



E-Newsletter



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Coordination in the Development of the Indian Leather Industry

The leather industry along with the rest of the economy has been in the throes of a push-pull market scenario. While government wants to get industry and the economy moving, it has not been able to help industry in the manner in which this assistance can be best utilized. Ideally, the avenue that is most sustainable is to help private industry help themselves.

For instance, there are departments of the government dealing with industry, human resources, energy, environment, safety & health, etc.

Various subsidies are given to industry to enable them to comply with environmental norms, improve infrastructure, quality, productivity and many other aspects.

There are various schemes with differing rates of subsidy and conditions. For instance, if a company wishes to apply renewable photovoltaic solar energy, the investment in facilities and equipment for a unit up to 100 kW is eligible for 30% subsidy. This subsidy we understand, is however not available for larger capacities of PV plant. On the other hand, there is no subsidy for wind energy, which is also a form a renewable energy.

For new effluent treatment plants in the leather industry, the subsidy from the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry is 50 %. The implementing agency for this is the Council for Leather Exports.

The Integrated Development of the Leather Sector (IDLS) Scheme, implemented by the CLRI, provides a subsidy of 30 % on new plant and machinery for the leather sector for MSME's and 20% only if the industry falls in the 'large' category.

The intention of the industry is to reduce product cost and improve competitiveness. Costs that must be reduced include treatment cost of effluent generated in processing.

Energy costs at a CETP (which make for about 50% of the total treatment cost) could be reduced by **process improvement**, as by switching the aeration system from fixed to diffused aeration. This would qualify for 50% subsidy.

On the contrary, a 1MW solar photovoltaic system installed in a CETP to reduce energy costs during daylight hours, which is an attempt to achieve a cost reduction as above would not qualify for a subsidy. This latter solution would reduce dependence on EB power and diesel generating sets, there might be an overall reduction in treatment cost, as also an improvement in treatment quality.

Industry needs to have clear information on the matter. Private companies have to analyse the quantum of subsidy available, decide which category the application would fall in (whether infrastructure, pollution control, energy or other), which organization to approach considering the quantum of subsidy and speed of disbursement. A single window advisory system for industry would ease matters.

For new projects such as Common Facility Centres where expensive machinery may be installed for job work by cluster members, subsidy is 75% total project cost apart from land. This is available from the Department of Policy & Promotion (DIPP), which has the Council for Leather Exports as the project implementation agency.

A capital-linked subsidy scheme (from Ministry of MSME) gives 15 % Subsidy for new equipment. Few go through this because of the lower level of subsidy.

Tanning machinery with reduced polluting capacity and optimised operating characteristics must be encouraged. These may use less chemicals, less energy and less water, or have other advantages.

There are costs incurred by leather firms going in for certification with leather working group (LWG) etc., which contribute to marketing of production.

[The views expressed are the author's own and are not judgements on policies of the Government, for which there may be other reasons]



NEXT ISSUE

- Benchmarking of operations
- Water, Chemical and Yield improvement



Material Handling in Tanneries

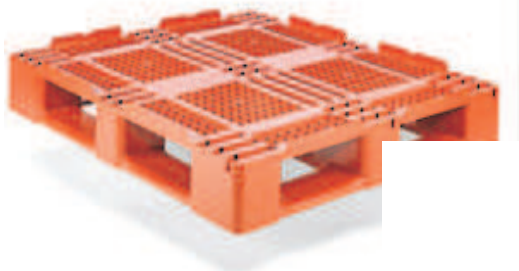
Mathew Alexander, M.Tech

Unit load handling is a prime necessity in handling of material in tanneries. Loads include raw or semi-finished leather, finished leather, leather products, chemicals, wood fuel, etc.

In between operations, trolleys and 'horses' are also utilized. These loads are best unitized on pallets. Palletization must be undertaken within the plant to modularise handling equipment, units and storage spaces to facilitate transport or storage.

