ILTA
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ILTA PUBLICATIONS

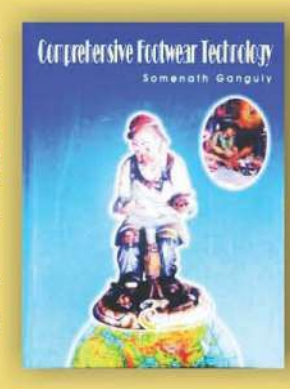
Title of the Book
Treatise on Fatliquors and Fatliquoring of Leather

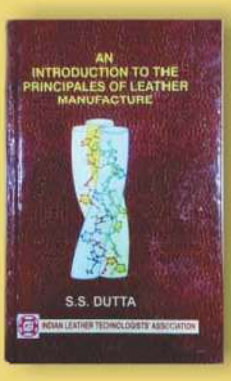
Author
Dr. Samir Dasgupta

Price per copy*
₹ 1500.00 / $ 60.00

Title of the Book
Comprehensive Footwear Technology
(Presently out of stock)
Author
Mr. Somenath Ganguly

Price per copy*
₹ 500.00 / $ 50.00





Title of the Book
An Introduce to the Principles of Leather Manufacture

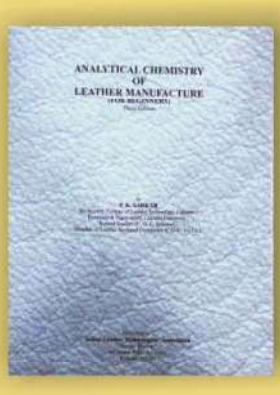
Author
Prof. S. S. Dutta

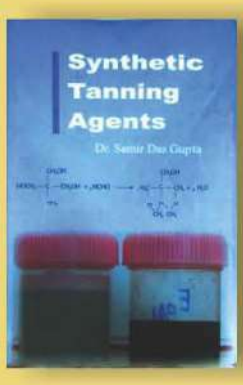
Price per copy*
₹ 800.00 / $ 50.00

Title of the Book
Analytical Chemistry of Leather Manufacture

Author
Mr. P. K. Sarkar

Price per copy*
₹ 300.00 / $ 10.00





Title of the Book
Synthetic Tanning Agents

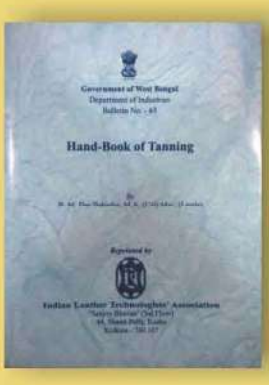
Author
Dr. Samir Dasgupta

Price per copy*
₹ 900.00 / $ 30.00

Title of the Book
Hand- Book of Tanning

Author
Prof. B. M. Das

Price per copy*
₹ 750.00 / $ 25.00



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ILTA
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Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies]

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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(Member Society of International Union of Leather Technologists and Chemists Societies)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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Water Footprint and Water Credit

The 2021 Comptroller and Reviewer Common (CAG) report highlighted that groundwater extraction surpasses revive rates, undermining approximately 80 per cent of freshwater sources over the following two decades. Agribusiness accounts for nearly 85 per cent of India's freshwater utilization, so proficient administration hones in this division can essentially influence groundwater conservation. With 18 per cent of the world's populace but as it were 4 per cent of its freshwater assets, India faces a basic water shortage challenge. As the biggest extractor of groundwater all inclusive, India pulls back over 253 billion cubic meters yearly. This over-extraction has radically decreased per capita water accessibility, with about 54 per cent of appraisal units in water stress. The Government of India propelled Mission LiFE (Way of life for Environment) in 2023 as a worldwide mass development to drive activities to protect the environment. The rewards for these activities, to be exchanged like carbon credits, are being created through systems and exchanging stages. Mission LiFE proposes a move to a circular economy, driving changes in request, supply, and arrangement, with water preservation being one of its seven centre areas. Water credits are a market-based component such as carbon credits, incentivising water preservation and quality advancement. People and substances can gain tradable credits by embracing water-saving measures. These credits can at that point be sold to others requiring to balanced their water utilization or progress their water administration hones. Water credits can improve water utilize productivity in horticulture, advance feasible water administration hones, and cultivate speculation in water-saving advances and framework, tending to Feasible Improvement Objective 6 (Clean Water and Sanitation). Defining baselines for water credits is more complex than for carbon credits due to the limited nature of water assets. Variables such as precipitation, groundwater accessibility, and current utilization levels require to be considered. Surveying the water impression includes assessing virtual water—the add up to water devoured amid the generation prepare of rural commodities, compared to the put of cultivation. Virtual water is the add up to volume of water devoured in the generation prepare of rural commodities, from edit development through to the last item. This incorporates both coordinate water utilization (water system) and backhanded water utilization (water inserted in inputs such as fertilizers and pesticides), making a difference to decide the water needs for diverse crops and demonstrating the water utilization productivity and supportability of agrarian practices. Key components (Genuine and virtual water) Green water: Water put away in the soil and utilized by plants, shaping the portion of virtual water determined from characteristic precipitation. Not at all like watered agribusiness, rain-fed frameworks depend totally on green water. Blue water: Freshwater sourced from surface and groundwater for water system, speaking to the overseen parcel of water assets utilized in agriculture. Grey water: The volume of freshwater required to weaken toxins (e.g., fertilizers and pesticides) coming about from agrarian generation, and re-establish water to usable quality. Grains: Developing grains like wheat or rice requires noteworthy water for the plants and has a higher virtual water substance due to fertilizers and pesticides. Meat: Creating meat is water-intensive, counting water utilized for developing creature nourish, giving drinking water and keeping up the animals. Vegetables and natural products: These items have shifting virtual water substance depending on the sort of trim and the agrarian practices. Illustration for a kg of wheat green water: 500 litres (water utilized by the plant) Blue Water: 300 litres (water system water) Dark Water: 100 litres (water to weaken fertilizers and pesticides) Add up to Virtual Water: 900 litres per kilogram of wheat By analyzing virtual water, policymakers can make educated choices approximately water asset administration, rural hones, and exchange arrangements to advance water sustainability. To remunerate preservation through water credits, it is vital to characterize by and large water impression baselines, counting virtual water and following its area and stages of utilize. Preservation endeavours compensated with water credits ought to consider neighbourhood precipitation, groundwater accessibility, and water quality. A water-intensive agrarian movement in a water-scarce locale ought to bring about a water shortage punishment. This comprehensive approach

guarantees that water utilization is assessed comprehensively, figuring in the generally setting, not fair the water effectiveness of the particular rural activity. Water proficient crops, water judicious water system hones and innovation are the require of the hour. Water credits can propel agriculturists to embrace hones to make strides water utilize proficiency in horticulture and monetize the savings. Some common sense approaches seem be - Drip water system: Minimizes dissipation and runoff, lessening water utilization by up to 50 per cent compared to conventional methods. Rainwater gathering: Capturing and putting away runoff water for rural utilize can decrease reliance on groundwater and offer assistance revive water tables. Precision farming: Using innovation like soil dampness sensors and climate figures to enhance water utilization by applying the right sum of water at the right time, moving forward trim yields and decreasing water waste. Crop determination: Developing crops superior suited to the nearby climate, requiring less water, adjusting rural hones with territorial water availability. Crop turn: Substituting crops with distinctive water necessities to avoid soil exhaustion and diminish generally water utilization, improving soil ripeness and diminishing the chance of bother and malady outbreaks. Groundwater energize : Procedures like check dams and revive wells upgrade groundwater levels, permitting abundance surface water to permeate into the ground and renew water tables. A vigorous system for water credits is basic for adequacy and versatility. This ought to characterize qualified water-saving exercises, set estimation and confirmation guidelines, and make a commercial centre for credit exchanging. Fruitful water credit frameworks require territorial adjustment to address changing precipitation levels, water shortage, and water quality challenges. Challenges and Arrangements in Executing Water Credit Systems Implementing water credit frameworks presents different challenges – Defining baselines: Consider watershed characteristics, precipitation designs, and current usage. Ensuring impartial get to: Little ranchers and huge endeavours ought to have rise to get to water credits, anticipating wealthier substances from overwhelming the market. Establishing an economic value for water credits requires comprehensive studies to set baselines.

Water credits offer an innovative solution for sustainable water management in the agricultural sector. By assigning economic value to water-saving measures, it will encourage conservation and efficient use, promoting sustainable agricultural practices and enhancing the sector's resilience to water scarcity. Successful implementation of water credit systems requires robust frameworks, equitable access, harmonized regulatory frameworks, and strong verification processes.

As we grapple with significant water challenges, water credits have the potential to play a crucial role in ensuring sustainable water management. By promoting efficient water use in agriculture, water credits can help secure water availability, enhance crop yields, and support farmer livelihoods, ensuring a sustainable agricultural sector for future generations.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

Stahl Leather solutions

Stahl is proud to launch the renewed Stahl Neo® range: a future-proof portfolio of low-impact solutions covering the entire wet-end and finishing stages of leather production.

With growing awareness of environmental and health and safety impacts, the Stahl Neo® portfolio has been extensively reviewed and tested to help customers meet today's fast-evolving certification and compliance landscape for leather chemicals. This includes the recently updated Zero Discharge of Hazardous Chemicals (ZDHC) Manufacturing Restricted Substance List (MRSL) 3.1.

Following a rigorous internal review and testing programme, all products in the Stahl Neo® portfolio are in compliance with the following three criteria:

1. ZDHC: All Stahl Neo® products are compliant with Version 3.1 of the ZDHC MRSL for leather manufacture.

2. EU CMR: Stahl Neo® products are certified free from carcinogenic, mutagenic or reprotoxic (CMR) substances as per EU criteria.

3. EU REACH SVHC: Stahl Neo® products meet EU REACH criteria for substances of very high concern (SVHC) (less than 0.1% concentration).

As a result, Stahl is now able to offer tanners the most comprehensive range of future-proof solutions on the market – providing peace of mind for stakeholders across the leather article value chain.

Scan the QR code to download the Stahl Neo® brochures and discover the specific benefits of each product in our portfolio.

www.stahl.com

Stahl is a world leader in speciality coatings and treatments for flexible materials. Around the world, nearly 2,000 Stahl colleagues are driven by a clear purpose:
Touching lives, for a better world.

Our diverse teams work on creative and innovative surface solutions that enable our customers to make fantastic products. Our coatings are found on everyday materials in the automotive, luxury goods, packaging, apparel and home furniture market, among others. When consumers touch everyday products, we touch their lives.

Being a world leader means we are dedicated to contributing to a better world together with our value chain partners. At Stahl, we aim to impact the market through innovation and sharing knowledge and by reducing our own operational footprint. Our approach is underpinned by our robust ESG strategy and our strong sense of social responsibility, a characteristic shared by leading global companies.

We promote:

- Teamwork
- Initiative
- Personal development
- Innovation
- Creativity

Working at Stahl, means being part of a versatile, ambitious team that is committed to working on innovative, high-quality coating solutions for our customers while making the world a better place. You will also be joining a diverse global community: headquartered in Waalwijk, the Netherlands, Stahl operates a network of 16 production sites and 37 application laboratories, supported by sales offices in 22 countries.

stahl.com

Stahl

STAHL LAUNCHES NEW STAHL YMAGINE® EDGE PAINT FOR LUXURY ACCESSORIES

Waalwijk, the Netherlands, 10 June 2024 – Stahl, a leading provider of speciality coatings and treatments for flexible materials, has announced the latest addition to its edge paint portfolio: a high-performance, bio-based edge paint for luxury accessories.

