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About Us

NPCS is a well-known technical consultancy that focuses on Project Reports Compilation, and we have been following a tight system and procedure to assure only top quality in accordance with our clients' expectations in this rapidly increasing and changing market. We've created the list of the top projects to start your own business startups.

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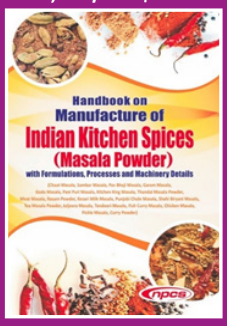
Handbook on Manufacture of
Indian Kitchen Spices (Masala Powder) with Formulations, Processes and Machinery Details

(Chaat Masala, Sambar Masala, Pav Bhaji Masala, Garam Masala, Goda Masala, Pani Puri Masala, Kitchen King Masala, Thandai Masala Powder, Meat Masala, Rasam Powder, Kesari Milk Masala, Punjabi Chole Masala, Shahi Biryani Masala, Tea Masala Powder, Jaljeera Masala, Tandoori Masala, Fish Curry Masala, Chicken Masala, Pickle Masala, Curry Powder) (6th Revised Edition)

₹ 1,995/- US$ 225 -



Spices or Masala as it is called in Hindi, may be called the "heartbeat" of an Indian kitchen. The secret ingredient that makes Indian food truly Indian is the generous use of signature spices. From ancient times of the maharaja's, spices have added unforgettable flavours and life to Indian cuisine. Indian spices offer significant health benefits and contribute towards an individual's healthy life. There are a large number of various spices, used along with food such as Chilli (Mirchi), Turmeric (Haldi), Coriander (Dhania), Cumin (Jeera), Mustard (Rai), Fenugreek (Methi), Sesame (Til), Cardamon, Peppercorns (Kali Mirchi), Clove, Fennel (Saunf), Nutmeg and Mace etc.

In modern times, international trade in spices and condiments have increased dramatically which could be attributed to several factors including rapid advances in transportation, permitting easy accessibility to world markets, growing demand from industrial food manufacturers of wide ranging convenience foods. As the demand for Indian spices is increasing day by day, Indian manufacturers are producing spices of high quality.

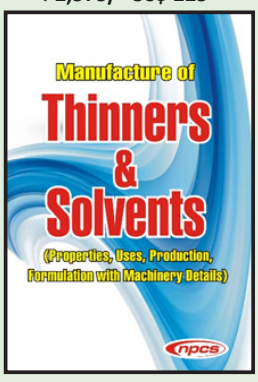
The book presents the fundamental concepts of Spices (Masala Powder) Indian Kitchen Spices product mix in a manner that new entrepreneurs can understand easily. It covers Formulation for spices i.e., Chaat Masala, Chana Masala, Sambar Masala, Pav Bhaji Masala, Garam Masala, Goda Masala, Pani Puri Masala, Kitchen King Masala, Thandai Masala Powder, Meat Masala, Rasam Powder, Kesari Milk Masala, Punjabi Chole Masala, Shahi Biryani Masala, Tea Masala Powder, Jaljeera Masala, Tandoori Masala, Fish Curry Masala, Chicken Masala, Pickle Masala, Curry Masala.

This book contains manufacturing process, Packaging and Labelling of Spices. The highlighting segments of this book are Spices Nutritional value, Special Qualities and Specifications, Cryogenic Grinding Technology, Food Safety & Quality, BIS Specifications, Quality Control, Market, Sample Production Plant Layout and Photograph of Machinery with Supplier's Contact Details. It also covers Good manufacturing practices in Food Industry, Case Study for Everest and MDH Masala and Top Spice Brands of India.

This book is aimed for those who are interested in Spices business, can find the complete information about Manufacture of Indian Kitchen Spices (Masala Powder). It will be very informative and useful to consultants, new entrepreneurs, startups, technocrats, research scholars, libraries and existing units.

Manufacture of
Thinners & Solvents
(Properties, Uses, Production, Formulation with Machinery Details)

₹ 2,575/- US$ 225 -



Solvents are defined as chemicals compound that are introduced during manufacture of the paint itself and before packaging, in order to maintain all components of the paint in a liquid / viscous state such as we know it. A solvent is usually a liquid but can also be a solid or a gas. Solvents find various applications in chemical, pharmaceutical, oil, and gas industries, including in chemical syntheses and purification processes.

Thinners are defined as chemical compounds that are introduced into the paint prior to application, in order to modify the viscosity and other properties related to the rate of curing that may affect the functionality and aesthetics of the final layer painting.Paint thinner, a solvent used in painting and decorating, for thinning oil-based paint and cleaning brushes. A Thinner may be a single solvent or a combination of solvent types. Often, specific thinners are required by the manufacturer of a coating to prevent damage to coating properties that may occur when an inappropriate thinner is used.

Solvents (for cleaning up or softening) and Thinners (for diluting or extending) are useful not only in painting but in other areas such as Wooden Furniture industry, Automobile industry, Ink industry, Rubber industry.

As the paint industry is a major consumer of Thinners & Solvents, and is expanding at a tremendous speed, it is very obvious that the demand of thinners, too, will increase tremendously. The paints & coatings accounts for the largest share in the aliphatic hydrocarbon Thinners & Solvents market. It is also projected to be the fastest-growing application of the aliphatic hydrocarbon Thinners and Solvents market.

The book contains Properties, Uses, manufacturing of Thinners & Solventsand providing information regarding thinner formulation. It also covers raw material suppliers, photographs of plant & Machinery with supplier's contact details. Some of the fundamentals of the book are thinner in Paint Industry, Health and Safety Measures of Chemicals, Pollution Control, Waste Disposal of Hazardous Chemicals and Storage, Labelling and Packaging of Chemicals etc.

It will be a standard reference book for professionals and entrepreneurs. Those who are interested in this field can find the complete information from manufacture to final uses of Solvents and Thinners. It will be very helpful to consultants, new entrepreneurs, technocrats, research scholars, libraries and existing units.

PP Woven Fabric & Bags:

A High-Growth Venture for New Entrepreneurs

Polypropylene (PP) woven fabric and bags are among the most versatile, cost-effective, and in-demand packaging solutions in the global market. Known for their strength, durability, and reusability, PP woven products are used extensively in industries like agriculture, cement, chemicals, fertilizers, food grains, and retail. For entrepreneurs seeking a scalable and export-oriented business, manufacturing PP woven fabric and bags presents a solid, future-proof opportunity.

Why Startups Should Consider This Business

1. **High Demand Across Sectors** – From packaging rice and flour to industrial chemicals and fertilizers, PP woven bags are indispensable. Their affordability and resilience make them a preferred choice globally.
2. **Steady Market Growth** – Packaging demand is rising with expanding global trade, e-commerce, and agriculture exports, ensuring long-term sustainability.
3. **Low Competition in Niche Markets** – Specialized designs, printed branding, and export-quality bags offer scope for differentiation.
4. **Export-Ready Product** – Many developing countries, especially in Africa, Southeast Asia, and Latin America, import PP woven bags in large quantities due to growing industrial needs.

Market Overview & Growth Potential

The global PP woven bags market was valued at USD 25+ billion in 2023 and is projected to grow at a CAGR of around 4–5% till 2030.

- Asia-Pacific is the largest producer and consumer, with India, China, and Vietnam dominating exports.
- In India, the domestic demand for PP woven bags is rising due to rapid growth in agriculture packaging, cement industry, and retail chains.
- Export Potential – India exported PP woven bags worth over USD 1 billion in 2024, with major markets being the USA, UAE, African nations, and Europe.

Key Drivers:

- Growth in agriculture and food processing
- Expanding construction industry
- Shift towards reusable and recyclable packaging
- Government support for export-oriented manufacturing units

Trends Shaping the Industry

1. **Eco-Friendly Production** – Recyclable PP fabrics are gaining preference to meet sustainability goals.
2. **Customization & Branding** – Printed PP woven bags with company logos are increasingly popular among bulk buyers.
3. **Lightweight Yet Durable Packaging** – Reducing packaging weight without compromising strength to save on shipping costs.
4. **Automation in Manufacturing** – Modern machinery allows higher output with consistent quality.