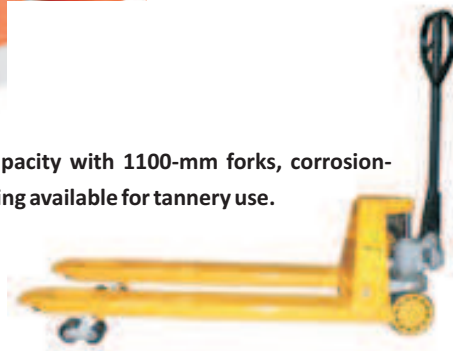
Loaded pallets of standard sizes are stuffed into containers of standard size 8' x 8' x 20' or 8' x 8' x 40'. Stuffing of containers is very easily affected by unitizing loads on pallets using forklift trucks.

The following images show equipment and good practices



Standard sizes
 1200 x 800, 1200 x 1000,
 1200 x 1200 mm
 [4' x 2'8", 4' x 3'3", 4' x 4']

Hydraulic Pallet truck, typically 2.5-t capacity with 1100-mm forks, corrosion-resistant material of construction or coating available for tannery use.



Required Equipment and infrastructure

1. General housekeeping as defining storage and operation spaces and aisles for movement of materials
2. Surfaces should be relatively smooth and unbroken to facilitate easy movement of pallet trucks, trolleys and forklift trucks
3. Pallets of wood or plastic, according to area of use wet or dry and exposure to chemicals
4. Pallet trucks and Trolleys / Horses



Handling with counter-balanced forklift of 3-t capacity, aisle width at least 4.8-m (about 16 feet)



Stuffing container



1.5-t forklift truck



Handling leather in wet processing area of tanneries



Warehousing note aisles, lighting and marked storage spaces an smooth floors.

Solar Thermal Energy in Tanneries

Mathew Alexander M.Tech. Vice President, ILIFO



PTR Technology

Concentrated solar energy using parabolic trough reflector (PTR), uses a parabolic mirror reflector to focus the sun's rays to an absorber pipe which collects the heat. Insulation of the hot pipe is by a glass tube enveloping the absorber pipe.

The focussed rays can give temperatures much higher than the solar water heaters typically used in home and industry.

Thermal oil flows in the pipe and transfers to heat of the hot oil to user equipment.

In a tannery, the user equipment could be all drying equipment such as drying tunnels of spraying machines and roller coaters, vacuum dryers, hot water heat exchangers etc.: in fact all equipment currently using heat from thermic fluid heaters.

With a few addition and modifications to the existing equipment, heat currently given to the thermic fluid boilers from burning fire-wood / agro-waste briquettes, could be supplemented by the heat from the hot oil pipeline of the PTR. PTR can also be installed on the roof top of the factory sheds, on a suitable supporting structure.

Tracking equipment would improve the collection efficiency of the thermal energy from the sun.

Storage of heat for some period after sunny hours is possible. Solar PTR technology can also be used to provide supplemental heat in conventional fossil-fuel power generating stations. The technology of such systems are being refined in various countries including India, where six solar PTR power plants are to go on stream in 2013.



Solar water heating of process water

Solar water heating (SWH) systems comprise several innovations and many mature renewable energy technologies that have been well established for many years. SWH is widely used in most countries including India. In a "close-coupled" SWH system the storage tank is horizontally mounted immediately above the solar collectors on the roof. No pumping is required as the hot water naturally rises into the tank through thermo-siphon flow.

In a "pump-circulated" system (which is applicable in factories), the storage tank is ground- or floor-mounted and is below the level of the collectors; a circulating pump moves water or heat transfer fluid between the tank and the collectors.

In tanneries, hot water is used in the dyeing process where water at 40...60°C is used in the drums. Most tanneries make use of wood-fired boilers to generate steam. A hose carrying the steam is dipped into the vessels containing the cold water to heat it. This is a thoroughly inefficient method of heat exchange. From the solar collectors on the roof, hot water generated at 50...95°C is pumped to the point of usage where it is mixed with cold water to attain the desired temperature for the process. On non-sunny days, or when solar heated water is inadequate, supplementary boiler heat water can be added to get the desired quantity at the desired temperature.