This latest addition to Stahl's edge paint portfolio has been developed with environmentally conscious consumers in mind, who increasingly seek more sustainable fashion choices. The Stahl Ymagine® range combines Stahl's edge paint expertise with the latest innovations in renewable raw materials.

Stahl Ymagine® addresses the current lack of bio-based solutions in the edge paint category while continuing to meet the needs of technically demanding brands and manufacturers. It offers the same excellent performance as Stahl's other premium edge paint products, including the following benefits:

- Excellent ageing and hydrolysis resistance
- High solids content, requiring fewer coats
- Suitable for leather and synthetics
- ZDHC and REACH compliant
- Over 2,000 colours developed and colour matching capabilities as per customer requests

Georges Fonseca (Global Business Manager Shoe Finish & Leather Care at Stahl) said: 'Stahl Ymagine® is the result of years of intensive research and development, during which it showed exceptional performance under a wide range of conditions. And with its bio-based formulation, it demonstrates Stahl's tangible progress on our ESG Roadmap to 2030. This high-quality edge paint product is a great source of pride for our team. It feels great and is kind to the planet, delivering on both facets of our purpose, 'Touching lives, for a better world''.

The range is part of the Stahl Ympact® family of renewable carbon solutions – a key part of Stahl's efforts to de-fossilise the coatings value chain. All Stahl Ympact® products contain between 25% and 70% renewable carbon content, so customers can be confident that by choosing a Stahl Ympact® product they are reducing their dependence on fossil-based raw materials.

Further product details can be found on the dedicated web page.

(Stahl News – 10/06/2024)

THIERRY VANLANCKER JOINS STAHL BOARD

Stahl, the leading provider of speciality coatings and treatments for flexible substrates, has appointed former AkzoNobel CEO Thierry Vanlancker as a Non-Executive Director to its Board.

As a Non-Executive Board Director, Mr Vanlancker will provide valuable oversight, advice and strategic guidance to Stahl's leadership, supporting the company's position as leader in speciality coatings and treatments for flexible substrates.

From 2017 to 2022 Mr Vanlancker served as CEO and Chairman of the Management Board of AkzoNobel NV. Prior to his tenure at Akzo he held several senior positions in Europe and the US at Dupont.

Mr Vanlancker also serves as Chairman of the Board at Sika and as Non-Executive Board Director at Aliaxis and Etex. He brings over 30 years of experience in the speciality coatings and chemicals industries and holds a Master's degree in chemical engineering from Ghent University.

Maarten Heijbroek, Stahl CEO, says: "We look forward to working with Thierry and harness his extensive experience in the coatings industry to support Stahl's own transformation into a specialty coatings company and realise Stahl's ambitious ESG targets." Thierry Vanlancker says: "I'm delighted to be joining Stahl at this exciting point in its history. I have gotten to know Stahl as a high-quality company with a clear strategy and a true sustainability leader in its field."

About the Stahl Board

The Stahl Board of Directors consists of Stahl's CEO and CFO and seven Non-Executive Directors, including representatives from Stahl's main shareholders Wendel and BASF, two independent members, and a former executive member. The Stahl Board is responsible for the general affairs and strategy of Stahl, and the formation and implementation of the corporate governance organisation of the Stahl Group, including its management and reporting structure under the articles of associations of the relevant group companies.

(Stahl News – 06/05/2024)

SEVERE FLOODING IN RIO GRANDE DO SUL, BRAZIL

On behalf of the global Stahl community, including our Brazil-based colleagues, we would like to express our sympathy and solidarity with the people and families affected by the recent severe flooding in Rio Grande do Sul, Brazil.

As it stands, Stahl's facilities in Portão, Rio Grande do Sul, have not been affected by the flooding, though we continue to monitor the situation closely. Stahl has taken every precaution to safeguard our wastewater treatment plans to prevent uncontrolled emissions from our lower-lying facilities.Stahl will provide further updates on the situation as necessary.

(Stahl News – 05/05/2024)

STAHL JOINS GO!PHA ALLIANCE TO ADVANCE THE USE OF NATURALLY OCCURRING PHAS IN FORMULATED COATINGS

Stahl, a leading provider of speciality coatings and treatments for flexible substrates, has joined the Global Organization for PHA (GO!PHA), a non-profit platform that advocates and advances the use of polyhydroxyalkanoates (PHAs), a naturally occurring polymer that offers a lower-impact, bio-based alternative to traditional fossil-based plastic feedstocks.

GO!PHA is a coalition of over 60 stakeholders ranging from producers and formulators to users as well as universities and research institutes. The members, all early adopters of PHAs, work together to increase understanding of this relatively new PHA technology and advance the science behind these renewable, compostable and biodegradable materials. As a member of the network, Stahl will have the opportunity to join forces with the wider PHA value chain to help move PHAs beyond the testing phase and accelerate the potential application of the technology in the coatings market.

Paolo Bavaj (Chief Innovation and Development Officer at Stahl): 'We see significant potential in PHAs, and we look forward to collaborating with like-minded stakeholders through the GO!PHA alliance to bring this important technology to life. We are currently testing potential PHA-based applications across our entire portfolio; by pioneering and embracing new, sustainable technologies, we are truly living our purpose, Touching lives, for a better world.'

Anindya Mukherjee (Executive Board Member at GO!PHA) : "We warmly welcome Stahl as a new member to GO!PHA. Stahl's expertise in speciality coatings and treatments for flexible substrates will undoubtedly enrich our coalition's efforts to promote the use of PHAs, fostering innovation and sustainability within the coatings industry. Together, we look forward to advancing the adoption of PHAs and other renewable, compostable, and biodegradable materials!"

WHAT ARE PHAS ?

PHAs are polymers produced in nature, mainly as a result of bacterial fermentation. They can be sourced from organic waste streams, biogas, sugars and fat-rich, plant-based feedstock. The chemical composition of PHAs can be adjusted to a soft and elastic form, making them ideal for flexible substrates.

PHAs are a bio-based alternative to fossil-based 'persistent plastics', offering reduced carbon emissions and no harm to people or the planet through contamination or additives. They are also circular by nature, as they can be reused, recycled or composted: taking as little as days to break down compared to centuries for fossil-based plastics.

(Stahl News – 02/05/2024)

STAHL ADDS STAYDRY WATERPROOF PERFORMANCE COATING TO INTEGRA® PORTFOLIO

Stahl, a leading provider of speciality coatings and treatments for flexible substrates, has launched the protective coating Stahl Integra® Dry 725, meeting the increasing demand for water-repellant technical fabrics.

Part of the Stahl Integra® toolbox, Stahl Integra® Dry 725 is a fluorine-free coating for water-repellent technical textiles that harnesses Stahl's proven polymer technology. Stahl has introduced Stahl Integra® Dry 725 in response to the growing market demand for fluorine-free, water-repellent technical textiles, which is projected to reach USD 605.1 million by 2029.

Jan Terras, Global Market Manager within Stahl's Performance Coatings division, says: "With Stahl Integra® Dry 725, we have added a new solution for technical fabric producers within our range of performance coatings, which offer superior performance without compromising on sustainability. Together with our partners, we are creating solutions to new and existing challenges and identifying areas where our advanced, polymer-driven technologies can truly add value, in support of our purpose – Touching lives, for a better world".

Stahl Integra® Dry 725 offers a balanced performance between repellency, durability and adhesion. Stahl's durable water-repellent (DWR) technology, StayDry, repels water from fabric by modifying the surface tension of fibres. The solution can be combined with other top or back coatings and is specifically designed for technical textile applications such as camping equipment or luggage. As a fluorine-free, waterborne coating that is cured at low temperatures, Stahl Integra® Dry 725 can help reduce environmental impact without compromising on quality.

About Stahl Integra®

Stahl Integra® is a modular 'toolbox' of tailor-made, customer-orientated protective coating solutions that simultaneously ensure product quality and superior fabric integrity. This means that specific mechanical functionalities – from flame-retardant and breathable coatings to stay-clean technologies – can be introduced at different stages of the production process to meet specific end-market requirements as needed. These solutions help fabric producers to not only comply with regulatory and environmental demands, but also to achieve the highest standards in mechanical properties, fabric integrity, and other market requirements.

(Stahl News – 22/04/2024)

From the desk of General Secretary

ELECTION SCHEDULE FOR RECONSTITUTION OF EXECUTIVE COMMITTEE OF ILTA AND THE REGIONAL COMMITTEES FOR THE TERM 2024 - 2026

The Executive Committee of ILTA at an Emergency Meeting held on 09/04/2024 approved the following schedule for Election of Executive Committee of ILTA and the Regional Committees for the term 2024 - 2026.

Sl. No.	Events	Election Schedule for 2024-2026	Day
1	Mailing of Nomination papers & Voters' List on or before	02.05.2024	Thursday
2	Last date for receipt of Nomination Papers	24.05.2024	Friday
3	Last date for receipt of Consent	13.06.2024	Thursday
4	Last date for withdrawal of candidature	17.06.2024	Monday
5	Mailing of ballot papers on or before	06.07.2024	Saturday
6	Last date for receipt of Ballot Papers from the voters residing outside Kolkata PIN Code areas	03.08.2024	Saturday
7	Casting of votes by voters residing in Kolkata PIN Code Areas at ILTA Administrative Office 10-00 to 17-00 hrs. (LUNCH BREAK: 1-30 to 2-30 PM)	02.08.2024 & 03.08.2024	Friday & Saturday
8	Counting of votes at ILTA Administrative Office from 11-00 hrs. onwards	05.08.2024	Monday

74TH FOUNDATION DAY CELEBRATION OF ILTA

ILTA will celebrate its 74th Foundation Day and organize Prof. B. M. Das Memorial Lecture as it organized every year on 14th August' 2024.

Rest details of the event will be intimated in due course.

14TH ASIA INTERNATIONAL CONFERENCE ON LEATHER SCIENCE & TECHNOLOGY (AICLST)

ILTA is going to organize the 14th Asia International Conference on Leather Science & Technology (AICLST) in the year 2026 at Kolkata, India. Official confirmation has been received so far from IULTCS.

Planning and details of the program would be shared in due course.

HEALTH CARE BENEFIT FOR ILTA MEMBERS

ILTA has launched Health Care Benefits for all the Members of the Association in collaboration with M/s Narayana Health w.e.f. 1st April, 2024. Initially the scheme has been launched for the members of Eastern Region only as the Pilot Project.

For benefits and other details about this project you may kindly follow the HRD Corner.

DIGITALIZATION OF ILTA PUBLICATIONS

ILTA is going to launch a digital platform for availing all its publications including Leather Text Books, JILTA and different articles from renowned authors of Leather Fraternity online.

Work on this project is under process. The details of the same will be published very soon.

(Susanta Mallick)
General Secretary

YOUTUBE CHANNEL & FACEBOOK PAGE OF ILTA

An official **YouTube Channel** namely **ILTA Online** and a **Face Book Page** namely **Indian Leather Technologists' Association** has been launched for sharing the activities of our Association since November' 2020 and July' 2021 respectively.

You may find all the Lives / Video recordings of different Seminar, Symposiums & Webinars on both of these social medias along with our website **www.iltaonleather.org** time to time.

You are requested to kindly do **Like** & **Subscribe** the YouTube Channel and **''Follow**' the FaceBook Page to get regular updates on the activities of our Association.

PUBLISH YOUR TECHNICAL ARTICLE

Faculties, Research Scholars and students of various Leather Institutes may wish to publish their Research / Project papers in an Article form in this monthly technical journal, JILTA.

