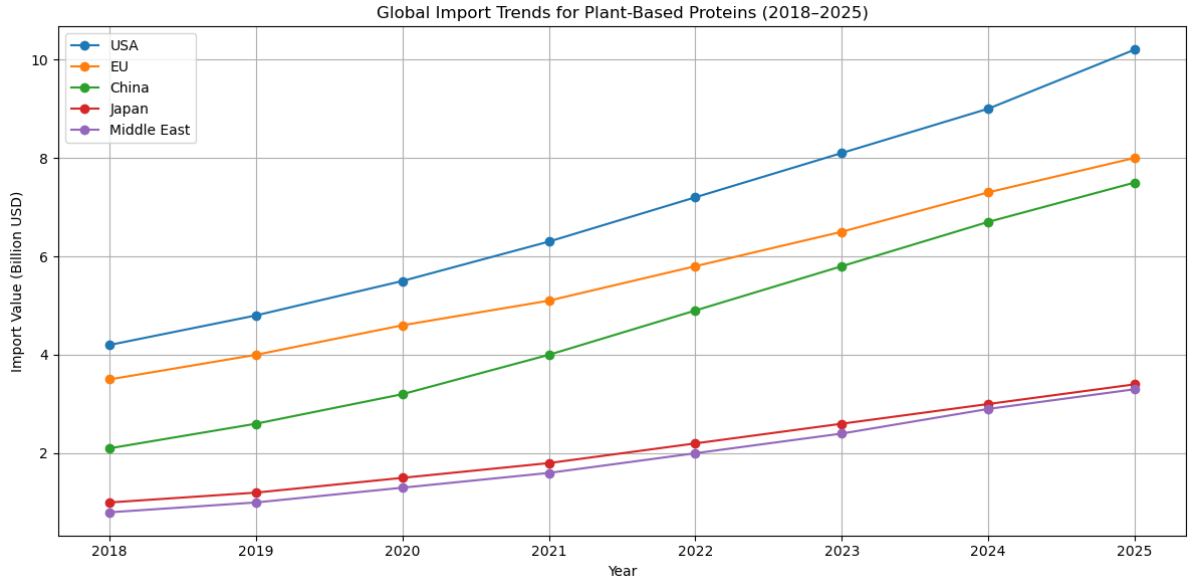
Table 5: Top countries and import value for plant-based proteins for 2023-24

HS Code	Product	Top country	Import value (USD Billion)
1106	Flour, meal and powder of peas, beans, lentils, and other dried leguminous vegetables	1. USA 2. Germany 3. France	0.09 0.06 0.05
1109	Wheat gluten, whether or not dried	1. USA 2. Norway 3. Netherlands	0.36 0.36 0.10
120190	Soya beans, whether or not broken	1. China 2. Argentina 3. Egypt	52.82 3.22 1.98
120242	Groundnuts, shelled, whether or not broken (excl. seed for sowing, roasted or otherwise cooked)	1. China 2. Netherlands 3. Indonesia	0.64 0.62 0.41
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard	1. Vietnam 2. Dominican Republic	0.19 0.15 0.11

		3. Canada	
210610	Protein concentrates and textured protein substances	1. Canada 2. Germany 3. Netherlands	0.19 0.17 0.16
0802	Other nuts, fresh or dried, whether or not shelled or peeled	1. China 2. Germany 3. India	2.13 2.09 1.62
0713	Dried leguminous vegetables, shelled, whether or not skinned or split	1. India 2. China 3. Turkey	5.14 1.27 0.99
200811	Groundnuts, prepared or preserved (excl. preserved with sugar)	1. France 2. USA 3. Germany	0.17 0.16 0.15
350400	Peptones and their derivatives; other protein substances and their derivatives, n.e.s., (Incl. Isolated Soya protein)	1. USA 2. Netherlands 3. Germany	0.76 0.51 0.43

Key Importing Regions

- **European Union:** Leading importer of plant-based dairy and meat alternatives, driven by sustainability policies and consumer demand.
- **United States**: Imports specialty ingredients like pea protein and jackfruit from Asia and Canada.
- **China & Southeast Asia**: Increasing imports of processed plant-based foods and protein isolates to meet urban demand.