Reasons for Entrepreneurs to Invest

- **Low to Medium Capital Requirement** – A small-scale unit can be set up with a relatively moderate investment, scalable over time.
- **High Return on Investment** – Strong domestic and export demand ensures good margins.
- **Government Support** – Incentives under export promotion schemes and MSME benefits.
- **Recession-Resilient Industry** – Packaging demand remains stable even during economic slowdowns.

Manufacturing Process Overview

- **Extrusion:** Polypropylene granules mixed with color masterbatch and additives are fed into an extruder, melted, and extruded into thin tapes.
- **Stretching:** The extruded tapes are stretched for higher tensile strength.
- **Weaving:** The tapes are woven into fabric on circular or flat looms.
- **Lamination (Optional):** For moisture resistance, the fabric is laminated with a thin PP or BOPP film.
- **Cutting & Printing:** Fabric is cut to required sizes, and printing is done as per customer requirements.
- **Stitching:** Bottom and side stitching is done to produce finished bags.
- **Quality Check & Packing:** Final inspection ensures strength, print clarity, and finishing before dispatch.

Conclusion

PP woven fabric and bags manufacturing is an excellent choice for entrepreneurs seeking a profitable, export-oriented, and sustainable packaging business. With the right machinery, quality control, and market positioning, this venture offers not just consistent domestic demand but also lucrative global trade opportunities. Startups can leverage government incentives, low raw material costs, and rising global packaging needs to establish a strong foothold in this industry.

PROJECT COST ESTIMATE

CAPACITY

PP Woven Bags (50-60cm x 82-100 cm)	: 54,545 Nos. Per Day
Plant & Machinery	: ₹ 629 Lakhs
Cost of Project	: ₹ 1688 Lakhs
Rate of Return	: 25.19%
Break Even Point	: 44.09%

Plastic Waste Pyrolysis

(Plastic to Oil Conversion)

Pyrolysis is the chemical decomposition of organic substances by heating the word is originally coined from the Greek-derived elements pyro "fire" and lysys "decomposition". Pyrolysis is usually the first chemical reaction that occurs in the burning of many solid organic fuels, cloth, like wood, and paper, and also of some kinds of plastic. Anhydrous Pyrolysis process can also be used to produce liquid fuel similar to diesel from plastic waste.

Increasing industrialization and motorization has lead to a significant rise in demand of petroleum products. As these are the nonrenewable resources it is difficult to predict availability of these resources in future, resulting uncertainty in its supply and price and is impacting growing economies like India. Many alternate fuels like Alcohols, Biodiesel, LPG, CNG etc have been already commercialized in the transport sector. Recent developments in recycled plastic and plastic waste to oil market indicate that policymakers and energy industry players in various regions, particularly in North America and Europe, are focusing on the commercialization of the technology. As a whole entrepreneur can venture in this field will be successful.

PROJECT COST ESTIMATE

CAPACITY :

Pyrolysis Oil	*: 10 MT/Day*
Carbon (by product)	*: 3.33 MT/Day*
Gas (by product)	*: 2 MT/Day*
Plant & Machinery	: ₹ 197 Lakhs
Cost of Project	: ₹ 512 Lakhs
Rate of Return	: 26%
Break Even Point	: 58%

Uniform Manufacturing:

Fire Resistance, ARC Flash Protection & Corporate Wear – A High-Potential Business for Startups

The global demand for specialized uniforms has been on a steady rise, driven by workplace safety regulations, corporate branding trends, and the expanding hospitality sector. For entrepreneurs, entering the Fire Resistance Uniform, ARC Flash Protection Uniform, and Corporate Uniform (including hospitality industry) segment offers a profitable and sustainable opportunity with a strong export market.

Why This Industry is a Profitable Choice for Startups

Rising Workplace Safety Regulations: Governments and industries worldwide are tightening occupational safety laws. In sectors like oil & gas, mining, utilities, and manufacturing, fire-resistant (FR) and ARC flash protective clothing are mandatory, creating a consistent demand for high-performance safety uniforms.

Corporate Branding & Hospitality Growth: Corporate uniforms are no longer just functional—they serve as brand ambassadors. In hospitality, from hotels to restaurants, uniforms help convey professionalism and brand identity, making them an essential recurring purchase.

Export Potential: The global market for protective clothing, including FR and ARC flash uniforms, is projected to reach USD 5–6 billion by 2030 with a CAGR of around 6–7%. Corporate uniforms and hospitality wear have a large export market in the Middle East, Europe, and Southeast Asia.

Repeat Orders & Long-Term Clients: Uniform contracts with corporations and safety gear tenders for industries ensure repeat business. Once a manufacturer builds a reputation for quality and compliance, client retention rates are high.

Market Size, Share, and Trends

- **Global Market Size**
  - Fire-Resistant Uniforms: ~USD 3.2 billion (2024)
  - ARC Flash Protection Clothing: ~USD 1.8 billion (2024)
  - Corporate & Hospitality Uniforms: ~USD 65 billion (2024)
- **Growth Drivers**
  - Industrial safety norms (NFPA 2112, IEC 61482)
  - Hospitality sector growth due to tourism and F&B expansion
  - Increased awareness about employee safety and corporate image
- **Regional Insights**
  - **Asia-Pacific:** Fastest-growing market due to industrial expansion
  - **Middle East & Africa:** Strong demand for heat and flame-resistant uniforms in oil & gas
  - **Europe & North America:** Mature markets with high safety compliance and premium hospitality sectors

Manufacturing Process Overview

For Fire Resistance & ARC Flash Protection Uniforms

1. **Fabric Selection & Treatment** – Use inherent FR fabrics like Nomex® or treated cotton blends.
2. **Cutting** – CNC or manual cutting of fabric panels according to patterns.
3. **Sewing & Assembly** – High-strength sewing machines with flame-resistant threads.
4. **Quality Testing** – Thermal resistance, arc flash rating, seam strength tests.
5. **Finishing & Packaging** – Branding, labeling, ironing, and final packing.

For Corporate & Hospitality Uniforms

1. **Design & Fabric Selection** – Polyester blends, cotton, or stretch fabrics for comfort and durability.
2. **Pattern Making** – CAD-based pattern cutting for precision.
3. **Stitching** – Industrial sewing with embroidery or logo printing.
4. **Quality Check** – Fit, stitching, and colorfastness inspection.
5. **Ironing & Packaging** – Wrinkle-free finishing for professional presentation.

Export Potential

- **Target Countries:** UAE, Saudi Arabia, Qatar, USA, UK, Australia, Germany, Singapore.
- **High Demand Sectors:** Oil & Gas, Mining, Electrical Utilities, Hospitality Chains, Airlines, Corporate Offices.
- **Competitive Edge:** Offering safety certifications, customization, and premium-quality fabrics can help win bulk export orders.

Why Startups Should Enter This Market Now

- **Government Incentives:** Many countries provide subsidies for manufacturing safety gear and export promotion.
- **Low-to-Medium Investment Scale:** A small-scale setup can start with corporate uniforms, then scale into protective clothing.
- **Technology Access:** Modern CAD/CAM and textile treatment technologies are more affordable, making production efficient.
- **Global Branding Opportunity:** Safety and corporate uniforms are universal needs, giving even small startups access to global customers.

Conclusion:

Manufacturing Fire Resistance Uniforms, ARC Flash Protection Uniforms, and Corporate & Hospitality Uniforms is not just a clothing business—it's a gateway to serving high-value industrial and corporate clients. With steady demand, high customer retention, and export potential, this is an ideal venture for entrepreneurs who want a blend of profitability and long-term stability. Those who invest now can position themselves as trusted suppliers in a market where safety, quality, and branding matter most.