Interested author may sent their paper (in MS Word format) along with a PP Photograph and Contact details like Email, Mobile etc. to our email IDs : admin@iltaonleather.org / jiltaeditor@gmail.com

Members are requested to :-

a) Kindly inform us your '**E-Mail ID**', '**Mobile No**', '**Land Line No**', through E-Mail ID: admin@iltaonleather.org or over Telephone Nos. : 24413429 / 3459. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.

b) Kindly mention your **Membership No.** (If any) against your each and every communication, so that we can locate you easily in our record.

RECEIVING PRINTED COPY OF JILTA EVERY MONTH

We have started to post Printed copy of JILTA from April' 2022 to members and all concerned as it was before Covid period. Simultaneously we have been sending the e-copy of JILTA through email also to all the concerned receivers.

If you are not receiving JILTA by Post or through email, may please verify your Postal Address and/or Email Id with our office at the earliest.

General Secretary and the Members of the Executive Committee are available to interact with members at 18.30 hrs, at our Registered Office on every Thursday

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Solidaridad

switchasia GRANTS PROGRAMME

EFFECTIVE WASTE MANAGEMENT AND SUSTAINABLE DEVELOPMENT OF MSME TANNING COMPANIES IN KOLKATA LEATHER CLUSTER (BANTALA)

2022-2023

PROJECT PARTNERS IN ASIA

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WHAT ARE THE GOALS AND MOTIVATIONS THAT INSPIRE SOLIDARIDAD TO WORK HARDER IN ADVANCING THE CAUSE OF SUSTAINABILITY IN LEATHER SECTOR ?

This pertinent question formed the crux of fruitful conversations held in Kolkata on 4th and 5th June 2024, as Solidaridad's new Executive Director, Andre de Freitas along with Managing Director, Mr. Shatadru Chattopadhayay met with key stakeholders from the leather industry.

Solidaridad's leather team in the Bantala cluster, Kolkata, provided Andre with key insights on the European Union Switch Asia funded "Effective waste management & sustainable development of the MSME tanning companies in Kolkata leather cluster (Bantala)" project being undertaken, its impact on the project beneficiaries and on cluster along with vision for the future to make the leather industry a sustainable self-sustaining socio-economic green cluster.

Day started with tree-plantation exercise as part of the World Environment Day celebrations in the premises of the one of its kind state-of-the-art Centre of Sustainability. It's a centre, that enables all tannery owners, managers, and workers to come and see and understand the purpose of each of the new technologies displayed under waste management and eco-friendly interventions, and currently utilized in several factories. One of the main functions of this Centre is to provide training, capacity building support & knowledge about the interventions that have been done under our project. This Centre is a valuable contribution to the cluster as a whole, the industry people will utilize the facilities for development of the industry even after project closure. Andre de Freitas had a fruitful discussion on impact that project is creating and possibilities to scale up the eco-friendly interventions on cluster level with industry stalwarts like Nihal Zafar, Managing Committee CLCTA, Md. Tahir Khurshid, Director Trident Leather and other industry representatives.


CENTRE OF SUSTAINABILITY
switchasia
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Solidaridad
SOLID WASTE MANAGEMENT SITE
& TRAINING CENTRE
MR. ANDRE DE FREITAS
DR. SHATADRU CHATTOPADHAYAY
SOLID WASTE MANAGEMENT SITE
& TRAINING CENTRE
ANDRE DE FREITAS
EXECUTIVE DIRECTOR SOLIDARIDAD
Did You Know?
RECYCLING
SAVES ENERGY

On the occasion of Executive Directors visit to Kolkata leather cluster “Solid Waste Management Site & Training Centre” in the premises of CLC tanner’s association SLF site was inaugurated by Andre de Freitas in the presence of Shatadru Chattopadhayay, Md. Zia Nafis, Joint Secretary CLCTA, Kamal Ahmed Khan, MD Dugros Leather India Pvt. Ltd. and other CTCTA team members. This facility will be used as collection-cum-training centre, where knowledge on effective techniques of transforming waste to value-added products will be imparted to workers.

Andre interacted with project partners, and visited the premises of DUGROS LEATHER (INDIA) PRIVATE LIMITED, one of the entities Solidaridad is working with.

The day ended with launch of “Driving Pollution Abatement in Leather & Textile MSMEs in South Asia”, a publication showcasing Solidaridad’s journey in the leather and textiles supply chain in South Asia and its roadmap for the years ahead.

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Solidaridad

CORRIGENDUM

Due to oversight, the title of the write up under Solidaridad Corner was printed as **Consent to Concrete : "Transforming Tannery Sludge into Sustainable Pavement Blocks"** in May & June, 2024 issue of JILTA.

Kindly note, it should be read as **Concept to Concrete: "Transforming Tannery Sludge into Sustainable Pavement Blocks"**.

Inconvenience caused is regretted.

INTERNATIONAL UNION OF LEATHER TECHNOLOGISTS AND CHEMISTS SOCIETIES
(www.iultcs.org)

IULTCS SETS DATE FOR 38TH LEATHER CONGRESS

The International Union of Leather Technologists and Chemists Societies (IULTCS) has announced the dates for its 38th Congress.

The event will take place in Lyon, France, from 8-11 September 2025. The theme will be 'Beyond leather tradition, innovation and sustainability'.

The IULTCS's previous congresses have taken place in 20 different countries on five continents, with the most recent being held in Chengdu, China in 2023.

In the opening to that event, Yuzhong Li, then vice president of the China National Light Industry Council, chairman of the China Leather Industry Association, and president of the Organizing Committee of the Congress, pointed out that the leather industry must address the contemporary issue of how to achieve industrial modernisation through technological innovation and collaboration. Faced with changing consumer preferences and the rapid development of synthetic materials, the global leather industry must seize the key variable of technological innovation and strengthen international cooperation.

Meanwhile, Joan Carles Castell, at that time the IULTCS vice president, spoke about the key objectives of the IULTCS, emphasising the need for sustainable practices and the responsible use of resources within the leather industry.

The IULTCS is a world-wide organisation of professional societies. There are currently 19 member societies and six associate members representing some 3,000 individual members.

INTERNATIONAL UNION OF LEATHER TECHNOLOGISTS AND CHEMISTS SOCIETIES
(www.iultcs.org)

According to the IULTCS statutes its aims are to foster cooperation between member societies, to hold congresses to further the advancement of leather science and technology, to form commissions for special studies and to establish international methods of samples and testing leather and materials associated with leather manufacture.

(leathermag.com – 20/06/2024)

INTERNATIONAL UNION OF LEATHER TECHNOLOGISTS AND CHEMISTS SOCIETIES

Carbon Audit - A Discussion

(Concluding Part)

Dr. Goutam Mukherjee

Professor, Govt. College of Engineering & Leather Technology, Kolkata

Calculating GHG emissions for reporting and disclosure

Once finance-grade systems and processes are in place to capture and manage sustainability data, the organization is ready to precisely calculate GHG emissions for reporting and disclosure.

The Greenhouse Gas Protocol (link resides outside ibm.com), developed by the World Resources Institute and World Business Council for Sustainable Development, has developed a number of accounting standards that help organizations track and measure decarbonization progress. These guidelines inform the "E" in ESG reporting across many frameworks, including Carbon Disclosure Project (CDP), Global Real Estate Sustainability Benchmark (GRESB), Sustainability Accounting Standards Board (SASB) and Dow Jones Sustainability Indices (DJSI).

All reporting frameworks require organizations to draw a clear line in the sand by which to measure progress. This baseline, or existing carbon footprint, is the marker that all future improvements will be measured against. It must be accurate and appropriate.

Utilities

- When setting a baseline, consider how will you define the boundaries of your activities.
- Think about how to structure your data so it can be easily compared to future activity.
- Determine what date is most appropriate to use (you'll want to ensure your historical work on carbon reduction initiatives are not discounted).

Understand the technical requirements and considerations of the commitments you are making. Be clear on your objectives and take the time to understand the varying technical criteria associated with each pledge platform, commitment or reporting framework, as well as any conflicts among them. For instance, does the pledge platform allow for the use of green energy already on the grid?

Before making any commitments, it is important to understand what data types are needed and the level of granularity required. Signing up to a commitment when you have no way of accessing the data required to measure progress toward your goal happens more often than you'd think and can be the source of many headaches.

Every business is different, so it is important to either build internal knowledge or engage a consultant for support. Once a strategic approach is in place, make sure your ESG reporting software can capture renewable energy certificate allocation decisions, store and manage your emissions factors and calculate your emissions inventory, including market-based emissions.

Emissions factors form the basis of GHG calculations, so using the correct ones is essential for the accuracy required. That said, the selection, sourcing, allocation and management of factors present a range of challenges.

When selecting emission factors, pay close attention to the following three considerations :

1) Region: Consider location factors that are as granular as possible. Assuming you have a presence in multiple locations, consider setting state-level regions over a full country-based region. This allows for more nuanced accounting relative to state policies, guidelines, private utility companies and so on.

2) Reporting and factor period: Emission factor updates don't always line up with reporting timelines. Address this by setting schedules for when to source and update

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factors. Scheduling prevents confusion and maintains consistency between reporting periods and versions, even in years that the commitments are shifting.

3) Emissions source: Be sure to closely follow GHG accounting principles, because choosing incorrect factors can cause significant errors. For example, for ground travel emissions, are vehicles running on diesel or gasoline? If gasoline, is there a biofuel content?

Many organizations run their annual GHG accounting process using spreadsheets, which leads to enhanced risk and productivity loss—especially for complex, global organizations that report to multiple frameworks. ESG reporting software can help you stay organized by automating data capture directly from the source and maintaining an emissions factor engine for nationally-recognized carbon emissions factors. These include :

- The US EPA Climate Leaders Program
- Emissions & Generation Resource Integrated Database (eGRID)
- Intergovernmental Panel on Climate Change (IPCC)
- International Energy Agency (IEA) National Electricity Factors
- Australian National Greenhouse Accounts (NGA)
- Ministry for the Environment in New Zealand
- Department for Environment, Food and Rural Affairs (Defra) in the United Kingdom

Certification is typically a multiyear process that is increasingly subject to third-party audit. Your GHG accounting practices must support reliable, consistent reporting that eases the audit process and allows for year-on-year repeatability and comparison.

- Keep detailed records: Keeping an up-to-the-minute record of calculations and their inputs will save headaches at audit time. It is imperative that you keep track of decisions and the reasons for them, store supporting paperwork and maintain a clear record of any changes made to the data used for certification.
- Maintain data quality: Effective data maintenance requires dedicated focus, regular attention and clear lines of responsibility. Use reporting tools to keep track of data gaps and regularly interrogate data records to assess data quality.
- Secure ongoing stakeholder engagement: Although commitments, targets, strategy and GHG accounting may stem from one team within your organization, the data must be sourced from a much larger pool of internal stakeholders. Ideally, a diverse group will be engaged and accountable for collecting and sharing data from the representative business units. These stakeholders can help flag potential gaps in the ability to collect data. Getting everyone's buy-in can be difficult, so it is important to be mindful of the challenges and address the level of effort required up front.

Utilities

- Visibly engage senior-level staff in sustainability performance.
- Follow an engagement plan that maps the vision and criteria for stakeholder communication efforts.
- Use internal reporting tools to inform and engage stakeholders.

Stay up to date on changes in reporting frameworks. The rules associated with emissions reductions frameworks, guidelines and pledge platforms are maturing and remain subject to regular change. Keeping abreast of updates and modifications is essential. Subscribing to update alerts from the relevant reporting authority and keeping in regular contact with your data management and reporting platform provider and your specialist consultant can help support your decarbonization efforts.