High-Demand Categories

- Meat substitutes (Soy, Pea, Jackfruit-based)
- Dairy alternatives (Almond, Oat, Coconut milk)
- Protein isolates and concentrates for functional foods and beverages

Table 6: Leading importing countries & specialties

Country/Region	Key Imports
United States	Plant-based meat, dairy alternatives, protein isolates
Germany	Vegan meats, oat milk, soy-based products
United Kingdom	Ready-to-eat vegan meals, dairy-free beverages
Netherlands	Protein ingredients, meat substitutes
Canada	Pea protein, plant-based snacks
France	Vegan cheese, plant-based desserts
China	Protein isolates, soy-based beverages
Australia	Dairy alternatives, vegan frozen foods
Japan	Soy-based products, plant-based drinks
South Korea	Vegan ramen, meat alternatives

2.3 Industry Developments[11, 12]

The plant-based foods sector is undergoing rapid transformation globally, driven by innovation, investment, and shifting consumer preferences. Here are some of the most notable industry developments.

- Startups are experimenting with jackfruit, millets, pulses, and seaweed as sustainable protein sources.
- Reinvention of traditional recipes - Classic dishes are being reimagined with plant-based ingredients.
- Clean-label and allergen-free formulations are gaining traction, especially among Gen Z and millennial consumers.
- Companies are moving beyond soy and pea to explore chickpea, fava bean, mung bean, and algae. This is expected to enhance taste, texture, and nutritional profiles, offering more variety to consumers.
- Seaweed and sea vegetables are gaining traction due to their rich nutrient content and sustainable cultivation. These are being used in snacks, meat alternatives, and functional foods.
- Ingredients like chicory root fibre and pea protein isolate are being used to boost gut health, protein content, and reduce sugar/fat in formulations. Consumers are seeking foods that support immune function, digestion, and overall wellness.
- There's a strong push for natural, minimally processed ingredients with clear sourcing and production practices. Brands are emphasizing traceability and ethical sourcing to build consumer trust.
- Biodegradable, compostable, and even edible packaging that reduce environmental impact.
- Local-Global Food System Integration - local sourcing with global flavour inspiration.

[11] 2025 Plant-Based Trends to Watch: Predictions from Global Industry Leaders
[12] Embracing Plant-Based Innovation: Trends Shaping the Future of Food in 2025

3. Overview of the Plant based proteins Market in India

India, with its rich heritage of plant-based cuisine, cost-efficient production capabilities, distinctive ingredients, and growing industry investments, is well-positioned to expand its footprint in the global plant-based food market.

Experts believe that India's alternative protein start-ups have immense potential, and the country is well-positioned to become a global hub for smart protein innovation, driven by its growing economy, high-protein crop production, and cost advantages. India can establish protein isolate production units, reduce imports, and potentially export to other countries, driven by lower manufacturing costs, affordable labour, and government incentives.

India offers potential for expansion due to its diverse crop yield, advanced food and beverage industry, research institutes, notable R&D achievements, and growing private equity sector. Numerous SMEs and FMCGs have already entered India's plant-based food sector, offering plant-based alternatives to meat, poultry, seafood, dairy. The expansion of the plant-based foods business provides farmers with an enormous opportunity to enhance their income while tackling food poverty, climate change challenges, hunger, and public health threats.

3.1 Market Overview[13]

India is a booming market for plant-based foods. The plant-based food industry is expected to experience growth in India due to the increasing urbanization and wealth in the country. Studies have shown that the younger generation of Indians is relatively more open to experimenting with plant-based foods and meat alternatives and increasing availability of these products in the market is expected to make them more accessible.

Lentil, chickpea, and pea-derived proteins are among the most popular choices in fortified foods such as snacks, dairy alternatives, and beverages. The rising demand for vegan snacks and confectionaries is fuelling the expansion of India's vegan business. India is positioning itself as a plant-protein export hub, with growing interest from Europe and Southeast Asia. [14]

- Venture capital and private equity firms are increasingly backing Indian plant-based startups, seeing long-term potential in both domestic and global markets.
- The Plant-based Foods Industry Association (PBFIA) is proactively advocating for clearer regulations, financial support through subsidies, and enhanced export incentives to strengthen the sector's global competitiveness.