Collection of solar thermal energy on the roof of tanneries has been effected for use in pole drying chambers for completely drying leather after vacuum drying. In this case, hot air at a lower temperature range of around 50-80°C is adequate.

Solar energy is a fuel-free resource and therefore apart from capital cost and a very small maintenance cost, it is a good solution.

For solar energy systems from registered suppliers, subsidy is available to the equipment supplier from the Ministry of New and Renewable Energy Sources (MNRES) up to 30% of capital cost with certain conditions





UNIDO Consolidated Project for SME Development in India - Showcasing Ceremony

United Nations Industrial Development Organization (UNIDO)'s Consolidated Project for SME Development in India has been concluded with a ceremonial event on 27 February 2013 in Chennai. The event was marked by the presence of His Excellency Mr. Danielle Mancini, Ambassador of Italy in India, Ms. Ayumi Fujino, UNIDO Representative and Country Director, UNIDO Regional Office, New Delhi, Ms. Natascha Weisert, Industrial Development Officer, UNIDO, Vienna, Mr. S. Sivagnanam, Additional Industrial Advisor, O/o DC-MSME, Govt of India, and Mr. Bruno Valanzuolo, Ex-Chief Technical Advisor of the Project.



Visit to a leather SME at Pallavaram

Operating since Feb 2007, Consolidated Project for SME Development in India, is promoted by Govt of Italy (Ministry of External Affairs, General Directorate for Co-operation and Development) and Govt of India (Development Commissioner- Ministry of MSME), and implemented by UNIDO. DC MSME played a key role at identification of target sector and in steering the project agenda to benefit the MSME units in 3 clusters, viz. Leather Footwear and auto-component located in and around Chennai and Pune.

Towards showcasing, UNIDO, Italian Embassy and DC-MSME representatives earlier visited select beneficiary SMEs in Chennai leather, footwear and automotive components clusters to witness the improvements realised and gather direct feedback from the units and also from the key institutions that supported project activities. Expressing high satisfaction on project's impact in the clusters and industry, HE Mr. Danielle Mancini appreciated the project coverage & outcomes and also pro-active involvement of institutions, like CLRI in the project activities. In her address Ms. Ayumi Fujino expressed that looking at the spread and potential contribution of MSME clusters in India, a lot more needs be done through UNIDO's advance approach, such as cluster twinning, for cluster development and what has been shown is a way forward for the industry and associations with the government support. Ms. Natascha Weisert underlined the importance of the social aspects, cleaner processing and energy conservations

during her address and interaction with cluster representatives.

The 3 original components of this project Cluster Twinning(CT), Investment and Technology promotion (ITP) and Mutual Credit Guarantee Scheme (MCGS), provided a unique combination of developmental agendas to address the critical needs of the MSME sector viz. Skill Up gradation and Business development through Capacity building and bringing in International Best Practices, Technology up gradation through developing readiness for collaborative & investment opportunities, and Financial self reliance through innovative co-operative mechanism based on mutuality.

Mr. Shafeeq Ahmed, Chairman-IFLMEA and Vice Chairman-Council for Leather Exports (CLE), on the occasion, pointed that the timely programme on social aspects is presently helping 10 MSMEs in Leather cluster to reach international environmental certifications. He congratulated Mr. Hemant Verma, and team for having implemented the programme successfully. Mr. S. Sivagnanam, Additional Industrial Advisor, MSME Development Institute appreciated the wide coverage of project agenda and productive participation of SMEs in the project activities. MSME-DI Chennai has extended its full support throughout the project duration and encouraged SME participants for continuing the good work done by the UNIDO project. Mr. P. Dharmalingam, Director-National productivity Council (NPC), Chennai made his presentation on energy saving for SMEs in the cluster.

