Detailed Project Report on ***"Commercial Manufacturing of Liquid Bio-Fertilizers & Bio-Pesticides."***

Client: ABC Bio-Solutions

Location: Ahmednagar, Maharashtra

Background: This project aims to provide sustainable alternatives to chemical fertilizers for the sugarcane and pomegranate belt. The facility will produce microbial-based soil conditioners, Phosphate Rich Organic Manure (PROM), and neem-based pest repellents to enhance soil fertility and promote eco-friendly pest management.

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1.0 Executive Summary

Project Title: Commercial Manufacturing of Liquid Bio-Fertilizers & Bio-Pesticides

Promoter: ABC Bio-Solutions

Promoter Name: Mrs. XYZ

Project Location: Ahmednagar, Maharashtra

Project Cost: ₹2.10 Crores

1.1 Project Background

Agricultural productivity in the Ahmednagar region is being adversely affected due to continuous use of chemical fertilizers, over-extraction of groundwater, and rising soil salinity. Crops such as sugarcane and pomegranate, which are highly nutrient-demanding, have shown declining yields and deteriorating soil health over the past decade.

Farmers are increasingly seeking sustainable, eco-friendly solutions to restore soil fertility, improve nutrient availability, and reduce dependency on chemical inputs. Bio-fertilizers and bio-pesticides are microbial-based, natural alternatives that not only enhance plant growth but also improve soil structure and microbial diversity.

The proposed project intends to bridge this gap by establishing a commercial facility that produces:

- Liquid bio-fertilizers (Rhizobium, Azotobacter, and other beneficial strains)
- Phosphate Rich Organic Manure (PROM) for soil enrichment
- Neem-based bio-pesticides for eco-friendly pest management

This initiative aligns with the National Mission on Sustainable Agriculture (NMSA), which promotes organic inputs and soil health improvement, making the project eligible for government subsidies and support.

1.2 Project Objectives

The main objectives of the project are:

1. To manufacture high-quality liquid bio-fertilizers and bio-pesticides suitable for sugarcane and pomegranate cultivation.
2. To provide sustainable alternatives to chemical fertilizers, reducing soil degradation and salinity.
3. To establish a robust B2B dealer network to supply farmers across Ahmednagar and neighboring districts.

4. To ensure regulatory compliance with CIB&RC (for bio-pesticides) and FCO (for bio-fertilizers).
5. To contribute to employment generation and rural economic development in the region.

1.3 Project Components

1.3.1 Fermentation Unit

- 2 bioreactors with 500-liter capacity each.
- Culturing of beneficial bacteria such as Rhizobium (for nitrogen fixation) and Azotobacter (for soil fertility improvement).
- Automated control of temperature, pH, and aeration to ensure high-quality microbial cultures.

1.3.2 Solid Mixing Line

- Industrial mixers for PROM and vermicompost enrichment.
- Ensures uniform nutrient content and microbial viability in the solid fertilizer.

1.3.3 Bottling & Packaging Plant

- Automated filling line for 1L and 5L bottles.
- Includes labeling, capping, and sealing to maintain product quality.
- Designed for scalability to meet increasing market demand.

1.3.4 R&D Laboratory

- Equipped for microbial quality testing, strain identification, and bio-pesticide efficacy trials.
- Ensures compliance with CIB&RC and FCO standards.

1.4 Production Capacity

Product	Monthly Production
Liquid Bio-Fertilizers	50,000 L
PROM & Vermicompost	20 tonnes
Neem-based Bio-Pesticides	10,000 L

This capacity is sufficient to meet regional demand while maintaining a buffer for market expansion.

1.5 Market Analysis

- Target Market: B2B dealers supplying to farmers in sugarcane and pomegranate belts.
- Market Size: Ahmednagar has approximately 50,000 hectares under target crops, with an annual fertilizer requirement of ~2,500-3,000 tonnes of bio-inputs.
- Growth Potential: Maharashtra's bio-fertilizer market is growing at ~15-20% annually. Rising awareness, government incentives, and soil degradation issues drive adoption.
- Sales Strategy: Focus on dealer tie-ups rather than direct-to-farmer sales to ensure reach, regular supply, and after-sales support.

1.6 Regulatory & Compliance Framework

1. CIB&RC Registration – Mandatory for manufacturing and sale of bio-pesticides.
2. FCO Licensing – Required for production of bio-fertilizers like Rhizobium cultures and PROM.
3. Environmental Compliance – Wastewater management, effluent treatment, and adherence to local pollution norms.
4. Subsidy Eligibility – Capital subsidy under NMSA, calculated as a percentage of fixed asset cost.

1.7 Financial Overview

- Total Project Cost: ₹2.10 Crores
- Funding Pattern:
    - Promoter's Equity: 40% (₹0.84 Cr)
    - Bank Loan: 50% (₹1.05 Cr)
    - NMSA Subsidy: 10% (₹0.21 Cr)
- Expected Revenue (Year 1): ₹1.50 Crores
- Break-even Point: ~3 years
- Return on Investment (ROI): ~25% over 5 years

1.8 Environmental & Social Benefits

- Reduces chemical fertilizer dependency, mitigating soil salinity and degradation.
- Promotes eco-friendly farming practices, improving soil microbial diversity.

- Generates direct and indirect employment in production, logistics, and sales.
- Supports regional rural economy through dealer networks and farmer outreach.

1.9 Conclusion

The proposed Liquid Bio-Fertilizer & Bio-Pesticide Manufacturing Project is technically feasible, financially viable, and environmentally sustainable. With a strategic location in Ahmednagar, modern production facilities, quality control measures, and a structured market approach, the project will:

- Address soil fertility and pest management challenges for sugarcane and pomegranate farmers.
- Offer a profitable business opportunity with strong growth potential.
- Contribute to sustainable agriculture and rural development in Maharashtra.

2.0 Introduction

2.1 Background of the Promoter

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