PROJECT COST ESTIMATE

CAPACITY :	
FR Uniform	*: 310 Pcs Per Day*
ARC Flash	*: 310 Pcs Per Day*
Corporate & Hospitality	*: 310 Pcs Per Day*
Plant & Machinery	**: ₹ 1.25 Crore**
Cost of Project	**: ₹ 15.56 Crore**
Rate of Return	**: 46%**
Break Even Point	**: 32%**

Rice Husk Based Biodegradable Cutlery

The global biodegradable cutlery market size was accounted for USD 33.9 million, in 2018 and is projected to grow at a significant rate of CAGR of 5.9% during the forecast period, 2019 to 2025. The growing awareness about hazardous impacts of non-biodegradable waste is expected to positively affect the market growth. The government has formed strict regulations for banning non-biodegradable plastic. Supportive government initiatives along with growing consumer awareness about side effects of non-biodegradables are projected to boost the market growth. Entrepreneurs who invest in this project will be successful.

PROJECT COST ESTIMATE

CAPACITY	
Biodegradable Cutlery (Per Set 9 Pcs. Flatware)	**: 1,852 Sets / Day**
Plant & Machinery	**: ₹ 28 Lakhs**
Cost of Project	**: ₹ 142 Lakhs**
Rate of Return	**: 28%**
Break Even Point	**: 63%**

HDPE Pipes & Fittings

– A High-Growth Manufacturing Venture for Startups

High-Density Polyethylene (HDPE) pipes and fittings have emerged as one of the most reliable, durable, and cost-effective solutions for fluid and gas transportation. They are widely used in agriculture, water supply, sewage systems, industrial applications, and even in gas distribution networks. For entrepreneurs and startups, entering this sector offers not only a steady domestic market but also strong export potential, driven by global demand for lightweight, corrosion-resistant, and long-lasting piping solutions.

Market Overview and Potential

The global HDPE pipes market was valued at over USD 18 billion in 2023 and is projected to reach nearly USD 28 billion by 2030, growing at a CAGR of 6–7%. In India, the sector benefits from rising urbanization, smart city projects, rural water supply initiatives, and large-scale irrigation schemes like the Jal Jeevan Mission.

Key drivers include:

- Government infrastructure spending on water and sanitation.
- Replacement of aging metal pipelines with HDPE for longevity and cost savings.
- Growing agricultural irrigation needs.
- Expanding industrial sectors requiring chemical-resistant piping.

The export market is also promising, with India exporting HDPE pipes to regions like Africa, the Middle East, and Southeast Asia.

Why Startups Should Invest in HDPE Pipe Manufacturing

1. **Evergreen Demand** – Water supply, drainage, and irrigation are essential services, ensuring continuous market demand.
2. **Government Support** – Subsidies and incentives are offered for manufacturing units in infrastructure-related sectors.
3. **High Return on Investment** – Margins can be attractive, especially with large-volume government and industrial orders.
4. **Low Maintenance Product** – HDPE pipes have a life span of 50+ years, making them a preferred choice for projects worldwide.
5. **Diversified Market** – Opportunities across agriculture, construction, mining, industrial plants, and municipal infrastructure.

Market Share and Trends

- **Agriculture Sector** – Accounts for over 40% of HDPE pipe demand in India.
- **Urban Infrastructure** – Nearly 30% share, driven by municipal water supply and sewerage.
- **Industrial Use** – Around 20%, especially in chemical, mining, and oil & gas industries.
- **Export Growth** – 10–15% annual rise in export volume, especially for high-pressure and large-diameter pipes.

Emerging trends include eco-friendly manufacturing, increased use of automation in production lines, and integration of smart monitoring systems into HDPE pipelines.

Manufacturing Process

The production of HDPE pipes & fittings typically follows these steps:

1. **Raw Material Preparation** – HDPE granules are procured and inspected for quality.
2. **Extrusion** – Granules are fed into an extruder where they are melted and shaped into pipes of required diameters using a die.
3. **Cooling** – Pipes pass through a cooling tank to maintain shape and strength.
4. **Cutting** – Pipes are cut into standard or customized lengths.
5. **Fittings Production** – Injection molding or fabrication techniques are used to make elbows, tees, reducers, and couplers.
6. **Quality Testing** – Pipes undergo pressure testing, tensile strength checks, and dimensional accuracy inspections.
7. **Packaging & Dispatch** – Finished products are bundled, labeled, and prepared for delivery.

Export Potential

India has emerged as a competitive exporter of HDPE pipes, thanks to:

- Lower production costs.
- Availability of skilled labor.
- Access to high-quality raw materials.

Key export destinations include UAE, Oman, Kenya, South Africa, Bangladesh, and Sri Lanka. The global shift towards corrosion-free and long-life pipeline materials further strengthens India's export positioning.

Conclusion

For entrepreneurs seeking a profitable manufacturing venture, HDPE pipes & fittings present a strong opportunity. Backed by consistent demand, government infrastructure spending, growing export potential, and relatively straightforward manufacturing, this business promises steady returns and scalability. Startups entering now can capture market share by focusing on quality, competitive pricing, and targeting both domestic and international markets.

PROJECT COST ESTIMATE

CAPACITY:

HDPE Pipe (20-110mm)	*: 8 MT Per Day*
HDPE Fittings (63-160mm)	*: 2 MT Per Day*
Plant & Machinery	**: ₹ 134 Lakhs**
Cost of Project	**: ₹ 739 Lakhs**
Rate of Return	**: 21%**
Break Even Point	**: 60%**

Indian Kitchen Spices (Masala Powder)

Spices Powder and Blended Spices, Readymade Mixes

(Red Chilli Powder, Sambhar Masala, Biryani Masala, Chicken Fry Masala, Garam Masala)

The Indian spices market is worth INR 40,000 crore annually. Key spices produced in the country include pepper, cardamom, chilli, ginger, turmeric, coriander, cumin, celery, fennel, fenugreek, ajwain, dill seed, garlic, tamarind, clove, and nutmeg among others. The market is largely unorganized and the branded segment makes up about 15%.

The population in India is surging and the increasing consumer expenditure on food explains the swelling demand for food in India. Accordingly, the demand for spices is expected to grow in the future which will lead to a prominent growth in the revenues from the sales of spices in India. The revenues from India market are expected to expand to around USD 18 billion in FY'2020, growing with a CAGR of ~% from FY'2016 to FY'2020. The highest contribution to this growth is expected to come from the spice mixes and blended spices.

PROJECT COST ESTIMATE

CAPACITY:

Red Chilli Powder	*: 100 Kgs. / Day*
Sambhar Masala	*: 100 Kgs. / Day*
Biryani Masala	*: 100 Kgs. / Day*
Chicken Fry Masala	*: 100 Kgs/ Day*
Garam Masala	*: 100 Kgs. / Day*
Plant& Machinery	**: ₹ 35 Lakhs**
Cost of Project	**: ₹ 195 Lakhs**
Rate of Return	**: 29%**
Break Even Point	**: 53%**

NPK Fertilizer – A Lucrative Venture for Emerging Entrepreneurs

Introduction

NPK (Nitrogen-Phosphorus-Potassium) fertilizers are among the most essential agricultural inputs, providing balanced nutrition to crops. The variant is gaining popularity due to its high nutrient availability, compatibility with modern irrigation systems like drip and sprinkler, and ability to improve crop yield and quality. With the rising adoption of precision farming and greenhouse cultivation, NPK fertilizers are in high demand both in domestic and export markets. For startups and entrepreneurs, entering this industry offers a combination of steady demand, technological advancement, and export potential.

Why Startups Should Choose This Industry

1. **Steady Demand and Market Stability** Agriculture is the backbone of many economies, including India. Fertilizers are non-substitutable inputs, ensuring a constant demand cycle. The shift toward high-value crops like fruits, vegetables, and flowers further accelerates the demand for fertilizers.
2. **Export Potential** Countries in Asia-Pacific, Africa, and the Middle East are increasing their adoption of modern irrigation systems and high-yield farming techniques, creating a significant export opportunity for Indian manufacturers.
3. **Government Support** Multiple government schemes encourage efficient water and fertilizer use, promoting fertigation practices that rely heavily on NPK fertilizers. Subsidies and incentives are also available for production and distribution.
4. **Scalability** This business can start with a moderate investment and scale up as market penetration increases. The modular nature of manufacturing equipment allows for capacity expansion without excessive downtime or restructuring.