As ESG reporting becomes increasingly complex, so too have GHG accounting methodologies and practices. While GHG accounting continues to evolve and attract more scrutiny, complexities are emerging that can trip up even experienced reporters.

Under the GHG Protocol Corporate Standard, GHG emissions are divided into scopes for calculation and reporting. Scope 1 encompasses all "direct" emissions from an organization, including

company vehicles, fugitive emissions from manufacturing processes, and fuel combustion onsite, such as burning gas to produce heat. Scope 2 encompasses "indirect" emissions from the consumption of purchased electricity, heat or steam.

Scope 3 requires organizations to look for implications of carbon emissions outside of their direct physical footprint, quantifying emissions through the supply chain outside the organization's direct control. This includes embodied emissions within resources consumed by the organization—paper used, waste produced, coffee consumed—and the emissions of any suppliers, which are especially important to organizations that produce physical products.

Scopes 1, 2 are the most controllable scopes for GHG accounting and reduction and the focal point of any decarbonization journey. For leading organizations under investor pressure and looking to expand their impact, Scope 3 emissions provide this opportunity. Scope 3 accounting allows them to reach other emitters in their value chain—such as suppliers and customers—and influence them to reduce their emissions.

Accounting for renewable energy purchases with the market-based method

Several years ago, the GHG protocol updated its reporting standard to require two methods of Scope 2 emission calculations: location-based and a new, market-based method.

Traditionally, organizations were required to report their Scope 2 emissions using a standard set of grid-average emissions factors. Following this approach, known as the location-based method, all emissions-reduction efforts are excluded from the GHG inventory. Initially this made sense because it enabled organizations to be compared fairly. It did, however, prevent some organizations from showcasing their efforts or taking credit for their green power purchases in their emissions totals. The Scope 2 market-based approach addressed this issue.

The market-based approach instructs organizations to apply Energy Attribute Certificates (EACs)—such as renewable energy certificates (RECs) or guarantees of origin—to their consumption and then source emission factors from contracts or suppliers where available. In instances where consumption is not covered by EACs or other factors, residual mix factors are applied to consumption. Residual mix factors are similar to grid-average factors, but are calculated based on electricity generated from non-renewable sources (e.g., oil, gas and coal) or other sources not backed by EACs. If residual mix factors are not available for a region, then standard grid-average factors should be used, because they are in the standard location-based method.

Using the market-based method can prove helpful for organizations in pursuit of intentional procurement of clean and renewable energy.

The first step of this accounting process is understanding the organization's electricity purchases. There may be a mix of sources, especially if the organization works across various regions. Once tallied, each supplier is contacted to collect their emissions factors as comprehensively as possible. If the organization purchases renewable electricity directly, the EACs should already exist and are known as "bundled certificates." These certificates can also be purchased separately from electricity and are known as "unbundled certificates." Use GHG Protocol's Scope 2 Quality Criteria to ensure that these certificates can be used. Unbundled certificates must be allocated across the organization according to the Quality Criteria, with careful attention to points 4 and 5. Point 4 requires that certificates be issued and redeemed as close as possible to the period of energy consumption to which the instrument is applied. This means it would be incorrect to allocate certificates issued in 2018 to electricity consumption from 2021. Point 5 requires that certificates be sourced from the same market in which the reporting entity's electricity-consuming operations are located and to which the instrument is applied. This means that it would be incorrect to allocate certificates issued in the U.S. to consumption in the U.K. If the organization has power purchase agreements, the certificates may not exist. In this scenario, the emissions factor tied to the contract must be determined and documented accordingly. Only use the publicly available residual mix emissions factors that are within the region that is being accounted for if the supplier's direct information is not accessible. This calculation method can prove complex, which is why it is essential that your ESG reporting platform is designed to support both location- and market-based calculation methods.

Scope 3 emissions present a significant opportunity for organizations to engage their suppliers to accelerate decarbonization globally. Supply chain measures put in place by relatively few end-consumer companies can yield a significant

flow-on effect by reducing emissions for numerous organizations in the supply chain.

Reporting and reducing Scope 3 emissions are of most immediate relevance to organizations that report to CDP or have committed to the Science Based Targets initiative (SBTi). They also have the most impact for organizations that operate in one of the eight supply chains that account for over 50% of global emissions—namely food, construction, fashion, fast-moving consumer goods, electronics, automotive, professional services and freight.

Utilities

- Take advantage of ESG reporting software to automate what would otherwise be a painstaking manual data collection process.
- Be prepared to rely on manual surveys and conversations with individuals that represent your organization's supply chain for some of the data collection.
- Maintain flexibility in the data structure between various factors. Data files provided from various supply chain members will be formatted in different ways, and your data framework must be flexible enough to ingest, process and analyze this data.
- During each step, keep a detailed, thorough audit trail to explain the approach and document decisions.
- Use project management and engagement tools such as Kanban boards to keep the group of stakeholders informed of the process.
- Consider seeking advice from a specialist or consultant who can help resolve the challenges related to geographic spread and data management confusion.

What to look for in an ESG reporting software platform ?

With ESG reporting software, the data needed to report on an organization's performance is automatically collected and consolidated into a single system of record. This allows the organization to generate important insights and deliver results. When assessing ESG reporting software, look for :

- **Automated data capture :** ESG reporting software should automate data capture from the source to significantly reduce the time, cost and effort of reporting.
- **Audit trails and data health checks :** ESG reporting software should ensure that all data captured is linked back to the transaction, including an audit trail for any changes subsequently made to that data.
- **Hierarchy management tools :** To make meaningful comparisons of emissions over time, a GHG inventory boundary must be established between data sets. ESG reporting software should apply built-in tools that help set and manage boundaries over time.
- **Global coverage :** ESG reporting software should support multi-country, multi-currency and multi-metric reporting. Additionally, it should allow for data capture in local units of measure and currencies and convert them to standard units.
- **Support for emission factors and carbon accounting methodologies:** ESG reporting software should maintain an emission factor engine for nationally-recognized carbon emissions factor data tables. In addition, it should allow system administrators to define custom time-varying factors.
- **Ability to set and recalculate baselines :** Baseline emissions need to be recalculated when structural changes occur in the organization that change the inventory boundary (such as acquisitions or divestments). ESG reporting software should simplify the process for recalculating baselines.
- **Target tracking capability :** Carbon accounting software should enable you to set targets to match your goal setting and performance management practices, as well as to meet voluntary or compliance reporting needs.
- **Support for reporting schemes and industry standards :** Carbon accounting software should help organize your data so it is easy to get the outputs required for reporting to various ESG frameworks.

Carbon accounting opportunity

Investors are evaluating sustainability performance alongside financial performance when making investment decisions. Organizations are making public commitments to deliver on these outcomes. Therefore, the processes and tools to capture and manage emissions reduction performance must meet the same robust requirements that are already in place for financial data.

Data must lie at the heart of any effective decarbonization strategy—to inform strategy and tactics and to deliver robust and verifiable reporting. Organizations that engage teams, establish robust governance processes for sustainability and energy data and use technology to derive insights will accelerate progress toward decarbonization goals and reap the rewards of a low carbon future.

Decarbonization

Decarbonization is the process of significantly reducing or eliminating carbon dioxide (CO_2) and other greenhouse gas (GHG) emissions from the atmosphere. To keep the global temperature from warming more than 1.5□C (2.7□F) above pre-industrial levels, many countries have set goals to reach net zero GHG emissions by 2050. Net zero is the point at which greenhouse gas emissions going into the atmosphere are balanced by an equivalent amount removed from the atmosphere. Rapid decarbonization efforts are necessary to achieve net zero emissions. Decarbonization requires, as a first step, drastic reduction of the releases of GHG emissions from human activities to the atmosphere. For residual emissions that are not able to be eliminated, steps must be taken to remove them from the atmosphere.

The term "decarbonization" generally captures all GHG emissions, including carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, nitrogen trifluoride, perfluorocarbons and hydrofluorocarbons. The potency of GHGs is measured by their global warming potential (GWP) expressed in CO_2 equivalents.

The more greenhouse gas emissions added to the atmosphere, the more the planet warms. The more the planet warms, the more significant the impacts of climate change will be. In 2015, nearly 200 nations committed to the Paris Agreement (link resides outside ibm.com) with the stated goal of limiting the Earth's warming to well below 2□C (3.6□F) above pre-industrial levels. Parties agreed that pursuing efforts to limit the temperature increase to 1.5□C above pre-industrial levels would significantly reduce the risks and impacts of climate change.

In its 2022 Emissions Gap Report, the United Nations Environment Programme (UNEP) (link resides outside ibm.com) warned that to get on track for limiting the global temperature increase to 1.5□C, in the next eight years global GHG emissions must be reduced by 45% compared to emissions reduction policies currently in place (link resides outside ibm.com). In addition, the United Nations report makes it clear that beyond 2030, carbon reductions must continue to decline rapidly to avoid exhausting the limited remaining atmospheric carbon budget (link resides outside ibm.com). Reducing global emissions through deep decarbonization is vital to altering the trajectory of climate change that human activity has caused.

Few strategies for decarbonization

Organizations make decisions in formulating their decarbonization strategy based on what makes sense for the business, what opportunities exist and what can be feasibly implemented.

Improve operational efficiency

Energy efficiency is the first fuel—the fuel you don't have to use.1 Looking internally to eliminate energy waste and identify opportunities to increase efficiency can help save resources and reduce energy system emissions. Performance monitoring software can identify energy use issues that manual, human monitoring may overlook. Other software can be used to benchmark asset performance against KPIs and highlight areas where energy consumption can be reduced. Additionally, when refreshing or upgrading equipment, energy-efficient technology should be selected.

Electrification

Electrification is the process of replacing technologies that use fossil fuels with technologies that use electricity as a source of clean energy. Examples of processes these technologies support include heating, cooling, ventilation, transportation and manufacturing.

Switch to low-carbon energy sources

Switching to low-carbon fuels or carbon-free renewable energy sources is something organizations can do today. This may take the form of installing renewable power generation technologies such as solar power (PV) across the organization's property portfolio, or contractual arrangements to procure renewable power from energy providers. Examples of carbon-free energy sources include wind, solar, hydropower and biomass.

Put a process in place to deal with residual emissions

It will be exceedingly challenging—if not impossible—to eliminate all GHG emissions from human activities, so reaching net zero GHG emissions will require removal of residual emissions through either natural processes or technology-based solutions. One such technology, Carbon Capture and Storage (CCS), involves capturing emissions from processes before they're released into the atmosphere followed by securely and permanently storing the captured emissions deep underground or making them available for further processing. Another technology is Direct Air Capture (DAC) technology, which sucks carbon dioxide out of the air by using fans to move air over substances that bind specifically to the carbon dioxide. Today, GHG emissions reduction is a key pillar in most organizations' sustainability strategies and ESG reporting. The following are key processes companies should follow for data management in the setting and tracking of decarbonization targets.

Understand impact and establish baselines

Before embarking on an emissions-reduction journey, organizations must first understand the impact of their operations and set baselines against which progress will be measured. Data is necessary to completing these steps, so strategic and upfront decisions help maximize the value of this data. These decisions include what data needs to be collected, where data should be stored, how data needs to be structured and managed and how to ensure data integrity and audit readiness. Establishing baselines and clear criteria for measuring performance (e.g., reductions in energy consumption and GHG emissions) enables performance assessment and drive improvements.