India's plant-based foods trade balance reflects a unique paradox: while the country is a global leader in pulse production, it remains import-dependent for high-value plant protein ingredients. Here's a breakdown of the current scenario:

[13] India plant-based protein market Size and Growth, expertmarketresearch.com

[14] India Plant-based Protein Market (2025-2031, 6wresearch.com

Imports

- Key imports include Soy protein isolates and concentrates, Pea protein, Gluten and vegetable protein blends.
- India imports nearly 90% of its plant protein isolates, mainly due to limited domestic extraction and processing capacity.

India's challenge and opportunity is to scale domestic processing and move up the value chain from raw exports to branded, high-margin plant-based products.

Table 7: India Level imports of plant-based proteins for 2024

HS Code	Product	India level Import (in USD thousands)	India's share in global import (%)
120190	Soya beans, whether or not broken (excl. seed for sowing)	1. Niger 2. Togo 3. Benin	0.12 0.12 0.05
080212	Fresh or dried almonds, shelled	1. USA 2. Iran 3. Australia	1.07 0.10 0.99
1109	Wheat gluten, whether or not dried	1. China 2. France 3. Latvia	0.016 0.00069 0.00068
071310	Dried, shelled peas "Pisum sativum", whether or not skinned or split	1. Canada 2. Russian Federation 3. Turkey	0.69 0.42 0.11

Table 8 : Top Indian imports

HS Code	Product	Top Countries	Import Value in USD Billion
120190	Soya beans, whether or not broken (excl. seed for sowing)	349,001	0.39
080212	Fresh or dried almonds, shelled	85,176	1.68
1109	Wheat gluten, whether or not dried	19,356	1.09
071310	Dried, shelled peas "Pisum sativum", whether or not skinned or split	1,383,685	39.79

Exports

- India exports raw pulses, jackfruit, millets, and processed vegan snacks, but the value-added plant-based food exports are still in early stages.
- Export data is fragmented, as plant-based foods are often clubbed under broader agri or processed food categories.

Table 9: India Level exports of plant-based proteins for 2023-24

HS Code	Product	India level export (in USD thousands)	India's share in global export (%)
1201	Soya beans, whether or not broken	4,474	0.005
080212	Fresh or dried almonds, shelled	1,846	0.033
1001	Wheat gluten, whether or not dried	1,115	0.066
07310	Dried, shelled peas "Pisum sativum", whether or not skinned or split	23,294	0.736

Table 10 : Top countries for Indian exports

HS Code	Product	Top Countries	Exports Value in USD Billion
120190	Soya beans, whether or not broken (excl. seed for sowing)	1. Nepal 2. UAE 3. Thailand	0.002 0.0009 0.0002
080212	Fresh or dried almonds, shelled	1. Sri Lanka 2. Nepal 3. Bhutan	0.0004 0.0003 0.0001
1109	Wheat gluten, whether or not dried	1. Sri Lanka 2. Saudi Arabia 3. Canada	0.0006 0.0002 0.00008
071310	Dried, shelled peas "Pisum sativum", whether or not skinned or split	1. Bangladesh 2. UAE 3. USA	0.013 0.005 0.0008

Table 11: Key Export Drivers for India

Protein Type	Export Strength	Top Destinations
Soy Protein	Widely available, cost-effective	UAE, Bangladesh, UK
Pea Protein	Clean-label, allergen-free	USA, Germany, Australia
Chickpea Protein	Traditional crop, high demand in snacks	Middle East, EU
Rice Protein	Hypoallergenic, used in baby food	Japan, South Korea, EU

Top imported pulses by India (2024–25)[15]

- Yellow Peas – 2.166 million metric tonnes (MMT)
- Desi Chickpeas (Chana) – 1.506 MMT
- Pigeon Peas (Tur) – 1.223 MMT
- Lentils (Masur) – 1.219 MMT
- Black Matpe (Urad) – 820 thousand metric tonnes (KMT)

Main reasons for the import were decline in domestic production, favorable import policies and rising demand for pulses across sectors.