Market Size, Share, Trends, and Analysis

- **Market Size:** The global fertilizer market was valued at over USD 13 billion in 2023 and is expected to grow at a CAGR of 5–6% over the next five years.
- **India's Share:** India accounts for a growing segment of the market, driven by horticulture expansion and micro-irrigation adoption.
- **Key Trends:**
  - Increasing focus on precision agriculture and fertigation.
  - Rising cultivation of high-value cash crops.
  - Growing awareness of balanced plant nutrition for quality yield.
- **Competitive Landscape:** While large fertilizer companies dominate bulk sales, niche manufacturers producing high-quality blends have strong growth prospects.

Export Potential

NPK fertilizers are in demand in countries like Kenya, Vietnam, UAE, Bangladesh, and Egypt. Export benefits include:

- **Lower Production Costs:** Competitive Indian manufacturing costs attract international buyers.
- **Favorable Trade Agreements:** Reduced tariffs under various trade partnerships.
- **Agriculture Growth Abroad:** Developing nations are rapidly modernizing agriculture, boosting import demand.

Manufacturing Process Overview

The manufacturing of NPK fertilizer involves blending high-purity raw materials to achieve precise nutrient ratios.

Step-by-Step Process:

1. **Raw Material Procurement**
   - Nitrogen sources (Urea, Ammonium Nitrate, Calcium Nitrate)
   - Phosphorus sources (Monoammonium Phosphate, Monopotassium Phosphate)
   - Potassium sources (Potassium Nitrate, Potassium Sulphate)
2. **Weighing and Batching** Raw materials are accurately weighed to ensure consistent nutrient composition.
3. **Mixing and Blending** High-speed ribbon or paddle mixers are used to achieve a homogeneous blend.
4. **Quality Testing** Samples are tested for nutrient composition, solubility, and moisture content.
5. **Packaging** Final products are packed in moisture-proof bags to maintain quality during storage and transportation.

Market Overview for Entrepreneurs

- **Profit Margins:** Typically range from 15–25% depending on raw material sourcing and market penetration.
- **Risk Factors:** Raw material price volatility and competition from established brands. However, a focus on quality, branding, and technical advisory services for farmers can help overcome this challenge.

Conclusion

NPK fertilizer manufacturing is a sustainable and scalable business idea for startups. With growing demand from both domestic and export markets, supportive government policies, and rising awareness among farmers, the sector promises strong returns. Entrepreneurs who combine high-quality production with farmer education and strategic marketing can capture a significant share of this growing market.

PROJECT COST ESTIMATE

CAPACITY

NPK Fertilizer (19-19-19)	: 10 MT Per Day
Plant & Machinery	: ₹ 69 Lakhs
Cost of Project	: ₹ 819 Lakhs
Rate of Return	: 29%
Break Even Point	: 44%

Sugarcane Juice Preservation and Bottling Plant

Sugarcane juice is quite nutritious as it contains natural sugars, minerals like iron, magnesium, phosphorous, calcium and organic acids e.g. malic acid, succinic acid, acotinic acid etc. Preservation is done when Juice or food is kept for longer period without any deteriorated or spoils the juice by the direct contact with atmosphere. Sugarcane juice is excellent in treating urinary related diseases. It keeps the urine flow clear and aids the kidneys to perform better. Sugarcane juice relieves the burning sensation which arises due to infections of the urinary tract. The sugar cane juice provides the glucose, which is stored, as glycogen to be 'burned' by muscles when required. Sugar Industry contributes about 2500 crore rupees as tax to both central and state governments. The industry size in terms of capital is more than Rs. 40,000 crore. Almost 50 million people depend on sugar industry for their livelihood. We actively encourage a culture of innovation, which facilitates the development of new technologies and ensure a high quality product.

PROJECT COST ESTIMATE

CAPACITY

Capacity	: 48, 00,000 Ltrs. /Annum
Plant & Machinery	: ₹ 106 Lakhs
Cost of Project	: ₹ 467 Lakhs
Rate of Return	: 28%
Break Even Point	: 54%

Zinc Sulphate Production from Zinc Ash & Sulfuric Acid – High-Potential Manufacturing for New Entrepreneurs

Introduction

Zinc Sulphate ($ZnSO_4$) is an essential inorganic compound widely used in agriculture, animal feed, water treatment, and various industrial applications. Its demand is increasing globally due to its role as a micronutrient fertilizer that corrects zinc deficiency in crops, thereby improving yield and quality. Producing zinc sulphate from zinc ash and sulfuric acid is a cost-effective process that not only meets market needs but also contributes to environmental sustainability by recycling industrial waste.

For startups and entrepreneurs, this manufacturing business offers strong market potential, steady demand, and opportunities for both domestic and export sales.

Why Startups Should Consider This Industry

1. **Consistent Agricultural Demand** – Zinc sulphate is a recommended micronutrient in agricultural policies across many countries. With the expansion of modern farming and the adoption of balanced fertilization techniques, its consumption is on the rise.
2. **Raw Material Availability** – Zinc ash, a byproduct from galvanizing plants, is abundantly available and often sold at low prices. This ensures low-cost input and a competitive manufacturing advantage.
3. **Eco-Friendly Recycling** – The process utilizes zinc ash, which is otherwise a waste material, reducing environmental pollution and promoting sustainable manufacturing.
4. **Low-to-Moderate Investment** – Setting up a zinc sulphate manufacturing plant requires moderate capital compared to other chemical industries, making it suitable for first-time entrepreneurs.
5. **Export Potential** – With agriculture being a global priority, countries in Africa, South Asia, and Latin America import large quantities of zinc sulphate, providing an attractive export opportunity.

Market Size, Share, and Trends

- **Global Market** – The global zinc sulphate market is valued at over USD 1.8 billion (2024) and is projected to grow at a CAGR of 5–6% over the next five years.
- **Key Drivers** – Rising population, shrinking arable land, government subsidies on micronutrient fertilizers, and increasing awareness among farmers.
- **End-Use Segments** – Agriculture (fertilizers), animal feed supplements, water treatment, and industrial applications.
- **Export Potential** – Major export destinations include Bangladesh, Nepal, Sri Lanka, African nations, and parts of Southeast Asia.

Manufacturing Process Overview

1. Raw Material Preparation

- Zinc ash is sourced from galvanizing industries and checked for zinc content.
- Sulfuric acid is prepared/diluted to the required concentration.

2. Reaction Process

- Zinc ash is gradually added to the sulfuric acid in a reaction vessel under controlled temperature and agitation.
- Zinc reacts with sulfuric acid to form zinc sulphate solution and release impurities as residue.

3. Filtration

- The mixture is filtered to remove insoluble residues, ensuring a pure zinc sulphate solution.

4. Crystallization

- The clear solution is cooled to allow zinc sulphate crystals to form.

5. Centrifugation & Drying

- Crystals are separated from the liquid using a centrifuge and then dried in a dryer.

6. Packing

- Final product is weighed, packed in HDPE bags with liners, and stored for dispatch.

Conclusion

Manufacturing zinc sulphate from zinc ash and sulfuric acid offers a sustainable, profitable, and scalable business model for startups and entrepreneurs. With increasing agricultural needs, strong export potential, and the advantage of recycling industrial waste, this project is both economically and environmentally beneficial. Entrepreneurs entering this space can expect long-term growth prospects, especially if they focus on quality production, farmer awareness programs, and tapping into export markets.

PROJECT COST ESTIMATE

CAPACITY :	
Zinc Sulphate 33%	*: 10 MT Per Day*
Zinc Sulphate 21%	*: 10 MT Per Day*
Zinc Sulphate 12% Soln.	*: 10 MT Per Day*
Plant & Machinery	**: ₹ 150 Lakhs**
Cost of Project	**: ₹ 801 Lakhs**
Rate of Return	**: 26%**
Break Even Point	**: 68%**

Profitable Business of Magnesium Sulphate

Magnesium sulphate is an inorganic salt with the formula MgSO4(H2O) x where 0≤x≤7. It is often encountered as the heptahydrate sulphate mineral epsomite (MgSO4·7H2O), commonly known as Epsom salt, is a mineral. It works by replacing magnesium in the body and increasing water in the intestines. Magnesium sulphate can be used orally as a laxative to relieve occasional constipation, and to treat low levels of magnesium, the majority was used in agriculture. Not all external uses for magnesium sulphate have been approved by the FDA.