Next is determining which target to aim for and by when. The decision of examples of targets includes powering the operations with 100% renewable electricity, sourcing 100% of the energy a company consumes from renewables and achieving net zero GHG emissions on a timeline i.e., consistent with—or more aggressive than—the recommendations of the Intergovernmental Panel on Climate Change (IPCC) (link resides outside ibm.com) to limit the Earth's warming to 1.5□C above pre-industrial levels. Make your commitments public, clearly stating their scope and how you plan to measure progress.

Once the target is set, execution needs to kick in. Execution may begin with translating the high-level organization target into actionable steps all the way down to the individual asset level, such as HVAC systems. There are many dimensions that can be considered when breaking down a target, such as asset type, emissions source and location. Whichever approach is selected, it is important that the data needed to measure progress is identified, the data structure is configured to match and data reporting mechanisms are deployed. Only with the availability of factual and credible data can an organization be effective in identifying where they are exceeding expectations or where they are falling short. A superior data management platform needs to be a tool that helps inform strategic decisions.

Many organizations are seizing on the opportunity to report on their environmental performance as a key competitive differentiator. Examples of environmental KPIs include GHG emissions reduction and energy and water use efficiency. For others, increasing regulatory requirements and stakeholder expectations for information on sustainability performance are leading to more reporting. Either way, reporting requires a strong data foundation. It needs to be robust and set up to support various reporting motivations and frameworks.

Conclusion

Carbon auditing is, for many businesses, a vital part of reducing their carbon emissions. A completed carbon audit will allow businesses to fully grasp what their carbon emissions are and they can take steps to tackle them.

This could include implementing carbon reduction schemes or utilizing carbon offset programmes. However, there are limitations associated with carbon auditing and difficulties surrounding data collection and a lack of uniformity in the carbon foot printing sector could affect the results of a carbon audit.

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Jagdish Gupta

(8th October' 1953 - 10th May' 2024)

Jagdish Gupta, a well-known leather technologist, was born on October, 1953 at his native town Kanpur, U.P.

He completed his Diploma in Leather Technology from Govt. Leather Institute, Kanpur.

He started his career by serving various tanneries of Kanpur. Thereafter, he joined in CLRI, Jalandhar as a scientist & retired in October, 2013 after a long successful career.

Mr. Gupta was a well-accepted man and known for his detailed knowledge in leather tanning process.

After retirement, he was settled in his home town Kanpur.

He had been suffering from acute illness and had been put on strict medical care, he succumbed to the ailment on the fateful day of 10th May, 2024, leaving behind his family and innumerable admirers.

Late Mr. Gupta was a senior Life Member of ILTA & also, an Executive Committee Member of ILTA – Northern Region for the term 2022-2024.

We pray to almighty to bestow enough courage to his family & near and dear ones to bear with this untimely bereavement and let his soul rest in peace.

ANNOUNCEMENT

ILTA LAUNCHED HEALTH CARE BENEFIT FOR ITS MEMBERS

Indian Leather Technologists' Association (ILTA), a member society of IULTCS and a pioneer organization in the field of leather industry, has now tied up itself with the hospital the Narayana group for Eastern India with a view to giving Indoor, Outdoor and Medical testing services to all of its registered (both life and ordinary) members at concessional rates.

Offer & Discount :

1. **OPD Service:** 10% discount on Doctor's Consultation, Prevailing Health Check-ups available at hospital, day care procedures, Investigations except outsourced tests.
2. **IPD:** 5% on total IPD billing as per prevailing hospital tariff excluding medicine / consumable / implant / outsource & blood bank services. (Not applicable on insurance cases/ Govt scheme / ESIC and any other schemes & promotional package or offers & discounts).
3. **Ambulance:** As per Availability & as per Narayana Health ambulance policy & charges.
4. **Payment Terms:** Payment should be only in Cash Mode, Debit Card, Credit Card, NEFT/RTGS/ IMPS. No cheques shall be accepted.

These facilities will be extended to its existing members (both Life & Ordinary) only. Six family members including spouse, two children (below 25 years) and dependent parents will be entitled to avail these facilities. The persons concerned may contact Mr. Bibhas Chandra Paul, OSD, ILTA (Mob. No. 9432553949) and / or Mr. Subha Paul, Assistant Manager - Payor Relation, Narayana Health (Mob. No. 8334847000) for further details.

ILTA will issue a Health Card in favour of each Member. Thus, Members are requested to collect the prescribed application format to avail this facility either from ILTA Office or through email.

ILTA IS NOW ON DIGITAL PLATFORM

Indian Leather Technologists' Association is now set for digitalization of its all publications. The members and non-members alike are eligible for this facility. The association has been publishing number of books on leather & footwear technology since inception. Also, the Association has a great collection of number of articles from renowned personalities & scientists of leather fraternity worldwide which has been publishing in our only technical journal namely "Journal of Indian Leather Technologists' Association (JILTA)".

All the above facilities will be available to all the interested peoples on digital platform through the official website of the Association very soon.

This is the transcripted version of the lecture delivered by Dr. Dipanjan Majumder in the webinar organized by ILTA on 18th April, 2024

Awareness & Prevention of Cancer

Dr. Dipanjan Majumder

MBBS, MD (Radiotherapy), DNB (Radiotherapy)
Consultant - Radiation Oncology
Narayana Health, Kolkata

"Close the care gap" is the theme of World cancer day for last 3 years. Why is this statement so important? It has been seen that we are not up to the mark in terms of preventing cancer mortality or morbidity as per stage of disease always. There are numerous causes behind that, some important causes are misinformation about the disease, reluctance in diagnosing the condition, delay in initiation of treatment etc. So awareness regarding the disease among the general population is most important issue in present days.

If somebody is getting diagnosed with cancer, what should be our approach to handle this deadly disease? First of all, a very basic idea about cancer is necessary. Whenever we are listening to this particular disease, everybody should know what exactly are we talking about.

Why is this important? Because, we know about heart disease. We know about brain stroke. Diabetes, increased level of cholesterol or hyperlipidaemia, this type of disease we have heard. So if somebody is saying that I have diabetes, everybody can understand, yes, he has got some problem related to his blood sugar level. But if anybody is saying that a patient is suffering from cancer, there is a type of misinformation or many people don't understand what exactly this disease is and this is very important. If somebody is getting this particular disease, any of your neighbours or any of your relatives, anybody, only thing people understand that cancer is a disease which is going to kill. That is the common notion which has been propagated among the people. And for definite reasons, I am not saying that they are absolutely wrong because this is difficult to control and there is a very high mortality rate.

But the important thing is not only cancer, there are many other non-malignant diseases which has got a higher mortality rate even more than cancer. Still, we do not have heard of that disease or we do not be very scared if somebody is saying this type of disease has been diagnosed. But in case of the cancer, it is not like that. It is interesting to note that some of the cancers are very low grade cancer. Even if you are going to say a patient that you have got low grade cancer, patient will be afraid that probably that might be the end of his life. That is why the concept of cancer has to be very clear.

After the concept of the cancer, what are the other important information relevant in this scenario? Some specific questions usually asked by the patient's relative, like how the cancer has been diagnosed? What are the risk factors of the cancer? What does the cancer stage actually mean? Or cancer can be prevented or not? Now, let me first try to give the answer of the first question that what is cancer? In simple language cancer is uncontrolled growth of cell in our body. The cell division is uncontrolled. Whenever a child is born and he or she grows up, all the organs will get matured by the function and the structure and the shape following the laws of cell division. But the cancerous cell will not follow any basic rules of the cell division. A complete lawlessness in case of the cell division is called cancer. This is a spectrum of diseases. Each and every site of human body can be affected by this disease but the biology of each disease would be different, that is why no single treatment can be curative in cancer, there is no magic pill simply because of complexity in nature of the disease itself. If we have got some non-cancerous tumour or benign tumour, probably there will be a little bit of extra growth of some cell, but the control of cell growth or control of cell cycle will not be lost. That is why there will be a certain extra cell development, but that will never be uncontrollable. But in case of the cancer, there is uncontrolled and unpredictable cell division.

That is why we have to give various types of treatment to treat cancer. The treatment varies depending on stage of the disease and that is why the stage is very important in this particular disease. Now, you can appreciate that a cancer cell not only divide innumerably, it can spread to other sites as well. If some cancer cell has been developed in rectum or in any part of the body like in breast or in other part, initially there will be a tumour, but as this is uncontrollable, tumour growth will not stop. After a certain period of time, the number of cells will be so high that these cells will actually travel through the bloodstream or through the lymph glands to different part of the body to get deposited in different part of the body.

Then the breast cancer cell can be deposited in the liver and there will be a secondary deposit of a metastatic disease in the liver. That is how the cancer cells actually spread in the body and that is why the stage is very important.

Roughly the cancer stage means if a tumour is locally placed, e.g. Breast tumour limited to the breast is categorised as localised cancer mostly stage I or II. If this has spread to surrounding area, e.g. breast cancer invading axilla/armpit, will be called loco regional disease mostly stage II or III. If disease spreads to distant organ it will be called stage IV disease.

Tobacco usage is main cause of cancer in this subcontinent. Not only tobacco, if somebody is having cigarettes, even the foil which is used to cover the tobacco, the filter itself, and lot of other particles will act as carcinogen. Carcinogen means a specific substance which can cause cancer. Cigarette will have all forms of carcinogens, and not only the cigarettes, any form of tobacco like the 'paan', 'jarda', 'gutkha' will be associated with various form of cancer.

Association of diet is not as strong as the tobacco, but there are some dietary modifications advised from some sparse literature that we should actually avoid the junk foods, the food cooked at high temperature, the food with preservatives, and the frequent intake of the red meat etc. We should try to avoid as much as possible.

Another important aspect is not only the food and tobacco, even the lifestyle can be a causative factor of the cancer, like the obesity, lack of exercise and stress. These particular three things, we are going through in this phase of life. This phase of life is very new to us because three to four decades back, or not only three to four, even two to three decades back this was not a big problem. But right now, most of the jobs are table jobs and most of the jobs will be done sitting on the table inside the AC room and there is absolutely no physical activity.

Mostly people are traveling by some sort of motorised vehicles. Cycling, walking which people used to do in the previous decades, are presently almost out of the way in many cities. So urban life itself is a type of a concern in terms of the development of many non-communicable disease even cancer because the triad, lack of exercise will cause obesity and that will cause stress and stress will again cause a lack of exercise and this will go on a cyclical way. This can cause some sort of hormonal changes in the female body and that might be a causative factor in development of cancer. I'm not saying everybody of that lifestyle will develop cancer, but there is a risk, a definite risk. Environmental pollution is increasing day by day though we cannot avoid, this is a type of unmodifiable risk factor of the cancer.

Now, let me discuss about cancer in India. More than 10 lakh of cancer patients per year have been diagnosed, and almost 60 to 70 thousand of the death is caused by the cancer. What are the common cancers in India? In female, first two common cancers are breast and cervix cancer, and in men, mostly head and neck, commonly oral cavity, and then lung cancer are the commonest.

Let me give brief idea of the female cancers. Though these two cancers are very important or very much prevalent in female population, but you will be delighted to know that these two cancers can easily be detected early if proper awareness of these diseases can be created. You have definitely heard a particular phrase that 'cancer is curable if it is treated early' and whatever form of treatment modification or the advancement in our treatment delivery system being developed, the phrase will always be the same, because whatever the treatment advancement we will do, we cannot compare the stage I cancer with the stage IV cancer. If stage I cancer, cure rate is 90 % , with the advancement of the treatment, probably we can increase it up to 95 to 97 % , and in stage four cancer a 10 % cure rate can be increased to 15 – 20 % with advancement of technology and medicines , but they can never match the response of stage I diseases. With all sort of modern treatment modalities we could achieve to increase the response rate stage wise but stage III/IV can't be compared to stage I/II. Early diagnosis and treatment is always preferable to have the best results. You will be delighted to know that the breast and cervix cancer, most common female cancers in our country, can be detected at very early stage. In case of the breast and cervix cancer, if people can be a little bit aware, they can actually be diagnosed in very early stage and sometimes even before stage I also, which is called a screen-detected cancer. What are those? I'll just give an idea about that.