[15] India pulses import in 2024/25

Table 12: India's production level of plant-based proteins

Commodity	Total production (2024-25, MT)	Percentage of global production
Soy	12.58 million	3%
Almond	4,150	0.25%
Wheat	113.29 million	14%
Peas	0.7 million	4.78%

3.3 Key Growth Drivers

India can play a significant role on a global stage by growing and processing plant-based products. It is one of the top five nations in the world for producing chickpeas, lentils, millet, peas, rice, soybeans, and wheat is India. The nation's market for plant-based foods has a substantial opportunity for expansion. Consumer demand is high, private sector businesses are entering the market quickly, and the agricultural sector's strength offers a solid platform for expansion.

Furthermore, given India's diverse crop output, advanced F&B sector, research institutes, significant R&D successes, and expanding private equity sector, there is an opportunity for growth. A few are listed below.

- Rising Vegan or Vegetarian Population
- Increasing Health Awareness
- Rising Incidences of Obesity
- Growing Demand for Food & Beverage Industry
- Environmental sustainability
- Demographics
- Rising Disposable Incomes

Plant-Based Protein Market Key Opportunities

Innovation in product development: For creating more appealing and innovative plant-based protein products. Innovation in products for improving taste, and texture is expected to create significant opportunities for the market growth.

Focus on aquatic plants as new and emerging sources of protein: With the increasing global population and rising demand for protein lead to focus on new and sustainable sources of protein. Many health-conscious people are increasingly seeking for personalized nutrition there is growing interest in harnessing aquatic plants as a source of proteins.

Growing demand for alternative proteins: The plant-based protein industry is highly competitive due to recent rapid growth. Owing to this competition, major players can invest in research and development to introduce innovative and new products.

3.4 Key Players

Table 13: Organised and Unorganised Sector Players

Organized Sector: These companies operate with formal structures, standardized processes, and wide retail or digital distribution. They often have regulatory compliance, branding, and scalability.
GoodDot
Blue Tribe Foods
Imagine Meats
Wakao Foods
One Good (formerly Goodmylk)
Alt Co. (Whitelotus Foods Labs Pvt Ltd.)
RAW Pressery (Wingreens Farms Pvt. Ltd.)
So Good (Life Health Foods
Rebel Foods & EatClub
Dabur India Ltd.
Drums Foods International Pvt. Ltd.
Dancing Cow Foods Pvt. Ltd.
Amway (Nutrilite)
Herbal Life
Unorganized Sector: This includes local vendors, small-scale producers, home-based businesses, and informal food outlets. They often lack formal branding, operate regionally, and may not follow standardized processes.
Local vegan cafes and tiffin services
Small-scale manufacturers
Farmers and cooperatives
Home chefs and micro-entrepreneurs

As more consumers seek out plant-based products that support their health and wellbeing, the market is poised to continue expanding in the coming years. The rise of plant-based foods is not just a passing trend, but a fundamental shift in the way we think about food, health, and the environment.

Table 14: Key Products

Oat and Cashew Milk	Vegan Milk Chocolates
Vegan Butter	Smoothies
Peanut Curd	plant-based gelato
Proteiz (Protein-rich foods)	Ready-to-cook mixes using millets, legumes, and seeds
Jackfruit Burger Patties	Vegan Keema
BBQ Jackfruit	Vegicken (Plant-Based Chicken)
Tofu, Seitan, Quorn	Sausages
Mushroom-Based Products	Plant-based kebabs and biriyanis
Millet-Based Snacks	Plant-Based Chicken Nuggets

4. Unlocking Potential in the Plant based Proteins sector in India

Despite challenges like limited consumer awareness and acceptance, experts believe India's alternative protein start-ups have immense potential, and the country is well-positioned to become a global hub for smart protein innovation, driven by its growing economy, high-protein crop production, and cost advantages.