Magnesium Sulphate is a chemical compound which is a mixture of magnesium, oxygen, and sulphur. Magnesium sulphate often faced as sulphate mineral & epsomite which are commonly known as Epsom Salt.

Magnesium Sulfate Market is to reach $1,233.3 million by 2026, after growing at a CAGR of 5.1% during 2021-2026. The growing need to achieve high agricultural yields coupled with the substantial growth of the worldwide agricultural industry is expected to be the main driver of demand growth in the years ahead. Furthermore, increasing use of magnesium sulfate in the personal care & cosmetics sector to formulate a range of important personal care items, including hair products, skincare products, sun-tan products and skin fresheners will create new opportunities for the growth of the global magnesium sulfate industry.

PROJECT COST ESTIMATE

CAPACITY	
Magnesium Sulphate	**: 72 MT Per Day**
Plant & Machinery	**: ₹ 2.56 Cr**
Cost of Project	**: ₹ 9 Cr**
Rate of Return	**: 29%**
Break Even Point	**: 58%**

Production of Crumb Rubber Powder from Waste Tyres

Crumb rubber is a term usually applied to recycled rubber from automotive and truck scrap tires. There are two major technologies for producing crumb rubber – ambient mechanical grinding and cryogenic grinding. Of the two processes, cryogenic process is more expensive but it produces smoother and smaller crumbs.

Waste tyre recycling technology is very cost effective and performs 100% wastage tyre recycling (No churn left after the process). In this process no chemical ingredients are used, therefore it is environment friendly. Raw material (scrap tyre) is cheap and easily available, Generate economically valuable products out of waste tyres and products have good market value and demand. Also each recycled ton of tyres preserves 10 tons of carbon dioxide (CO_2) that is a major greenhouse gas.

Features of Tire Recycling Plant:

1. Compact structure, small floor area, easy maintenance.
2. Low energy consumption, low operating cost.
3. Easy operation, stable performance.
4. Large capacity, high working efficiency.
5. High automatic control, reducing labor cost.
6. Long service life, low rate of breakdown.
7. Eco-friendly. No sewage and waste gas discharge.

PROJECT COST ESTIMATE

CAPACITY:

Crumb Rubber Powder	*: 24 MT Per Day*
By Product Steel Wire	*: 4.8 MT Per Day*
Plant & Machinery	: ₹ 115 Lakhs
Cost of Project	: ₹ 426 Lakhs
Rate of Return	: 28%
Break Even Point	: 66%

There is a rapid market increase of rubber powder in India. Demand of rubber powder in India is increased by 5%-8%. There is fair scope of this product. Every year over 1.6 billion new tires are generated and around 1 billion of waste tires are generated. However, the recycling industry processed only 100 million tires every year. The tire is extensively designed with several complex processes which makes it indestructible in nature and creates difficulty in the recycling of tires.

Furthermore, the growing implementation of crumb rubber generated from scrap tires is supporting the growth of the tire recycling market. In 2016, over 30% of crumb rubber used on sports fields and 25% of crumb rubber used as playground surfacing which is expected to create a significant disruption of the tire recycling market. Application of rubberized asphalt for the construction of pavements is also generating a pool of opportunities for tire recyclers and is expected to fuel the growth of the tire recycling market in the near future.

Start Manufacturing of Aluminium Ingots from Aluminium Scrap

Aluminum, is a light weight, silver-white, metallic element that makes up approximately 7 per cent of the earth's crust. It weighs about one third as much as steel (7480- 8000 Kg/ cubic meter) or copper (8930 Kg/cubic meter). Aluminium is malleable, ductile, and easily casted and has excellent corrosion resistance and durability. It is mined in the form of bauxite ore and exists primarily in combination with oxygen as alumina. India has nearly 10 per cent of the world's bauxite reserves and a growing aluminium sector that leverages this. Demand in the domestic market is expected to grow by 8-10 per cent. By 2020, India is expected to have an installed aluminium capacity of 1.7 to 2 million tones per annum.

Ingots are very large casting products, greater in size and shape than blooms, billets and slabs. Ingot generally has rectangular/square cross section, but it is not necessary that it should be uniform throughout its length. (Ingot may have variable cross section.)

India's share in world aluminium market is estimated at around 3%. India ranks fifth in bauxite production after Australia (62 mntonnes), Guinea (17.50 mntonnes), Brazil (16.20 mntonnes) and China (10.75 mntonnes). With a total output of 9.25 mntonnes, the country contributes about 6% of the world's total production of 159 mntonnes, India holds the fifth position in reserves base and is ahead of China with 2300 mntonnes. India ranked seventh in alumina production with a total output of 3 mntonnes, a share of nearly 5% of the global production of 61 mntonnes.

Aluminium has a wide range of applications, from aircraft building to packaging, a major consumer being the electrical industry. The two sectors, electricity and transportation, account for more than half of the total off take. The key consumer industries in India are power, transportation, consumer durables, packaging and construction. Of this, power is the biggest consumer (about 44% of total) followed by infrastructure (17%) and transportation (about 10% to 12%).

The aluminium industry in India is on the verge of witnessing a major leap in consumption over the next five years. Major producers are adding significant capacities and investing in new technologies to add more value to their downstream product portfolios. This, they are doing, in order to cash in on the increasing demand primarily in the building and construction sector followed by transportation (metro and high-speed railway coaches), electrical, electronic consumer durables and next-gen applications like solar reflectors. Defense is another sector where aluminium is being used for making naval ships and surveillance drones.

PROJECT COST ESTIMATE

CAPACITY:

Aluminium Alloy Ingots	*: 14 MT Per Day*
Aluminium Scrap	*: 0.23 MT Per Day*
Plant & Machinery	: ₹ 7 Cr
Cost of Project	: ₹ 33.15 Cr

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• The Complete Technology Book on Detergents (2nd Rev. Edn.)	1100/- 125
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• Handbook on Tall Oil Rosin Production, Processing and Utilization	1575/- 150
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• The Complete Book on Cold Storage, Cold Chain & Warehouse (with Controlled Atmosphere Storage & Rural Godowns) 6th Rev.Edn.	1750/- 150
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• Handbook on Production, Recycling of Lithium Ion and Lead-Acid Batteries (with Manufacturing Process, Machinery Equipment Details & Plant Layout) (2nd Rev. Edn.)	2999/- 250
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• Solar PV Power and Solar Products Handbook (Solar Energy, Solar Lighting, Solar Power Plant, Solar Panel Solar Pump, Solar Photovoltaic Cell, Solar Inverter, Solar Thermal Power Plant, Solar Farm, Solar Cell Modules with Manufacturing Process, Equipment Details, Plant Layout & Process Flow Chart)	2275/- 200
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• Handbook on Electric Vehicles Manufacturing (E- Car, Electric Bicycle, E- Scooter, E-Motorcycle, Electric Rickshaw, E- Bus, Electric Truck with Assembly Process Machinery Equipments & Layout) 2nd Rev. Edition	3795/- 250

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NAME OF BOOKS	₹ / US$
ELECTRICAL CABLE, WIRE AND WIRE PRODUCTS	
• Manufacture of Electrical Cables, Wire and Wire Products Handbook (Copper Wire, Barbed Wire, Spring, Wire Nail, Wire Mesh, Fiber-Optic Cable, PVC Wire and Cable, Aluminum Wire, Steel Wire Rope, Galvanised Wire, Coaxial Cable, Litang Cable LAN/Ethernet Cable, Power Cord Cable, Submersible Cable, XLPE Cable with Machinery Equipment Details & Factory Layout)	2575/- 225
ALCOHOLIC, NON-ALCOHOLIC, BEVERAGES, WINE & INDUSTRIAL ALCOHOL	
• The Complete Technology Book on Alcoholic and Non- Alcoholic Beverages (Fruit Juices, Sugarcane Juice, Whisky, Beer, Microbrewery, Rum and Wine) 2nd Revised Edition	2275/- 200
• The Complete Book on Wine Production	2275/- 200
• Industrial Alcohol Technology Handbook	1675/- 150
• Manufacture of Food & Beverages (2nd Edn.) #	1895/- 150

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Lucrative Business Ideas for Startup

NPK Fertilizer & Calcium Ammonium Nitrate

Fertilizers are used daily by farmers and families to help crops and gardens grow. Whether for a small garden of flowers and plants, or a large farm with thousands of acres of crops, a wide range of fertilizers have been developed to help different crops grow in different soil and weather conditions.

