



Inclusive and Sustainable Industrialization in Agro & Food Sectors



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UNIDO at a Glance

- Specialized agency of the United Nations that supports industrialization in its developing country member states as contribution to the realization of the 2030 Sustainable Development Goals (SDGs)



**SUSTAINABLE
DEVELOPMENT GOALS**

UNIDO in India



- Current portfolio of 17 ongoing projects with total value of ~ USD83 million
 - Chemicals and Chemicals Waste (3)
 - Energy Efficiency, Innovation and Renewables (7)
 - Inclusive Economic Development (5)
 - South-South Cooperation (1)
 - Centre (1)
- Diversity of sectors
 - Textile, foundry, ceramics, dairy, automotive, hospitals, cement, leather, etc
 - Target MSME sector, 20+ clusters
- Geographic coverage
 - Gujarat, Karnataka, Maharashtra, Odisha, Punjab, Rajasthan, Sikkim, Telangana, Tamil Nadu, Uttar Pradesh, West Bengal
 - Upcoming sustainable cities: Bhopal, Jaipur, Vijayawada, Guntur and Mysore



Ongoing Projects (18)

- > GC1 Creating Shared Prosperity (2)
- > GC2 Advancing Economic Competitiveness (4)
- > GC3 Safeguarding the Environment (12)

103029 - Promoting Energy Efficiency...

104044 - Environmentally Sound Man...

104088 - Regional network on persist...

104160 - Environmentally Sound Man...

120095 - Organic waste streams for i...

120182 - Promoting ultra low-head m...

120262 - Promoting Market Transfor...

120345 - GEF UNIDO Cleantech Progr...

Promoting Energy Efficiency and Renewable Energy in Selected Micro, Small and Medium Enterprises (MSME) Clusters in Indi

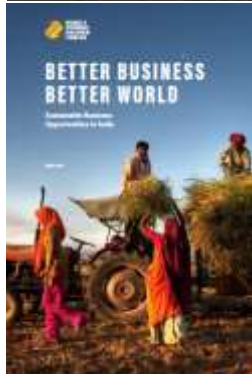
Overview

Project ID	103029
Thematic Priority	GC3 Safeguarding the Environment
Location	India
Project Manager	Sanjaya SHRESTHA
Donors	<ul style="list-style-type: none">Global Environment FacilityRegular Programme Of Technical Cooperation
Funds	<ul style="list-style-type: none">Operational BudgetGlobal Environment FacilityRegular Programme of Technical Cooperati



The aim of the project is to develop and promote a market environment for introducing energy efficiencies and enhanced use of RE technologies in process applications in 12 selected energy-intensive MSME clusters in India with expansion to more clusters later, in order to improve the productivity and competitiveness of units as well as to reduce overall carbon emissions and improve the local environment. The project w... [More](#)

<https://open.unido.org/projects/IN>



- Achieving the Global Goals creates at least US\$12 trillion in opportunities by 2030, just in four major economic systems
- Food and Agriculture accounts for US\$ 2.3 trillion



- In Asia, these four systems create at least US\$5 trillion in opportunities
- Pursuing those opportunities could create almost 230 million new jobs in the region by 2030, equivalent to 12 percent of the Asian labour force
- The SDGs offer a compelling growth strategy, opening up and economic prize of at least US\$1 trillion by 2030 for the Indian private sector
- Over 73 million new jobs could be created in India by 2030.
- Food and Agriculture alone worth more than USD290 billion with job potential of 22 million new jobs



Build resilient infrastructure,
promote inclusive and sustainable
industrialization and foster
innovation



Enhancing the compliance, productive capacities and competitiveness of the cinnamon value chain in Sri Lanka



- Developed and published Good Manufacturing Practices for cinnamon processing
- Developed training materials and established a cinnamon training academy
- Provided standardization of skill profiles for cinnamon technicians
- Developed brand based on geographic identification for premium exports – Pure Ceylon Cinnamon - with estimated value of USD1 billion



Private sector

Public sector



Technical expertise,
Hosting,
Budget for
infrastructure: land



Budget for
infrastructure: building



Competency-
based training &
its accreditation



Local
enterprises

Technical
expertise and
know-how for
training
development

Service and training
center

Marketing
and export
data



Strategic
corporate
reports

Procuring
equipment,
supporting its
initial operation



PRAN SIDA UNIDO Partnership: Dairy Hub and Academy Development in Bangladesh

- Increase small holder farmer income through milk production
 - Establishment of 5 dairy hubs for milk collection
 - Development of Dairy Academy for good practices training
 - Extension to farming communities through lead farmers