The country can establish protein isolate production units, reduce imports, and potentially export to other countries, driven by lower manufacturing costs, affordable labour, and government incentives. Plant proteins require processing to match the texture and taste of animal-based proteins. To succeed, India needs innovation in two key areas: efficient protein extraction and developing animal-based alternatives using clean, sustainable, and cost-effective technologies. Industry partnerships with innovators are crucial to drive large-scale growth.

Key products with high potential in the Plant based proteins Sector

Here is the list of high-potential product categories in India's plant-based foods sector, based on market trends, consumer demand, and export potential:

1. **Plant-Based Dairy Alternatives:** India's plant-based dairy segment featuring almond, oat, soy, coconut, and millet-based milk, along with vegan yogurt, cheese, and ice cream is witnessing rapid growth.
2. **Ready-to-Eat (RTE) Vegan Meals:** Plant-based Indian ready meals such as jackfruit biryani, vegan curries, millet khichdi, and plant-based thalis are emerging as a vibrant category that blends convenience with traditional Flavors.
3. **Meat Alternatives:** Plant-based meats like jackfruit-based alternatives, soy and pea protein nuggets, kebabs, and burger patties are gaining traction amid rising flexitarianism and ethical eating trends. India's robust jackfruit and soy supply chain gives it a unique edge in this space.
4. **Functional Beverages:** Plant-based beverages such as protein shakes, turmeric lattes, moringa teas, and vegan smoothies are rapidly gaining popularity as consumers prioritize immunity-boosting, clean-label options.
5. **Vegan Snacks & Confectionery:** Vegan snacks like millet chips, chickpea puffs, dairy-free chocolates, and protein bars are gaining popularity as snacking becomes a daily habit, and plant-based options expand on retail shelves.
6. **Protein Isolates & Ingredients:** With rising demand for pea, soy, chickpea, and rice protein isolates in functional foods, sports nutrition, and alternative proteins, there's a strategic opportunity to invest in domestic extraction infrastructure. This could enable import substitution and unlock new B2B export avenues, positioning India as a global hub for value-added plant proteins.
7. **Dairy-Free Cheese & Spreads:** The growing demand for gourmet and foodservice offerings in urban markets is paving the way for products like cashew cheese, almond-based spreads, and vegan butter.

5. Government Interventions

5.1 Government Schemes

The Government of India has taken up various initiatives to boost food processing sector including Plant based foods/proteins sector in India.

5.1.1 Pradhan Mantri Kisan Sampada Yojana (PMKSY)[16]

Ministry has been implementing Central Sector Umbrella Scheme –Pradhan Mantri Kisan Sampada Yojana (PMKSY) since May 2017 across the country including NER with an allocation of Rs. 6,000 Crores for the period 2016-20 co terminus with the 14th Finance Commission Cycle. A new scheme "Operation Greens" was introduced in PMKSY in November 2018 for integrated development of value/supply chain of tomato, onion and potato (TOP) crops in selected States on pilot basis with an outlay of Rs. 500 Crores, which was subsequently extended to all notified crops and later to 22 perishables. Continuation of restructured PMKSY during 15th Finance Commission cycle i.e., till 31.03.2026 has been approved with an allocation of Rs. 5,520 crores with following component schemes.

- Integrated Cold Chain and Value Addition Infrastructure
- Creation/ Expansion of Food Processing and Preservation Capacities (Unit Scheme)
- Infrastructure for Agro-processing Clusters
- Food Safety and Quality assurance Infrastructure
- Human Resources and Institutions - Research & Development

The component schemes of Mega Food Park, Creation of Backward & Forward Linkages, Human Resource & Institution - Promotional Activities, Skill Development & HACCP, a component of Food Safety and Quality Assurance Infrastructure have been discontinued in the 15th FC cycle with the provision of committed liability.
Under constituent component schemes of PMKSY, the MoFPI provides mostly credit linked financial assistance (capital subsidy) in the form of grants-in-aid to the individuals, farmers, Farmer Producer Organizations (FPOs), Entrepreneurs, Cooperatives, Societies, Self Help Groups (SHGs), Private Companies and Central/State PSUs etc. for setting up of food processing/preservation industries. Financial assistance to the eligible applicant is provided as per the Scheme guidelines and against the Expression of Interest issued by the Ministry from time to time to enable them to set up various food processing/preservation projects.