Breast cancer is a common cancer above the 40 years of age, mostly it has been seen in the 50 to 65 years of age group, and it is the number one statistically. Now the important stat is in urban populations, one out of 22 women will have breast cancer, whereas the number is one out of 60 in rural population. Therefore breast cancer is mainly an urban disease.

Why is this? Because in urban population, there are some certain lifestyles among the females which can actually act as a precursor of the breast cancer. What are those lifestyle factors? First of all, obesity, lack of exercise, and stress this triad will be definitely be one factor, but beyond that also, hyper exposure of a specific female hormone, that is called the oestrogen, will actually be a risk factor of a breast cancer. So how will hyper exposure of this particular hormone be there? There are some specific female conditions by which this can be possible.

One is early menarche that means the period starts earlier than usual timeframe. Late menopause, that means the menopause, the stoppage of the periodic blood loss will be delayed compared to the usual time period. Nulliparity that means the patient don't have any kids.

Late marriage, lack of breastfeeding, these are all type of risk factors, which is common to the urban population because the lifestyle in the urban group of females will actually be a precursor of this type of risk factors. And in rural area, it is less because this type of life style we generally do not see there. There are definitely some other genetic factors because the breast carcinoma has got some genetic association also, so you might have heard about the BRCA1, BRCA2 mutation. Which can be causative factor of this disease.

If somebody is suffering from breast cancer, what can they do? First of all, people should be aware about the changes in the breast.

Common changes are some skin changes, some changes in the nipple areola complex, thickening of the skin, any indentation of skin or nipple areolar region, any tumour, discharge and blood coming from any part of the breast. If this type of symptom happens, people should not ignore.

Blood coming from the breast tissue or some massive skin change, people usually don't ignore, but people cannot understand initial small lumps in the breast because the lump cannot be always evaluated. Because breast is a glandular tissue, a breast lump, sometimes very difficult to appreciate. That is why it has been advised that breast examination can be one important tool to assess the breast.

How is it possible? It has been advised to any women, age 20 years or older, that they should palpate their breast at least once a month. Palpate means to check at least once a month, preferably the same day of each month. They should use the palmar surface of the finger, that means the ventral surface of the finger and loosely check the breast in up and down direction and in wedge or circular fashion to check for any abnormality. If any lumpiness or tumour or any lump is there, they should keep a note on that. Now, very important to know that most of the breast lump are benign. Most of the tumour will be fibroadenoma and fibroadenoma mostly will not require any treatment. Just getting a breast lump nobody should panic. Sometimes the glands will be feeling like a lump. That is a normal physiological process.

But even if one or two will have cancer in that group, then they should be treated because they will be in a stage I/II mostly. Another thing is mammogram. Mammogram is a test which is advised after 45 years of age of a female. Annual mammography is actually important because mammography can detect a breast tumour prior to the clinical appreciation of a breast lump. That means it is almost 100% curable in most of the cases. That is why the mammography is advised on an annual basis in an older group of women. Because before 45 years of age, mammography is not advisable and mammography will not give you much information about that.

Treatment of breast cancer carcinoma mostly surgery, chemotherapy, radiation therapy, hormone therapy, targeted therapy.

Now second cancer is the cervical cancer. Again cervical cancer presents with vaginal bleeding. People usually not report the problem at initial period. Sometimes women have persistent vaginal bleeding, but they are shy to go to the doctor to deal with this type of issues.

Not only doctor, they even will not tell to their family members. When this bleeding gets very severe and she starts to be anaemic, there will be a lot of medical complications, then she will be taken to the hospitals and the cervical carcinoma has been diagnosed. Mostly the cervical carcinoma is a rural disease because there are some sort of the hygiene related issues with this particular carcinoma.

In overcrowded place hygiene might not proper. In that case or in those group of female the chances of the cervical cancer is higher. Now there is again there is almost 1.34 lakh of cancer and 70,000 death of cervical cancer.

The important causative factor of cervical cancer is human papilloma virus. This particular virus is a sexually transmitted and some of the strains of this virus actually cause changes in the cervical mucosa.

Some strains of the HPV will change the cervical mucosa and cancer will be developed. Who are at the higher risk of getting HPV infection? Women who have multiple sexual partners because before attaining the sexual maturity HPV is unlikely.

Women with multiple sexual partners, patients on long standing immunosuppressant medications, patients with organ transplant, patients who received chemotherapy, HIV infected patients are at higher risk of HPV infection. Classical cervical cancer symptom is bleeding per vagina after intercourse. Bleeding after menopause and in an advanced stage even pelvic pain, back pain is also possible. Now like the breast cancer again we can detect the cervical cancer very early.

First of all we have to do the Pap smear test. Pap smear test in a female after 20 years of age can identify some sort of the abnormal cells even before the development of the cancerous cell. If any abnormal cells can be detected we can actually put those patients in surveillance so in cancerous transformation we can treat immediately. That is why after 20 to 21 years Pap smear should be done in women on a three-yearly basis. Interesting fact about cervical cancer is the 5 year survival rate in stage I disease is more than 95 % , for stage II it is around 80 percent, stage III it is around 50 to 60 percent, and for stage four it is almost 15 percent. Transition from this stage I to stage IV will take hardly about one to two years. So a patient if presented in the OPD with stage I cervical cancer, probably she will be cured with treatment. But patient usually delays. There are several factors for that. Sometimes there is denial to accept the diagnosis, sometimes indecision regarding selection of place of treatment, sometimes different logistic issues come in between the disease and the treatment of disease. One thing should be kept in mind that whatever might be the reason, delay in treatment initiation will always diminish the chance of cure. Stage one is always better than the stage four no matter what form of best treatment can be offered. Now HPV vaccination can be given to eradicate the cervical cancer. Initially it has been advisable to girls of 11 years of age but can be given up to 27 years. After 30 years, role is debatable.

Now, what should be a proper diet for healthy life? It is preferable to have a balanced diet, which is mostly possible for many of us. What is balanced diet? Small but frequent meal is preferable at least Four times a day. Lot of vegetables and lot of fruits to be included in the diet and red meat, fried, smoked food or fast food or junk food to be avoided as much as possible.

Let's cover some aspects of male cancers. Male carcinomas are mostly tobacco related. If the tobacco usage will be decreased, the male carcinoma will be diminished drastically in near future, but it is not possible because a lot of people are still using tobacco in a large extent and that is why the lung cancer and the head and neck cancer are very frequent in our country.

Head and neck cancer is common form of male cancer. There are some specific symptoms like persistent hoarseness of voice, non-healing ulcer of oral cavity, persistent difficulties in food intake, blood mixed sputum. Patients with these symptoms should be evaluated carefully by the specialists. If biopsy is suggested then it has to be done. There is nothing to be worried about biopsy because biopsy is the only investigation giving a tissue diagnosis.

Head neck cancer can be detected early because the symptoms usually appear early but lung cancer early diagnosis is difficult because lung cancer at early stage will not give any symptom. So getting rid of any habit of tobacco usage is the key to reduce the lung cancer.

Cancer treatment includes radiation therapy, surgery and systemic therapy. Systemic therapy can be chemotherapy, targeted therapy, biotherapy, hormonal therapy, and immunotherapy. In all of these three fields, there are tremendous improvement in the last two to three decades.

At present robotic surgery is possible. Very deep seated tumour operation and difficult anatomic location exploration was initially a difficult task but now with the help of robot it is very much achievable.

In radiotherapy also there are significant advancement. With IMRT / IGRT technique we can target our area of interest only and can prevent radiation dose to nearby normal organ. Now a days we can even target a moving tumour which was out of imagination even few decades back. We can treat the tumour as per their motion like the lung tumour. This type of tumour is continuously moving and our machine is designed in such a way that we can actually track the tumour motion and treat so the whole organ dose can be minimised.

Lastly I would like to say that we can fight better with cancer, only if we are aware of this disease. Misinformation, misguidance, reluctance, denial all can be deadly because this disease usually leave no scope for error. You have to fight, you have to fight very hard both as a patient and as a caregiver to cope up with the situation once diagnosed.

ANNEXURE - I

ANALYSIS – EXPORT PERFORMANCE OF LEATHER, LEATHER PRODUCTS AND FOOTWEAR DURING APRIL-MARCH 2023-24 VIS-À-VIS APRIL-MARCH 2022-23

As per officially notified DGCI&S monthly export data, the export of Leather, Leather products &Footwear for the period April – March 2023-24 touched US $ 4687.75 Mn as against the performance of US $ 5259.53 Mn in April-March 2022-23, recording a decline of -10.87%. In rupee terms, the export touched Rs. 388332.92 Mn in April-March 2023-24 as against Rs. 421987.58 Mn in April-March 2022-23, registering a decline of -7.98%.

EXPORT OF LEATHER, LEATHER PRODUCTS & FOOTWEAR FROM INDIA
During April-March 2023-24 VIS-À-VIS April-March 2022-23

(Value in Million Rs)

PRODUCT	APR-MAR 2022-23	APR-MAR 2023-24	% VARIATION	% SHARE 2022-23	% SHARE 2023-24
FINISHED LEATHER	34575.55	36899.62	6.72%	8.19%	9.50%
LEATHER FOOTWEAR	190760.08	165876.98	-13.04%	45.21%	42.72%
FOOTWEAR COMPONENTS	23289.14	21440.51	-7.94%	5.52%	5.52%
LEATHER GARMENTS	28336.22	28110.38	-0.80%	6.71%	7.24%
LEATHER GOODS	104364.53	102148.222	-2.12%	24.73%	26.30%
SADDLERY AND HARNESS	17783.91	15091.63	-15.14%	4.21%	3.89%
NON-LEATHER FOOTWEAR	22878.15	18765.58	-17.98%	5.42%	4.83%
TOTAL	**421987.58**	**388332.92**	**-7.98%**	**100.00%**	**100.00%**

Source : DGCI &S

(Value in Million US$)

PRODUCT	APR-MAR 2022-23	APR-MAR 2023-24	% VARIATION	% SHARE 2022-23	% SHARE 2023-24
FINISHED LEATHER	430.93	445.41	3.36%	8.19%	9.50%
LEATHER FOOTWEAR	2377.23	2002.38	-15.77%	45.20%	42.72%
FOOTWEAR COMPONENTS	289.81	258.92	-10.66%	5.51%	5.52%
LEATHER GARMENTS	353.07	339.47	-3.85%	6.71%	7.24%
LEATHER GOODS	1301.34	1232.84	-5.26%	24.74%	26.30%
SADDLERY AND HARNESS	222.17	182.17	-18.00%	4.22%	3.89%
NON-LEATHER FOOTWEAR	284.98	226.56	-20.50%	5.42%	4.83%
TOTAL	**5259.53**	**4687.15**	**-10.87%**	**100.00%**	**100.00%**

Source : DGCI &S

MONTH WISE EXPORT OF LEATHER, LEATHER PRODUCTS & FOOTWEAR FROM APRIL 2023 TO MARCH 2024

(Value in Million US$)