In the process of project implementation it was realised that MSMEs in



Showcasing Ceremonial Session at Hotel Savera, Chennai

the clusters need support in upgrading their social and environmental performance, to help them get increasing attention not only in domestic market but in the overseas buyer community as well. The consolidated project thus added to it another component called Social Aspects (SA) component, to address issues pertaining to environmental performance, occupational health and safety and various social compliances concerning women employee, child labour etc.



Mr.M. Viswanathan-UNIDO Cluster Development Agent (Leather & Footwear) and Mr.VV.Ramesh-UNIDO Cluster co-ordinator (auto-component) steered the interactive session during the showcasing ceremonial with the SME representatives for sharing their experiences and takeaways. Dr. James Daniel Paul, Senior Expert briefed about the investment technology promotion activities under this project and Mr. Jawahar Laal Sharma-UNIDO Cluster co-ordinator (Leather & Footwear) presented vote of thanks.

Through-out the duration of project implementation, engagement of key cluster associations and leading institutions were given high importance. Indian Finished Leather Manufacturers and Exporters Association (IFLMEA), Indian Shoe Federation (ISF) and Ambattur Industrial Estate Manufacturers Association (AIEMA) were identified as the partner associations in the respective clusters of Leather, Footwear and auto-component. Central Leather Research Institute (CLRI) and Central Footwear Training Institute (CFTI) were engaged as associate technical institutes. Additionally Confederation of Indian Industry, Mararatta Chamber of Commerce & Industry (MCCIA), and Indian Venture Capital Association (IVCA) were partnered. SIDBI and MSME-DI also partnered the project, so as to provide a complete and holistic approach in bringing a significant transformation.

This project directly benefitted to over 150 SMEs in the 3 sectors along with 5 key associations and 2 leading institutes, bringing in productivity gains through better utilisation of capacities, profitable growth through waste minimisation and efficient practices, and responsible employment through motivated employee/effective workforce orientation. Apart from Business gains project beneficiary achieved a higher socio economic status in terms of their ability to understand and respond to a variety of new age challenges.

DC MSME schemes for supporting MSME sector were also promoted and utilised for the cluster firms. 3 lean manufacturing SPVs were formed in auto-component cluster to implement DC-MSME scheme on Lean Manufacturing. Leather and Footwear cluster is actively working on the innovative cluster scheme.



Due to active involvement of institutes, project could set-in a sustainability mechanism for an on-going developmental dynamism and greater coverage of the cluster mass. CLRI and CFTI trainers are now able to offer the same training in an affordable manner to rest of the cluster SMEs, which was provided by the Italian trainers to initial set of SMEs. A UNIDO-CLRI Centre for Salt Less Tanning is also established to provide cleaner production technology in the Tanning industry.

Brain Storming Session on RO Reject Handling, 9-10 March 2013

A brain storming session and working group meeting on management of RO rejects in leather and textile industries and its related issues was organized on 9 and 10 March 2013 by Department of Science and Technology (DST), Government of India and Anna University in Koodal Hall, Institute of Ocean Management, Anna University, Chennai. Dr. T. Ramasamy, Secretary, Department of Science and Technology, Government of India chaired the meetings. The event was participated by research institutions across India including NIO, NEERI, CSMCRI, CLRI, etc. and academic institutions like Anna University, SRM University, VIT University, etc. apart from industry representatives from leather and textile sector.

On 9 March 2013, the issues on handling the reject generated from zero liquid discharge (ZLD) systems were deliberated. The issues raised were (a) cost of treatment of effluent rose by 3 to 4 times with the adoption of ZLD systems (b) No immediate use for the salt generated from the ZLD plants (c) Not able to expand its capacity rather it is shrinking and (d) leather industry provides economic potential due to downstream leather product units. The following are the gist of comments of Dr. Ramasami on the deliberation and the current issues faced by the industry.

On 10 March 2013, there were 23 presentations from various institutions and scientific organizations made presentations to address the issue. While some of these presentations, were out of context in discussions, the presentations exposed an array of new technologies and avenues for adoption or experimentation.