5.1.2 Pradhan Mantri Formalization of Micro Food Processing Enterprises (PMFME) Scheme

MoFPI is implementing a centrally sponsored "Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) Scheme" under Aatma Nirbhar Bharat Abhiyaan initiative for providing financial, technical and business support for upgradation of micro food processing enterprises in the country. The scheme is operational from 2020-21 to 2025-26 with an outlay of Rs 10,000 Crore. Two lakh micro food processing units will be directly assisted with credit linked subsidy, capacity building and marketing and branding support.

[16] https://sampada-mofpi.gov.in/

The objectives of the scheme are as under:

- Increased access to credit by existing micro food processing entrepreneurs, FPOs, Self Help Groups and Co-operatives.
- Integration with organized supply chain by strengthening branding & marketing.
- Support for transition of existing 2,00,000 enterprises into formal framework.
- Increased access to common services like common processing facility, laboratories, storage, packaging, marketing and incubation services.
- Strengthening of institutions, research and training in the food processing sector; and
- Increased access for the enterprises, to professional and technical support.

The scheme aims to:

i. Enhance the competitiveness of existing individual micro-enterprises in the unorganized segment of the food processing industry and promote formalization of the sector, and
ii. Support Farmer Producer Organizations (FPOs), Self Help Groups (SHGs) and Producers Cooperatives along their entire value chain.

One District One Product

PMFME Scheme adopts One District One Product (ODOP) approach to reap the benefit of scale in terms of procurement of inputs, availing common services and marketing of products. ODOP scheme provides the framework for value chain development and alignment of support infrastructure. The scheme also envisages strengthening backward and forward linkages, provision of common facilities, incubation centres, training, R&D, marketing & branding. These provisions would primarily be for ODOP products.

5.1.3. Production Linked Incentive Scheme for Food Processing Industry (PLISFPI)

For enhancing India's manufacturing capabilities and improving exports, in November 2020, Government gave approval to introduce the Production-Linked Incentive (PLI) Scheme in 10 key sectors, including food processing sector. The Union Cabinet approved the Production Linked Incentive (PLI) Scheme for the food processing industries on 31.03.2021 with a total outlay of Rs. 10,900 crores to be implemented over six years from 2021-22 to 2026-27.

The food segment identified includes Ready to Cook/ Ready to Eat (RTC/RTE) foods including Millets based products, Processed Fruits & Vegetables, Marine Products and Mozzarella Cheese, and production of Innovative/ Organic products of SMEs including Free Range - Eggs, Poultry Meat, Egg Products. The scheme would also support for branding and marketing abroad to incentivise emergence of strong Indian brands for in-store Branding, shelf space renting and marketing.

The Scheme supports food manufacturing entities with stipulated minimum sales and willing to make minimum stipulated investment for expansion of processing capacity and branding abroad to incentivise emergence of strong Indian brands. It aspires to not only support creation of global food manufacturing champions, but also to strengthen select Indian brand of food products for global visibility and wider acceptance in the international markets, increase employment opportunities of off-farm jobs and ensue remunerative prices of farm produce and higher income to farmers.

5.1.4. Mission for Integrated Development of Horticulture (MIDH)

The Mission for Integrated Development of Horticulture (MIDH**)** is a Centrally Sponsored Scheme designed for the holistic growth and development of the horticulture sector, covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa, and bamboo across India. MIDH operates through the following sub-schemes:

- **National Horticulture Mission (NHM)**: Launched in 2005, NHM aims to promote the holistic growth of the horticulture sector, focusing on the development of post-harvest management, processing, and marketing infrastructure.
- **Horticulture Mission for Northeast & Himalayan States (HMNEH)**: This scheme promotes horticultural development, including fruits and vegetables, in the North-Eastern region, Jammu & Kashmir, and the Himalayan states. It provides support for infrastructure development, R&D, and marketing.
- **National Horticulture Board (NHB)**: The NHB focuses on improving integrated development in the horticulture industry, enhancing production, productivity, and processing of fruits and vegetables[17].
- **Cluster Development Programme (CDP):** The Cluster Development Programme is an initiative under MIDH that focuses on developing horticulture clusters to enhance productivity, competitiveness, and market integration. The programme aims to leverage geographical specializations of horticulture clusters and promote integrated and market-led development of pre-production, production, post-harvest, logistics, branding, and marketing activities[18].
-