PRAN SIDA UNIDO Partnership: Dairy Hub and Academy Development in Bangladesh

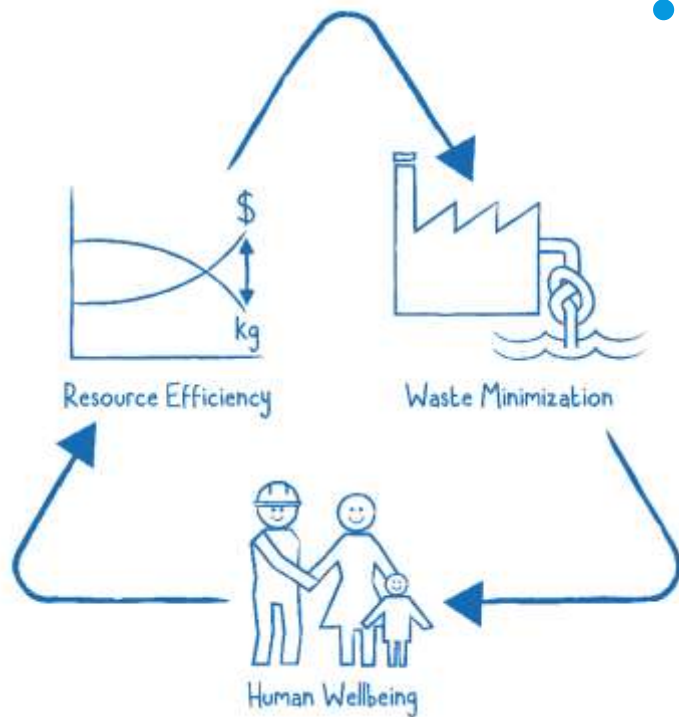
- Interim achievements (2016)
 - Increase in milk production per cow by 37%
 - Increase of average farm monthly income by 33%
 - 112 new farms with dairy as main income
 - Engagement of 438 females in farming and milk processing
 - Improved raw milk quality



Energy and Environment

• Resource Efficient and Cleaner Production

- Finding and implementing ways to
 - Improve productive use of materials, water and energy
 - Reduce the generation of waste, effluent and emissions
 - Improve well being of employees, consumers and community



Virtuous cycle

Resource Efficient and Cleaner Production, Gujarat Dairy Sector	Investment (US\$)	Annual Savings (US\$)
• Replace diesel with piped natural gas in sweets section	25,000	15,360
• Replace pneumatic pouch packing with mechanical packing	12,000	26,130
• Online oxygen measurement of flue gas for boiler optimization	11,000	7,180
• Automatic boiler blow-down system	5,000	7,040
• Level controller for boiler make up water addition	500	2,260
• Variable frequency drive for air compressor	2,500	3,600
• Using Reverse Osmosis water for cooling water	2,800	3,320
• Heat recovery from can washer waste water	8,000	37,920
• Installation of desuperheater on refrigerator compressor	3,000	19,580
• Insulation of steam pipes	n/a	n/a
• Installation of crate washer	n/a	n/a
• Replace under-loaded motor with smaller capacity motor	n/a	3,920
• Production of whey powder as by-product	n/a	n/a
• Reducing pasteurization temperature by 2°C	0	1,880
• Condensate recovery from heat exchanger for CIP system	500	2,240
• Fat recovery from pre-separation during Ghee production	0	23,130
• Recovery and reuse of ice-cream mixture	0	4,970
• Anaerobic digester for whey waste water treatment	14,000	39,420
• Vermicomposting of dairy waste	2,500	730
• Replace mercury with CFL lamps	230	990
• Reuse of treated effluent for crate washing and/or gardening	0	300
• Installation of desuperheater on ammonia compressor	16,340	15,000
• Replace furnace oil with natural gas for boiler and air heaters	120,000	331,500
• Solar street lights	51,000	3,650
• Replace single stage with two stage-compressor	16,000	2,450



RECP@ Chea Hap Rice Mill

N°	Measures Implemented	Invest. (US\$)
1	Substitute DO based technology with grid electricity	50,000
2	Installation of color sorting machine for export quality rice.	120,000
3	Installation of paddy rice dryer using hot air from direct rice husk burning to improve the quality & yield of milled rice.	100,000
4	New shed for dryer and paddy storage.	180,000
TOTAL INVESTMENT		450,000



N°	Items	Value	% share
1	Total EE options identified	14	
2	EE options selected for feasibility analysis	6	43%
3	EE Solutions implemented	4	71%
4	Savings in energy resource cons./year - Diesel oil (US\$) - Electricity - Revenue from improved yield and Quality (US\$)	73,200 4,800 168,000	24% 33% 6%
5	GHG emissions reduction (Ton CO ₂ eq/year)	191	25%
6	Total savings reported	246,000	
7	Investments in US\$	450,000	for back 2 years



Inclusive and Sustainable Industrialization in Food and Agro-Sectors

- Comprehensive interventions to
 - Increase small holder/farmer jobs and incomes → *poverty eradication*
 - Reduce Post Harvest Losses → *sustainable consumption and production*
 - Improve productivity → *competitiveness and economic growth*
 - Improve food quality → *health and nutrition*
 - Improve occupational health and safety → *decent jobs*



Thank you

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