PRODUCT	APRIL 2023	MAY 2023	JUNE 2023	JULY 2023	AUG 2023	SEPT 2023	OCT 2023	NOV 2023	DEC 2023	JAN 2024	FEB 2024	MAR 2024	TOTAL APR-MAR 24
FINISHED LEATHER	40.53	38.54	38.02	33.39	40.41	36.6	35.44	39.79	37.86	31.99	32.35	40.49	**445.41**
LEATHER FOOTWEAR	142.51	180.63	188.3	202.81	192.44	136.73	143.3	147.99	165.73	179.5	162.88	159.56	**2002.38**
FOOTWEAR COMPONENTS	23.54	26.63	24.64	24.9	21.98	18.75	19.39	18.68	20.15	20.1	19.42	20.74	**258.92**
LEATHER GARMENTS	24.24	30.11	34.27	38.71	39.51	31.47	28.38	24.48	25.09	25.15	21.24	16.82	**339.47**
LEATHER GOODS	96.03	92.94	112.61	104.8	113.54	106.85	105.5	100.23	104.85	96.32	93.67	105.5	**1232.84**
SADDLERY AND HARNESS	13.03	14	16.69	17.56	17.72	14.69	15.28	13.48	14	14.21	14.77	16.74	**182.17**
NON-LEATHER FOOTWEAR	21.92	22.67	19.08	17.97	19.18	14.74	18.02	15.96	15.37	19.12	20.45	22.08	**226.56**
TOTAL	**361.8**	**405.52**	**433.61**	**440.14**	**444.78**	**359.83**	**365.31**	**360.61**	**383.05**	**386.39**	**364.78**	**381.93**	**4687.75**

Source : DGCI &S

ANNEXURE - II

ANALYSIS – COUNTRY WISE EXPORT PERFORMANCE OF LEATHER, LEATHER PRODUCTS & FOOTWEAR FROM INDIA DURING APRIL-MARCH 2023-24 VIS-A-VIS APRIL-MARCH 2022-23

(Value in Million US$)

COUNTRY	TOTAL			SHARE IN TOTAL EXPORT 2022-23	SHARE IN TOTAL EXPORT 2023-24
	APR-MAR 2022-23	APR-MAR 2023-24	% CHANGE 2023-24		
U.S.A.	1173.08	896.63	-23.57%	22.30%	19.13%
GERMANY	579.33	530.12	-8.49%	11.01%	11.31%
U.K.	481.55	400.77	-16.77%	9.16%	8.55%
ITALY	354.82	319.62	-9.92%	6.75%	6.82%
FRANCE	281.28	247.09	-12.16%	5.35%	5.27%
SPAIN	228.54	236.22	3.36%	4.35%	5.04%
U.A.E.	123.87	113.80	-8.13%	2.36%	2.43%
NETHERLANDS	219.80	189.38	-13.84%	4.18%	4.04%
HONG KONG	57.52	66.29	15.25%	1.09%	1.41%
CHINA	147.24	142.37	-3.31%	2.80%	3.04%
POLAND	81.48	104.61	28.39%	1.55%	2.23%
BELGIUM	135.79	164.08	20.83%	2.58%	3.50%
SOMALIA	41.97	30.00	-28.52%	0.80%	0.64%

COUNTRY	TOTAL			SHARE IN TOTAL EXPORT 2022-23	SHARE IN TOTAL EXPORT 2023-24
	APR-MAR 2022-23	APR-MAR 2023-24	% CHANGE 2023-24		
VIETNAM	64.78	81.74	26.18%	1.23%	1.74%
AUSTRALIA	94.01	78.72	-16.26%	1.79%	1.68%
PORTUGAL	71.37	51.17	-28.30%	1.36%	1.09%
DENMARK	81.52	50.52	-38.03%	1.55%	1.08%
KOREA REP.	46.74	38.89	-16.80%	0.89%	0.83%
JAPAN	77.88	74.73	-4.04%	1.48%	1.59%
RUSSIA	44.84	62.48	39.34%	0.85%	1.33%
S. AFRICA	36.76	33.97	-7.59%	0.70%	0.72%
CHILE	41.39	37.53	-9.33%	0.79%	0.80%
MALAYSIA	29.86	34.96	17.08%	0.57%	0.75%
AUSTRIA	55.65	46.49	-16.46%	1.06%	0.99%
CANADA	70.34	52.84	-24.88%	1.34%	1.13%
SWEDEN	27.04	24.87	-8.03%	0.51%	0.53%
NIGERIA	15.05	11.37	-24.45%	0.29%	0.24%
INDONESIA	23.47	24.57	4.69%	0.45%	0.52%
MEXICO	37.85	39.55	4.49%	0.72%	0.84%
SAUDI ARABIA	43.36	46.65	7.59%	0.82%	1.00%
KENYA	10.34	10.94	5.80%	0.20%	0.23%
SWITZERLAND	22.54	16.76	-25.64%	0.43%	0.36%
SLOVAK REP	19.26	8.22	-57.32%	0.37%	0.18%
HUNGARY	11.42	9.96	-12.78%	0.22%	0.21%
THAILAND	16.39	18.83	14.89%	0.31%	0.40%
BANGLADESH	17.54	17.32	-1.25%	0.33%	0.37%
FINLAND	18.76	13.37	-28.73%	0.36%	0.29%
TURKEY	24.29	24.10	-0.78%	0.46%	0.51%
ISRAEL	17.55	17.46	-0.51%	0.33%	0.37%
CAMBODIA	8.41	10.48	24.61%	0.16%	0.22%
CZECH REPUBLIC	11.17	13.05	16.83%	0.21%	0.28%
GREECE	9.77	11.18	14.43%	0.19%	0.24%
NEW ZEALAND	9.49	7.14	-24.76%	0.18%	0.15%

COUNTRY	TOTAL			SHARE IN TOTAL EXPORT 2022-23	SHARE IN TOTAL EXPORT 2023-24
	APR-MAR 2022-23	APR-MAR 2023-24	% CHANGE 2023-24		
OMAN	9.63	8.52	-11.53%	0.18%	0.18%
SRI LANKA DES	6.66	9.57	43.69%	0.13%	0.20%
SINGAPORE	10.93	13.09	19.76%	0.21%	0.28%
SUDAN	2.89	0.55	-80.97%	0.05%	0.01%
TAIWAN	6.67	6.33	-5.10%	0.13%	0.14%
NORWAY	7.71	7.68	-0.39%	0.15%	0.16%
DJIBOUTI	2.32	3.13	34.91%	0.04%	0.07%
OTHERS	247.58	228.04	-7.89%	4.71%	4.86%
TOTAL	**5259.73**	**4687.75**	**-10.87%**	**100.00%**	**100.00%**

Source : DGCI &S

The Top 15 countries together account about 77.78% of India's total leather & leather products export during April-October 2023 with export value of US $ 3646.17 Mn.

ANNEXURE - V

ANALYSIS – INDIA'S IMPORT OF LEATHER, LEATHER PRODUCTS AND FOOTWEAR DURING APRIL-MARCH 2023-24 VIS-À-VIS APRIL-MARCH 2022-23

PRODUCT	APR-MAR 2022-23	APR-MAR 2023-24	% VARIATION	% SHARE IN 2022-23	% SHARE IN 2023-24
RAW HIDES AND SKINS	32.93	21.31	-35.29%	2.24%	1.78%
FINISHED LEATHER	450.72	379.43	-15.82%	30.68%	31.72%
LEATHER FOOTWEAR	481	442.17	-8.07%	32.75%	36.97%
FOOTWEAR COMPONENTS	35.36	21.53	-39.11%	2.41%	1.80%
LEATHER GARMENTS	1.4	2.01	43.57%	0.10%	0.17%
LEATHER GOODS	60.07	67.13	11.75%	4.09%	5.61%
SADDLERY AND HARNESS	3.41	2.57	-24.63%	0.23%	0.21%
NON-LEATHER FOOTWEAR	403.99	259.86	-35.68%	27.50%	21.73%
TOTAL	**1468.88**	**1196.01**	**-18.58%**	**100.00%**	**100.00%**

Source : DGCI &S

As per officially notified DGCI&S monthly India's Import Data, the Import of Raw Hides & Skins, Leather and Leather products for the period April-March 2023-24 touched US $ 1196.01 Million as against the performance of US $ 1468.88 Million in April-March 2022-23, recording a decline of -18.58%.

MONTH WISE INDIA'S IMPORT OF LEATHER, LEATHER PRODUCTS & FOOTWEAR DURING APRIL - MARCH 2023-24

(Value in Million US$)

PRODUCT	APRIL 2023	MAY 2023	JUNE 2023	JULY 2023	AUGUST 2023	SEPT 2023	OCTOBER 2023	NOV 2023	DEC 2023	JAN 2024	FEB 2024	MAR 2024	TOTAL APR-MAR 24
RAW HIDES & SKINS	2.1	1.63	1.82	2.23	2.01	1.88	1.73	1.58	1.77	1.48	1.39	1.69	21.31
FINISHED LEATHER	32.28	41.2	25.98	34.02	35.1	34.54	32.16	29.36	25.27	26.65	31.17	31.7	379.43
LEATHER FOOTWEAR	23.14	46.34	66.28	32.96	26.08	33.89	38.51	64.11	59.64	19.18	17.3	14.74	442.17
FOOTWEAR COMPONENTS	2.16	2.46	1.24	1.29	1.14	2.01	1.87	1.25	1.82	1.85	1.77	2.67	21.53
LEATHER GARMENTS	0.05	0.12	0.15	0.11	0.21	0.15	0.29	0.28	0.15	0.15	0.18	0.17	2.01
LEATHER GOODS	4	4.93	6.45	5.22	6.76	4.45	7.99	4.39	6.69	5.54	5.79	4.92	67.13
SADDLERY AND HARNESS	0.11	0.26	0.24	0.22	0.37	0.19	0.21	0.12	0.26	0.14	0.22	0.23	2.57
NON-LEATHER FOOTWEAR	25.48	42.42	41.25	14.75	10.84	17.71	22.31	38.63	29.9	6.18	5.75	4.64	259.86
TOTAL	**89.32**	**139.36**	**143.41**	**90.8**	**82.51**	**94.82**	**105.07**	**139.72**	**125.5**	**61.17**	**63.57**	**60.76**	**1196.01**

Source : DGCI &S

MR. RAMESH JUNEJA ELECTED AS VICE CHAIRMAN OF CLE

Indian Chemical Promotion Association has organised an event on 22nd June, 2024 at Prime Residency, Calcutta Leather Complex to felicitate Mr. Ramesh Juneja, for being elected as Vice Chairman of Council for Leather Exports.

The members of the Association are proud for Mr. Juneja who is also the President of ILCPA & CLCTA. Dignitaries from CLCTA, ILTA, ILPA & Industry were present to witness this momentous occasion.

Mr. Arnab Jha, President, ILTA, Mr. Arjun Kulkarni, President, ILPA, Mr. Tapan Nandi, Chairman, LPG, Mr. Zia Nafis & Mr. Shahid Parvez, Vice Presidents of CLCTA, Mr. H. N. Rathi, Mr. Susanta Mallick, Vice Presidents, ILCPA, Mr. Mukesh Johar, Ex-President, Mr Ratan Chowdhury, Founder Secretary & Mr. Sundeep Kundra, Secretary of ILCPA, spoke on this occasion and expressed their gratitude for remarkable contribution of Mr. Ramesh Juneja.

On this occasion, ILCPA has also organized a motivational Lecture on co relation of Chemical & Leather industry for a sustainable mutual growth at this difficult juncture.

Mr. Diganta Ghosh, Director, TFL Quinn India Pvt. Ltd. has delivered an extremely useful Lecture for about 40 minutes which was very effective and inspiring.