Objectives:

- To promote integrated and market-led development of horticulture clusters.
- To enhance productivity and competitiveness of horticulture crops.
- To facilitate the development of infrastructure for post-harvest management, processing, and marketing.
- To encourage the adoption of good agricultural practices, including Integrated Pest Management (IPM) and Integrated Nutrient Management (INM).

To promote the formation and strengthening of Farmer Producer Organizations (FPOs) and other farmer groups.

5.1.5 Agriculture Infrastructure Fund (AIF)

To address the existing infrastructure gaps and mobilize investment in agriculture infrastructure, Agri Infra Fund was launched under Aatmanirbhar Bharat Package. AIF was introduced with a vision to transform the agriculture infrastructure landscape of the country. The Agriculture Infrastructure Fund is a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and credit guarantee support.

Under the scheme, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to Rs. 2 Crores. Further, each entity is eligible to get the benefit of the scheme for up to 25 projects located in different LGD codes.

Eligible beneficiaries include Farmers, Agri-entrepreneurs, Start-ups, Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmers Producer Organizations (FPOs), Self Help Group (SHGs), Joint Liability Groups (JLGs), Multipurpose Cooperative

[17] Mission for Integrated Development of Horticulture (MIDH). Department of Horticulture, Ministry of Agriculture. Available at: https://agricoop.nic.in.

[18] https://nhb.gov.in/CDPMap.aspx?enc=DQ7ZOAcTzApalV0FUWykGqk5kZPafwDHBwTBtCFfIQ20h1xnDHyI7Wq7IDK+09Yd

Societies, Central/State agency or Local Body sponsored Public Private Partnership Projects, State Agencies, Agricultural Produce Market Committees (Mandis), National & State Federations of Cooperatives, Federations of FPOs (Farmers Producer Organizations) and Federations of Self Help Groups (SHGs).

6. Plant based Proteins R&D and Skill Development

The plant-based food market continues to innovate with new product launches and collaborations that cater to evolving consumer needs. Future alternate meat consumption will likely include a variety of meats, including plant-based, microbial fermentation-based, and cell-cultured meat - with newer and kinder meats as advancements further in food technologies.

Researchers at the Council of Scientific & Industrial Research (CSIR) have also discovered a protein-rich micro-algae. Such ingredients may be studied further to improve the overall quality parameters of smart proteins. India's all-time funding for smart protein stands at $950,518, which is approximately 134 times lower than the US ($127,573,952), 63 times lower than the UK ($59,685,629), and 1.7 times lower than Brazil ($1,620,057), as per publicly available sources[19].

In India, the research and skill development framework for the plant-based foods/proteins goods sector is spearheaded by esteemed institutions such as NIFTEM, CSIR-CFTRI, NABI, ICAR, and the Indian Institute of Skill Development Training. Moreover, industries complement these efforts by providing in-house training. The table below outlines some of the prominent institutions that serve as the cornerstone of India's R&D ecosystem in this domain.

Table 15: Indian Institutions

Institutions	Highlights
National Institute of Food Technology, Entrepreneurship and Management (NIFTEM) - Kundli	• MoFPI established the NIFTEM at Kundli, Haryana in 2012. • NIFTEM currently offers several courses and undertakes R&Dprojects in dairy processing and food technology • The Institute also has a small Plant-based foods unit for student research, demonstrations and product development trials.
National Institute of Food Technology, Entrepreneurship and Management -Thanjavur, Tamil Nadu	• Previous known as Indian Institute of Food Processing Technology (IIFPT), NIFTEM – T is an Institute of National Importance (INI) • NIFTEM-T currently offers courses and undertakes R&D projectsin dairy and food processing • The institute is designated as the Centre of Excellence for non-thermal processing
Central Food Technological Research Institute (CSIR – CFTRI) - Mysuru, Karnataka	• Established in 1950, CFTRI is headquartered in Mysuru with resource centers in Lucknow, Hyderabad, Mumbai • CFTRI focuses on the following key areas