Chemical ingredients help create fertilizers that promote plant growth and are cost effective, too. Commercial and consumer fertilizers are strictly regulated by both individual states and the government to ensure that they are safe for the people who use them, people nearby, and the surrounding environment.

The India Fertilizer Market is a consolidated market with major players such as Coromandel International Limited, Indian Farmers Fertilizer Cooperative (IFFCO), Fertilizers and Chemicals Travancore (FACT), Deepak Fertilizers Limited and Chambal Fertilizers Limited, among others. The market is fragmented with a mix of government-owned and co-operatives garnering a high market share in the straight and complex fertilizer space and private companies engaged in a high degree of product innovation to tap the non-subsidy space.

The NPK grade with the highest count in the new CRU fertilizer grade database is 15-15-15. As it dominates the other unique 1200 grades, it is unlikely to be challenged in 2020. Perhaps surprisingly, the second and third most offered grades from the database are NPK 18-18-18 and 20-20-20, both of which are water-soluble.

The popularity of water-soluble fertilizers was palpably noticeable in 2019 where, for instance, many major Chinese phosphate producers that we visited on a research visit expressed interest in increasing tMAP production or building tMAP capacity. Many producers have plans to build more soluble capacity. The rise in fruit and vegetable cultivation as consumers become more health-conscious helps drive the change to compound fertilizers. Micro-irrigated areas are increasing to keep up with horticultural demand. Soluble compounds are still growing in popularity, and we expect this trend to continue in 2020. This facilitates the development of new technologies and ensures a high quality product.

Few Indian major players are as under

Basant Agro Tech (India) Ltd.
Coromandel International Ltd
Deccan Sales Corpn. Ltd.
Deogiri Fertilisers Ltd.
Khushhal Fertiliser Ltd.
Madhuvan Chemicals & Fertilizer Ltd.
Premier Fertilisers Ltd.
Sikko Industries Ltd.

PROJECT COST ESTIMATE

CAPACITY:	
NPK Fertilizer (19-19-19)	*: 200 MT / Day*
Calcium Ammonium Nitrate	*: 200 MT / Day*
Plant & Machinery	: ₹ 1746 Lakhs
Cost of Project	: ₹ 5165 Lakhs
Rate of Return	: 26%
Break Even Point	: 50%

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

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SELECTED BUSINESS IDEAS FOR RIGHT INVESTMENT

EACH DETAILED PROJECT REPORT (BUSINESS PLAN) CONTAINS

BEGINNING : Project Introduction, Brief History of the Product, Properties, BIS (Bureau of Indian Standard) Specifications & Requirements, Uses & Applications.

MARKET SURVEY : Present Market Position, Expected Future Demand, Statistics of Imports & Exports, Export Prospect, Names and Addresses of Existing Units (Present Manufactures).

PLANT & MACHINERY : List of Plant & Machineries, Miscellaneous Items and Accessories, Instruments, Laboratory Equipments and Accessories, Plant Location, Electrification, Electric Load and Water, Maintenance, Suppliers/Manufacturers of Plant and Machineries.

RAW MATERIAL : List of Raw Materials, Properties of Raw Materials, Availability of Raw Materials, Required Quality of Raw Materials, Cost/Rates of Raw Materials.

MANUFACTURING TECHNIQUES : Formulae DetailedProcess of Manufacture, Flow Sheet Diagram.

PERSONNEL REQUIREMENTS : Requirement of Staff & Labour, Personnel Management, Skilled & Unskilled Labour.

LAND & BUILDING : Requirement of Land Area, Rates of the Land, Built up Area, Construction Schedule, Plant Layout.

FINANCIAL ASPECTS : Cost of Raw Materials, Cost of Land & Building, Cost of Plant & Machineries, Fixed Capital Investment, Working Capital, Project Cost, Capital Formation, Cost of Production, Profitability Analysis, Break Even Point, Cash Flow Statement for 5 to 10 Years, Depreciation Chart, Conclusion, Projected Balance Sheet, Land Man Ratio.

- **Prepared by highly qualified and experienced consultants and Market Research and Analyst Supported by a panel of experts and computerised data bank.**
- **Data provided are reliable and upto date collected from suppliers/ manufacturers, plant already commissioned in India.**
- **NPCS Reports are very economical and immediately available on demand where as commissioned Feasibility Studies are time consuming and costly.**

FOR ASSESSING MARKET POTENTIAL, INVESTMENT DECISION MAKING CORPORATE DIVERSIFICATION PLANNING ETC.

NPCS Engineers and Consultants have prepared Market Survey Cum Detailed Techno Economic Feasibility Report on the following products which are most viable and profitable.

Business Ideas: 2.5 - 3 Crore *(Plant and Machinery) :*

Selected Project Profiles for Entrepreneurs, Startups

- 3-chloropivaloyl Chloride
- 4 Star Hotel
- Nicotine from Tobacco Waste
- Active Zinc Oxide from Zinc Ash, Secondary Zinc Waste & EAF Dust
- Agricultural Warehouse with Cold Storage
- Aluminium Extrusion Plant
- Arabic Gum
- Automated Vehicle Scrapping and Recycling Unit
- Baker's Yeast
- Beer Plant
- Bentonite Processing
- Bicycle Manufacturing
- Biodegradable Plastic Bags from Corn Starch
- Calcium Bromide
- Catenary Wires and Conductors Used in Railway Electrification

- Chocolate
- Cold Storage (Shrimp & Agricultural Products)
- Dairy Farming & Dairy Products (Milk, Butter, Ghee & Paneer)
- Dairy Farming & Dairy Products (Pasteurised Milk & Curd)
- Dairy Farming (500 Cows)
- Disposable Nitrile Gloves (Nitrile Examination Hand Gloves)
- Electric PCC Poles
- Extraction of Essential Oil from Black Pepper
- Flexographic Printing
- Gold and Diamond Jewellery
- Grapes Packing for Exports with 100 MT Cold Storage
- Graphite Crucible
- Hexamethoxymethyl Melamine Resin (HMMM)
- Hot and Cold Fusion of Glass

- I.V. Fluids (BFS Technology)
- Industrial and Pharmaceutical Grade Starch from Cassava, Maize and Tacca Roots
- Lithium Ion Battery (Lifepo4) Business Plan
- Low Carbon Ferro Manganese (Medium Grade)
- Lucrative Business Plan for Calcium Sennosides from Senna Leaves Production
- Maize Starch and Its By Products
- Manufacturing Business of Blood Bags
- Gold and Diamond Jewellery
- Needles for Sewing and Embroidery Machine
- Oxygen Gas Plant (Medical Grade)
- Pet Polyester Acoustic Panel
- Phosphate Rich Organic Manure (PROM)
- Ply Board from Poplar & Eucalyptus Wooden Logs

Market Survey Cum Detailed Techno Economic Feasibility Report on all above Businesses are Available. Contact :

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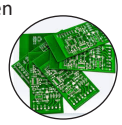
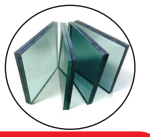
SELECTED BUSINESS IDEAS FOR RIGHT INVESTMENT

- Precipitated Silica from Rice Husk Ash
- Blood Collection Tubes (Vacutainer)
- Latex & Nitrile Gloves
- Soft Gelatin Capsules (Softgel Capsules)
- Magnesium Sulphate
- PVC/HDPE Pipes (Irrigation, Drinking Water, Agriculture and Sewerage)
- Red Oxide Primer from Mill Scale
- Roller Flour Mill with Packaging (Automatic Plant)
- Saline and Dextrose Fluid (IV Fluid) BFS Technology
- Sanitary Napkins