Dr. T. Ramasami while summing up the deliberations, recommended certain tasks to institutions in addressing the issue of reject from RO plants. Some of the recommendations are provided below:

- Rapid evaluation to study the marine disposal of accumulated salt
- Rapid evaluation to study any other possible use of accumulated salt including the option of though no economic return to the tanneries against the salt
- Energy audit in RO plant and evaporator
- Immediate evaluation of operational and system efficiency of RO and evaporator
- Immediate solution for improvement of quality of RO reject for process alternatives

Efficient Resource Management Strategies for Leather Industries



The Indian Leather Industry Foundation (ILIFO) in association with Tamilnadu Technology Development & Promotion Centre of the Confederation of Indian Industry (CII) organized a one-day workshop on Efficient Resource Management for Leather Industry on 28 March 2013 in Hotel Hilton, Chennai.



The focus and objective of the workshop was to enrich knowledge among the SME's on how to best utilize their resources to stay competitive in the constantly changing business environment.

Mr. Hariharan of CII introduced the objective of the workshop and explained that this workshop is an outcome of a survey conducted by TNTDPC on this subject among the leather industry. The workshop is also validate the findings of the survey.

Dr. Subhendhu Charakraborty, Chief Scientist, CLRI explained the major avenues on the technological development that are available from CLRI. Some of the technologies to improve the resources are available freely from CLRI and a few of these are patented. These technologies range from raw material presentation to processing to finished product utilization. Some of the new advancements in CLRI find uses beyond the leather industry, for example in medical field.

Mr. M. Viswanathan, General Manager, ILIFO made a presentation on methods to optimize resources in tanneries, namely water, chemicals and raw materials. He elaborated on the technical aspects of optimizing these resources, while there were managerial ways of optimizing by other methods. Raw material is the main natural resource, accounting for about 55-65% of the finished leather cost.



Efforts on maximizing the area yield of finished leather or maximizing the cutting value of the leather by camouflaging defects will improve the utilization of the raw material. Chemicals is the second largest resource, and he shared the experiences of UNIDO and ILIFO interventions in this area. Many techniques of water management were also explained.

Mr. Ananth Palaniappan, Hash Management Services made a presentation on materials management. He explained three techniques for managing inventory without the use of

expensive enterprise resource planning software.

Mr. Mathew Alexander, Vice President, ILIFO made a presentation on 3 areas where reduction of cost could be achieved in tanneries namely, by improving plant layout, materials handling and energy management. Productivity can be improved in manufacturing operations by optimizing plant layout, introducing rationalized handling systems. The systems may include unitizing

loads as on standard size pallets, moving pallets using pallet and fork lift trucks.

The product must flow through production and in-process storage right from the incoming stage to the final stage to dispatch by containers on trucks or other means. Material handling while necessary must be minimized to the maximum extent, as this only adds to manufacturing costs.

He also explained some techniques to reduce energy consumption by adoption of alternate energy-efficient processes within the plant and adoption of renewable sources of energy as solar, etc.

Mr. Shiju John of Cape India made a presentation on the lean manufacturing techniques which reduce the cost of production, while minimizing waste.

There were about 50 participants in the programme, who interacted with the speakers and programme was uniquely beneficial to the leather industry.

INDIAN LEATHER INDUSTRY FOUNDATION (ILIFO)

F2, "SHREYAS" No.87, Greenways Lane
Greenways Road, R.A.Puram
Chennai - 600 028. INDIA.

P +91-44-2461 5497

F +91-44-2461 5494

E ilifo@vsnl.com

W www.ilifo.org



ENTERPRENEURSHIP DEVELOPMENT INSTITUTE OF INDIA (EDII)

P.O. Bhat - 382 428

Dist. Gandhi Nagar

Gujarat, INDIA.

P +91-79-2396 9161 / 2396 9158

F +91-79-2396 9164

E dmparikh@ediindia.org

W www.ediindia.org