[19] Government-support-brief-10.01.pdf

Institutions	Highlights
	- Food engineering sciences - Technology development - Translational research - Food protection and safety - Skill Development & Training Programs
National Agriculture and Food Analysis and Research Institute (NAFARI) - recognized by the Department of Scientific and Industrial Research (DSIR), GoI	• NAFARI is also an approved "PAN India Training Partner" of "FoSTaC" under Food Safety Standards Authority of India (FSSAI) to conduct mandatory Food Safety Supervisor Training Programs.
CSIR-National Botanical Research Institute (NBRI), Lucknow	• Actively involved in plant-based food research and innovation, particularly focusing on health-oriented products derived from traditional botanical knowledge.
Institute of Life Sciences (ILS), Bhubaneswar[20]	• Conducts research on smart proteins and functional foods aligned with India's BioE3 policy. • Focuses on sustainable food systems and bioactive compound extraction.
National Institute of Plant Genome Research (NIPGR)[21]	• Engaged in proteomics and plant genome research relevant to plant-based protein development.
ICMR–National Institute of Nutrition (NIN)	• NIN has attained global recognition for its pioneering studies on various aspects of nutrition research, with special reference to protein energy malnutrition (PEM).
Others	• Ministry of Skill Development & Entrepreneurship • National Skill Development Corporation (NSDC) & its Partners • Indian Institute of Skill Development Training • In-house R&D training centres and skill development led by industries. • PBFIA - Plant-based Foods Industry Association (PBFIA) • FICSI - Food Processing Sector Skill Council • Good Food Institute India (GFI India)
Agriculture Institutions	• ICAR – Indian Institute Millet Research • ICAR - Indian Institute of Chemical Technology • All 63 State Agriculture Universities, 7 Central Agriculture Universities, and 4 ICAR Deemed Total - 74

[20] Smart proteins as functional foods: India's future, a healthy abode – Institute of Life Sciences, BBSR, Department of Biotechnology

[21] National Institute of Plant Genome Research

Conclusion

Plant-based proteins are becoming innovative and fast-growing ingredients in various food application industries due to many benefits over animal-derived proteins. Various technologies help in improving the functional and nutritional properties of plant-based proteins[22]. Increasing consumer acceptance and a willingness to pay premium prices for native food attributes - such as nutritional, medicinal, and environmental benefits - indicate a growing market[23]. A gradual transition from animal to plant-based protein may be desirable to maintain environmental stability, ethical reasons, affordability of food, greater food safety, fulfilling higher consumer demand, and combating of protein-energy malnutrition.

The Plant-based foods industry in India is poised for substantial growth in the coming years, driven by changing consumer preferences, rising disposable incomes, growing urbanization & product reach, changing lifestyles and technological advancements. Despite challenges such as high competition, ingredient sourcing, and infrastructure requirements, the industry offers significant opportunities for established players and aspiring entrepreneurs. By leveraging innovation, catering to evolving consumer demands, maintaining product quality, government's proactive initiatives and benign support, robust regulatory framework, companies can unlock the tremendous potential that the Indian Plant-based foods market holds.

Furthermore, fostering skill development, empowering small-scale producers, and building strategic partnerships among industry stakeholders can significantly boost the sector's growth. By embracing digital technologies, integrating AI for operational efficiency, leveraging e-commerce platforms, and deploying targeted marketing strategies, India can enhance market reach and deepen consumer engagement in the plant-based foods and confectionery space.

With robust government support, clear regulatory frameworks, and proactive industry initiatives, India's plant-based foods and confectionery sector is on the cusp of transformative growth. Through sustained collaboration among policymakers, businesses, and consumers, the country is well-positioned to unlock the full potential of this dynamic and sustainable industry.

[22] Frontiers | Sustaining Protein Nutrition Through Plant-Based Foods

[23] Navigating challenges in native plant-based food value chains within the global food system: A systematic literature review - ScienceDirect

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