- Sesame Seed Hulling Plant
- Automated Vehicle Scrapping Unit
- Auto Brake Pad and Auto Brake Shoe
- Silicon Metal
- Skill Development Centre
- Sodium and Ammonium Molybdate
- Sodium Hydrosulphite Manufacturing Business
- Soft Gelatin Capsules
- Solar Panel
- Stable Bleaching Powder
- Bamboo Fiber & Yarn

- Active Pharmaceutical Ingredients
  • Metformin • Amoxicillin • Ibuprofen
  • Paracetamol
- Printed Circuit Board (PCBS)
- Mica Powder from Mica Deposits
- Ready Mix Plaster, Block Jointer, Tile Adhesive and M 20 Concrete (Micro Concrete)
- TMT Bars
- Toughened Glass
- Yeast from Molasses
- Zinc Sulphate Monohydrate (Agriculture & Food Grade)





Start Investing in Fastest Growing Industries

Fiber Optical Cables

A fiber cable is a structure for enclosing a fiber to enable it to maintain its performance for sufficient time in the operating environment in which it is required to work. One might envisage undemanding applications where a fiber with a simple coating might be perfectly adequate and would provide a high capacity cable of very small dimensions. However, cables more commonly have to operate in environments where a fiber with so little protection could not be expected to survive for long, even if it is possible to introduce the fiber into the environment without breakage. In general, then, we are concerned with a much sturdier structure.

The cable will be required to withstand the forces upon it during storage, installation, and operation. During storage or transit it may be subjected to considerable heat from solar radiation, to extreme cold, and to rain or very high humidity.

The global fiber optic cable market was valued at USD 7,578.1 million in 2019, and it is expected to reach USD 16,390.6 million by 2025, registering a CAGR of 14.5% during the period, 2020-2025. Increasing demand in FTTX and telecommunications industry and technological advancements are primarily responsible for the increased growth of the market.

Major telecommunication operators and government authorities have delayed the installation of fiber optic cables on account of the spread of the COVID-19 pandemic, leading to the postponement of testing services. COVID-19 will lead to a sharp decrease in wire and cable demand globally throughout 2020 owing to the reduction in fixed investments, industrial activities, and private consumption. The US, China, and Europe have announced delays in 5G rollouts, with optical fiber cabling demand is likely to fall in 2020. Hence, this is going to impact the installation of fiber optic cables, leading to a decrease in their demand across the world.

The market consumption over the last two years has been less than 6 Mn Km, Indian fiber manufacturing capacity is on a rise. Capacity for FOC (Fiber Optic Cable) manufacturing in India is approximately 8, 00,000 Cable KM. More global players are eyeing to setup their plants or have tie-ups in India. Thus India can domestically meet the upcoming requirements for National Optical Fiber Network.

By types, the fiber optic cable market is segmented into single-mode and multi-mode. Single-mode fiber networks use wave-division multiplexing (WDM) to transfer to increase the data traffic to be sent among the strand. Multi-mode cables use WDM to transfer data at differing speeds to certain various types of customers. Entrepreneurs who invest in this project will be successful.

PROJECT COST ESTIMATE

CAPACITY

Fiber Optical Cables	: 3,333.3 K. Meters/Day
Plant & Machinery	: ₹ 1183 Lakhs
Cost of Project	: ₹ 5070 Lakhs
Rate of Return	: 30%
Break Even Point	: 61%

Biodegradable Plastic Pellets

- Corn Starch Thermoplastic & Polyvinyl Alcohol
- PBAT & Corn Starch Thermoplastic
- PLA + PBAT + Corn Starch Thermoplastic
- PLA + PBAT + $CaCO_3$

Among the biodegradable polymers made from renewable resources, starch is probably the most renewable naturally biodegradable polymer source because it is versatile, cheap, and abundant. It shows compatibility with extrusion processes used in the manufacture of conventional films and in the presence of a plasticizer it produces a material with thermoplastic characteristics, known as thermoplastic starch (TPS). As a result, TPS is often blended with other polymers, such as poly (butylene adipate-co-terephthalate) (PBAT) and biodegradable aliphatic-aromatic copolyester, which combines biodegradability with other desirable physical properties.

PROJECT COST ESTIMATE

CAPACITY

Biodegradable Plastic Pellets	: 1,200,000 Kgs Per Annum
Plant & Machinery	: ₹ 128 Lakhs
Cost of Project	: ₹ 407 Lakhs
Rate of Return	: 29%
Break Even Point	: 48%

The massive use of synthetic plastics, in particular in the food packaging area, has a great environmental impact, and alternative more ecologic materials are being required. Poly(lactic) acid (PLA) and starch have been extensively studied as potential replacements for non-degradable petrochemical polymers on the basis of their availability, adequate food contact properties and competitive cost. Indeed, plastics represent the second most widely used material for food packaging applications, after paper and cardboard.

Steel Billets and TMT Steel Bars (Rebar) from Scrap Metal

Most of the steel generally in civil and allied work used is the plain carbon and mild steel and the largest portion of carbon steels used, has tensile strengths not greater than 36 to 40 t/in2. The carbon content in the steel predominantly governs the steel properties. 0.40% carbon steel is of great importance due to its being economical to meet general requirement and having reasonably high strength and other properties, like yield point, elongation and reduction percentages etc.

Steel products in the forms of strip coils, sheets, plates, wires, rods, bars & sections are mostly used in industrial products. Earlier wires and rods were manufactured by reducing ingots/ billets/bars in steel mills by heating and rolling of the stock. But, the modern advancements of technologies have given continuous casting of rods as an economical method. Steel scraps of melting grades are taken as the raw material. Either Electric Arc Furnaces (EAF) or Electric Induction Melting furnaces are commonly used for melting for a pollution-free operation.

The long steel market size is estimated to be USD 527.0 billion in 2020 and projected to reach USD 636.7 billion by 2025, at a CAGR of 3.9% from 2020 to 2025. Increasing construction and infrastructure activities, rising population levels, and industrialization are the major factors responsible for the growth of the long steel market. However, the recent outbreak of Covid-19 is expected to have a severe impact on the long steel market.

TMT steel bars refer to thermo mechanically treated bars. TMT steel bars are steel bars with enhanced strength and highly ductile and malleable in nature. They are widely used for earthquake resistant buildings and bridge construction projects. Companies operating in the global TMT steel bar market are adopting strategies such as mergers, acquisitions, and new product launches that maximize their market share. The rising global construction industry boosts the growth of the TMT steel bar market. Infrastructural development across the globe drives the growth of the TMT steel bar market. Various advantages of TMT steel bars over tensional bars contribute to the growth of the TMT steel bar market. The expansion of modern architecture propels the growth of the TMT steel bar market.

Furthermore, the growing demand for low-cost reinforcement bars stimulates the growth of the TMT steel bar market. On the flip side, technical constraints with respect to higher grade TMT bars hinder the growth of the TMT steel bar market. Moreover, technological innovations in the construction industry create novel opportunities for the growth of the TMT steel bar market. This facilitates the development of new technologies and ensures a high quality product.

PROJECT COST ESTIMATE

CAPACITY:

Steel Billets (Size 100mm x 100mm to 180mm x 180 mm Sections of Max. 6 meter length)	*: 333.3 MT / Day*
TMT Steel Bars (Rebar) Size DB 8 to 40 mm	*: 333.3 MT / Day*
Plant & Machinery	**: ₹ 8427 Lakhs**
Cost of Project	**: ₹ 16747 Lakhs**
Rate of Return	**: 29%**
Break Even Point	**: 47%**

Maize and It's By Products

(Maize Starch, Sorbitol, Liquid Glucose, Dextrose Monohydrate, Dextrose Anhydrous, Gluten and Maltodextrin)

Maize also known as corn is a cereal grain. Maize has become a staple food in many parts of the world, with total production surpassing that of wheat or rice. However, not all of this maize is consumed directly by humans. Some of the maize production is used for corn ethanol, animal feed and other maize products, such as corn starch and corn syrup. Maize is one of the most versatile emerging crop shaving wider adaptability under varied agro-climatic conditions. Globally, maize is known as queen of cereals because it has the highest genetic yield potential among the cereals.

Maize is one of the staple foods in India. The annual maize production in India is around 21 million tonne with the highest maize cultivation in Karnataka, Andhra Pradesh and Rajasthan. India is one of the largest cultivators of maize in the world, and it is a crop suitable for all the growing seasons in nearly every agro-climatic zone within the country's borders. India has seen a dramatic increase in maize cultivation over the past few years, which explains it's pre-eminence as a starch source among processors.

Maize is cultivated on nearly 178 million Ha globally in about 160 countries and contributes ~50% (1,170 million MT) to the global grain production. In India, maize constitutes ~9% of the total volume of cereals produced and is the third most important food grain after rice (~42%) and wheat (~38%). Maize is important to India as 15 million Indian farmers are engaged in Maize cultivation. Having realised the potential of Maize in generating better income to farmers while providing gainful employment, Maize qualifies as a potential crop for doubling farmer's income. There is a tremendous potential of growth of the Maize value chain in the country.

This is mainly because the area under kharif maize (2016-17) saw a jump to 84.26 lakh ha. There is a bearish trend in the global maize market due to over production in key maize growing countries led by US. Given the global scenario which hints a surplus production this year and assuming the normal kharif maize area, the Agricultural Market Intelligence Centre projected the prices of maize at kharif harvest period of 2017-18.

PROJECT COST ESTIMATE

CAPACITY:

Maize Starch	*: 50 MT Per Day*
Sorbitol	*: 8.5 MT Per Day*
Liquid Glucose	*: 8.5 MT Per Day*
Dextrose Monohydrate	*: 8.5 MT Per Day*
Dextrose Anhydrous	*: 4.2 MT Per Day*
Gluten	*: 8 MT Per Day*
Maltodextrin	*: 4.28 MT Per Day*
Germ	*: 9.5 MT Per Day*
Fiber	*: 14.5 MT Per Day*
Plant & Machinery	**: ₹ 4670 Lakhs**
Cost of Project	**: ₹ 6631 Lakhs**
Rate of Return	**: 26%**
Break Even Point	**: 44%**

Growing Business of Animal Feed

(Cattle, Poultry Broiler, Pig & Fish Feed)

Animal feed is food given to domestic animals, especially livestock, in the course of animal husbandry. There are two basic types: fodder and forage. Used alone, the word feed more often refers to fodder. Animal feed is an important input to animal agriculture, and is frequently the main cost of the raising animals. Farms typically try to reduce cost for this food, by growing their own, grazing animals, or supplementing expensive feeds with substitutes, such as food waste like spent grain from beer brewing.

Animal wellbeing is highly dependent on feed that reflects a well-balanced nutrition. Some modern agricultural practices, such as fattening cows on grains or in feed lots, have detrimental effects on the environment and animals. For example, increased corn or other grain in feed for cows, makes their micro biomes more acidic weakening their immune systems and making cows a more likely vector for E.coli. While other feeding practices can improve animal impacts.

The animal feed market is projected to grow at a CAGR of 4.90% to reach US$460.322 billion by 2026, from US$345.434 billion in 2020. Animal feeds are referred to as those products which are responsible for improving animals' health. The feed is given in various doses depending on the animal. Rapid urbanization and growing consumption of meat and other end products such as milk and eggs across different regions are driving the animal feed market growth opportunities during the forecast period. The feed helps in enhancing the animal's abilities by providing enriched nutrients along with the feedstuff, accelerating growth and weight gain and developing immunity.

PROJECT COST ESTIMATE

CAPACITY :

Cattle Feed	*: 33.6 MT Per Day*
Poultry Broiler Feed	*: 16.8 MT Per Day*
Fish Feed	*: 2.8 MT Per Day*
Pig Feed	*: 2.8 MT Per Day*
Plant & Machinery	: ₹ 160 Lakhs
Cost of Project	: ₹ 1488 Lakhs
Rate of Return	: 24%
Break Even Point	: 48%

WPC Profile For Building Materials

Like Door and Window Frame and Shutters

WPCs are composites containing a wood component in particle form (wood particles/wood flour) and a polymer matrix. They are used in a variety of structural and non-structural applications ranging from component and product prototyping to outdoor decking. Wood plastic composites (WPCs) are roughly 50:50 mixtures of thermoplastic polymers and small wood particles. The wood and thermoplastics are usually compounded above the melting temperature of the thermoplastic polymers and then further processed to make various WPC products.

The wood-plastic composites market is projected to reach US$ 2.6 bn in 2012. Analysts anticipate the market to expand at a CAGR of 10.80% during the period from 2013 to 2019 and attain a value USD 5.84 Billion by 2021, at a CAGR of 12.4% from 2016 to 2021. Market is poised to grow at a CAGR of around 13.2% over the next decade to reach approximately $9.7 billion by 2025. This facilitates the development of new technologies and ensures a high quality product.

PROJECT COST ESTIMATE

CAPACITY

WPC Profile for Building Materials	: 9600 Kgs/Day
Plant & Machinery	: ₹ 155 Lakhs
Cost of Project	: ₹ 737 Lakhs
Rate of Return	: 28%
Break Even Point	: 64%

Plastic Waste Recycling Plant

Plastics are made from limited resources such as petroleum, and huge advances are being made in the development of technologies to recycle plastic waste among other resources. Mechanical recycling methods to make plastic products and feedstock recycling methods that use plastic as a raw material in the chemical industry have been widely adopted, and awareness has also grown recently of the importance of Thermal recycling as a means of using plastics as an energy source to conserve petroleum resources. Recycling plastics has many benefit, it contributes to energy savings and the reduction of greenhouse gas emissions. It also saves non-renewable sources like oil and gas. Bottles made of polyethylene terephthalate (PET, sometimes PETE) can be "recycled" to reuse the material out of which they are made and to reduce the amount of waste going into landfills.

The Indian industry has created enough capacity to export polymers in substantial quantities. India exported close to 17% of its polymer production. The global plastic recycling market has been gaining a steady momentum over the past few years due to the growing awareness about carbon emissions and the need to reduce them. Citing this reason, the report states that the global plastic recycling market, which was valued at US$31.5 bn in 2015 is expected to reach a figure of US$56.8 bn by 2024. During the forecast period of 2016 and 2024, the global market is expected to progress at a CAGR of 6.9%. As a whole any entrepreneur can venture in this project without risk and earn profit.

PROJECT COST ESTIMATE

CAPACITY :

Plastic Granules	*: 2400 Kgs/Day*
PET Granules	*: 2400 Kgs/Day*
Plant & Machinery	: ₹ 97 Lakhs
Cost of Project	: ₹ 238 Lakhs
Rate of Return	: 27%
Break Even Point	: 55%

E-Waste & Lithium Battery Recycling Plant

Electronic Waste – or e-waste – is the term used to describe old, end-of-life electronic appliances such as computers, laptops, TVs, ØVD players, mobile phones, mp3 players etc. Technically, electronic "waste" is the component which is dumped or disposed or discarded rather than recycled, including residue from reuse and recycling operations.

Recycling of used lithium batteries has primarily focused on extracting active metal cobalt (Co) and lithium (Li).

According to E-Waste Market in India 2015-2019 research, the need to prevent biological hazards is one of the major trends upcoming in this market. Indians become richer and spend more on electronic items and appliances, computer equipment accounts for almost 70% of e-waste material, followed by telecommunication equipment (12%), electrical equipment (8%) and medical equipment (7%). Other equipment, including household account for the remaining 4%.As a whole any entrepreneur can venture in this project without risk and earn profit.

PROJECT COST ESTIMATE

CAPACITY

E-Waste & Lithium Battery Recycling Plant	: 20 MT/Day
Plant & Machinery	: ₹ 225 Lakhs
Cost of Project	: ₹ 540 Lakhs
Rate of Return	: 26%
Break Even Point	: 59%

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