Around 50 people from cross section of the industry have participated. The event is concluded with vote of Thanks by Mr. Sundeep followed by high Tea. Overall, the event is organized success-fully.

(Source : Report from ILCPA)

PLI SCHEMES FOR LEATHER AND FOOTWEAR, TOYS STILL ON THE TABLE, SAY SOURCES

Proposals for Production Linked Incentive (PLI) schemes for toys and leather and footwear are still "very much on the table" and the government is working on them although no announcements have been made on these since token allocations were sanctioned for both schemes in the interim Budget announced in February this year, sources said.

Simultaneously, the government is also considering changes in some of the existing schemes for sectors that are not doing as well as expected, such as textiles, auto, drug intermediaries and APIs, medical devices, speciality steel and batteries, to make them more attractive for investors, they said.

"Some provisions were made for PLI schemes in toys and leather and footwear in the last Budget. Work on the schemes was not expedited as the government has also been focussing on making the existing schemes work better. But the proposals are very much on the table and are being worked out," a source said.

The time for announcing the schemes has not been decided yet and it could happen in next month's full Budget presentation or later, the source added.

The PLI scheme for 14 sectors was announced by the NDA government in 2021 with an outlay of Rs.1.97-lakh crore to incentivise local production in strategic sectors and encourage exports. These sectors include mobile manufactu-ring and specified electronic components; drug intermediaries and APIs; medical devices; automobiles and auto components; pharmaceutical drugs, specialty steel, telecom and networking products; electronic/technology products; white goods (ACs and LEDs), food products, textiles (MMF segment and technical textiles), high-efficiency solar PV modules, ACC battery, and drones and components.

Changes under way

"As only a handful of these sectors, mainly mobile manufacturing, have done well, changes in some of the other sectors are being worked out based on inputs from line ministries and industry representatives to make the schemes more flexible and attractive for investors," the source said.

The PLI scheme is based on incentivising incremental sales of goods manufactured in India. Stakeholder consulta-tions conducted by the DPIIT indicated that strict timelines and ambitious criteria for minimum investment and sales may have been acting as a barrier to investments in some areas.

The interim Budget announced in February 2024 before the General Elections proposed extension of the PLI scheme to the leather and footwear sector with a token outlay of Rs. 2,600 crore, while for the toys sector, the token outlay was fixed at Rs. 3,489 crore. Commerce and Industry Minister Piyush Goyal had clarified that the schemes had not been given a Cabinet nod.

About Rs. 9,700 crore has been disbursed to PLI beneficiaries, which is about 5 per cent of the total allocation, per latest available data.

(Source : thehindubusinessline.com – 20/06/2024)

TNPCB IMPOSES RS. 2.6 LAKH FINE ON TANNERY NEAR VANIYAMBADI FOR DISCHARGE OF EFFLUENTS INTO PALAR RIVER

The Tamil Nadu Pollution Control Board (TNPCB) on Thursday imposed a fine of Rs. 2.6 lakh on Waseem Hasan

Tanneries, which is one of the largest exporters of leather in Tirupattur, for illegal discharge of effluents into Palar river.

Officials of TNPCB said the main tannery unit of the company was shut down a few months ago after a team of officials from Vaniyambadi inspected the tannery unit. The team, which was then led by V. Gopalakrishnan, district environment officer, TNPCB (Tirupattur), found the tannery operating without valid authorisation under the Hazardous Waste Management Rules and was flouting norms under Water Act and Air Act. "The fine has been imposed for causing damage to the environment including the river. Regular checks are being done at leather units in the region," Mr. Gopalakrishnan said.

TNPCB officials said the tannery was one of the members of Vanitec Limited that had been authorised in collecting wastewater from 134 tanneries in Vaniyambadi - Ambur region and treating them through its Common Effluent Treatment Plant (CETP) located in Valayampet, Vaniyambadi, for reuse. Also, the tannery has its own treatment plant inside the spacious premises.

However, the team found the treatment plant inside the tannery was defunct. Underground pipelines were laid towards the river rather than to the treatment plant. Based on the inspection, Mr. Gopalakrishnan ordered the closure of the tannery. Power supply to the tannery was also cut by Tangedco based on orders by TNPCB. The board warned that strict action would be taken against tanneries for flouting pollution control norms and illegal discharge of effluents into waterbodies. At present, more than 300 tanneries operate in Vaniyambadi - Ambur leather belt, TNPCB officials said.

(thehindu.com – 13/06/2024)

ARCHROMA WINS FOR SUSTAINABILITY INNOVATION AND COMMUNITY ENGAGEMENT AT THE 2024 JUST STYLE EXCELLENCE AWARDS

Archroma, a global leader in specialty chemicals towards sustainable solutions, has won major awards in two categories at the Just Style 2024 Excellence Awards. It took home two coveted *Innovation Excellence* awards for its ground-breaking SUPER SYSTEMS+ solutions and AVICUERO® leather tanning process, as well as a *Social Excellence* award for its longsta-nding and holistic commitment to community engagement in Baroda, India.

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The awards recognize how Archroma is driving change with innovations that advance sustainability and through initiatives that contribute to the socio-economic progress of communities near to its Baroda manufacturing plant.

"As an industry leader working with textile and fashion brands and suppliers worldwide, we like to say that Archroma touches and colors people's lives every day—and we are very aware that this creates a huge responsibility," Paul Cowell, Vice President of Innovation, Marketing, Brands & Sustainability, Archroma Textile Effects, said. "We are honored to be recognized in the Just Style Excellence Awards, and we remain committed to people-centered sustainability under our PLANET CONSCIOUS+ vision of the future."

Innovation Awards for Sustainability Breakthroughs

Archroma was recognized for advancing sustainable manufacturing in two Just Style Excellence Awards for Innovation.

SUPER SYSTEMS+ is a comprehensive suite of solutions that addresses the textile industry's key challenges, including water consumption, greenhouse gas emissions, circularity, chemical management and compliance.

By providing end-to-end, fiber-specific solutions that enhance process efficiency and offer intelligent effects, SUPER

SYSTEMS+ enables mills and brands to meet their sustainability targets as well as consumer demand for durable products with enhanced functionality and sustainability. With end-to-end solutions from pre-treatment to finishing, SUPER SYSTEMS+ can be deployed without additional investment. With future compliance in mind, the solutions also go beyond current regulations and industry standards to anticipate upcoming restrictions.

Archroma's revolutionary **AVICUERO®** is a system for sustainable leather tanning and dyeing. Developed in collaboration with UK-based leather technology expert Dr Leather, it is both chrome- and metal-free and yet maintains the quality and performance of traditional tanning methods. Tanners enjoy shorter processing times, eliminate the pickling process and reduce salt usage, leading to lower pollution effluent discharge loads. In addition, AVICUERO® can offer energy savings of up to 25% and CO_2 emissions reductions of up to 23% compared to traditional chrome tanning.

Archroma is working with TRUMPLER, a leader in leather production, to bring the cost-efficient process to the leather industry worldwide.

Social Award for Community Engagement

Archroma has also been recognized for the positive impact it is having on communities in the vicinity of Baroda through multifaceted initiatives that span early childhood development, student scholarships, agricultural education and the empowerment of women.

Archroma recently set up an Anganwadi Centre to provide a range of services in the community, including nutrition and health education and pre-school learning. It also runs a scholarship program for students in vocational training, helping to create a skilled talent pool for the region. Archroma is also collaborating with a local NGO to empower farmers with modern agricultural methods and insights. The building of a Household Biogas Plant in Umraya village is another example of Archroma's sustainable initiatives. The conversion of manure into clean renewable energy by the plant tackles several issues, such as reducing greenhouse gas emissions and enhancing soil health. It also liberates rural women from the burden of sourcing conventional fuel sources and the health risks associated with burning dung cakes for fuel.

The Just Style Excellence Awards celebrate the top achievements and innovations in the global textile and apparel sector to encourage companies to pursue excellence and drive positive change.

(textilevaluechain.in – 25/06/2024)

DIGITAL COLOR MANAGEMENT STREAMLINES CUSTOM LEATHER PRODUCTION

Working with leather poses many unique color challenges. Every hide has natural variations in grain and texture that can have significant impacts on the final color. The finished product is also very sensitive to humidity, temperature, sunlight and many other environmental factors.

All these variables mean that leather dye formulas must be constantly adjusted to achieve consistent results, despite any differences between hides. In addition, master samples must be carefully stored to preserve their color accuracy.

"There's a lot that can go wrong without color management and effective communication," said Salvador Ortiz, color, material and finishings (CMF) designer at Aeristo, a fine leather supplier based in Texas' Dallas-Ft. Worth region. "The same color might be applied in different tanneries that got hides from different suppliers. We were regularly rejecting hides for having too much color variation."

Meeting Exacting Standards

Aeristo serves a niche market of high-end customers, producing high-quality luxury leather for the aviation and hospitality industries, as well as classic cars and yachts. In addition to working with more than 2,000 regular color standards, the company is frequently asked for custom colors or precise matches.

"We're in a VIP industry with no margin of error when it comes to color matching. Our customers know exactly what they want and they expect exactly what they chose. So, our tolerances are much stricter than most other markets," Ortiz said.

Although the company had already seen some improvement from using digital color measurement devices like spectrophotometers, precise color matching continued to be challenging. One issue they had faced was that different vendors were using different brands of instruments. A larger problem, however, was an ongoing need to ship physical samples back and forth, often between continents. This could happen several times if a color accuracy issue came up — with additional delays incurred if a supplier was located in a distant time zone.

Getting Connected

Ortiz and his team began looking for a way to communicate with their suppliers more effectively. They eventually chose Colibri®, a digital color communication platform that enables more seamless color management throughout their entire supply chain.

Although Aeristo's primary interest was to improve their connections with suppliers, they quickly discovered that a digital workflow offers them other advantages. They now have a platform that allows them to specify standards, with full control over which colors each supplier has access to.

In addition, they've also learned that a cloud platform makes it easier for tanneries to perform color measurements in the system and generate reports at any time. Now, the Aeristo team can review them in the office or from remote locations.

"We had tried other software in the past, but the ability to get color-matching reports in real time was game-changing," Ortiz explained. "We've been able to eliminate many time zone and shipping delays and have the added value of control and standardized production reports. We can see how our suppliers are developing each color and even send them a pre-approval before we see it."

Internally, the transition to digital processes went very quickly. Ortiz and his team had previous experience with the hardware and were able to train other departments on the software platform in about six weeks. But getting their suppliers to adopt the system required a bit more effort.

"Sometimes we encountered resistance to the new process from the tanneries. It took some time to convince them. But after they realized how easy it was going to be, they saw the benefits and decided to go with it. Once they understood what we were doing, they even tried to encourage other customers to use the same color management tools," he said.

Process Improvements

Today, Aeristo's color process begins with the in-house development of digital and physical master samples, which are sent to one or more suppliers for production. Real-time reports are sent by the tanneries, eliminating the need for physical samples to be shipped back until the color is within the required tolerance and approved by Aeristo.

Although the platform streamlines approvals, it doesn't replace traditional methods. Aeristo still performs a visual inspection of every physical sample they receive in a light booth to double-check the results. About 99 percent of the time, they find that they're getting exactly what they expected based on the supplier's reports.

"We've cut our production time by at least 50 percent, but it could be even more because we now have 40 to 50 percent fewer rejections," Ortiz said. "Now we're working to implement this process with our clients on the front end so we can show them their colors are correct, even before they see the actual production."

Toward a More Colorful Future

Digital color management created more possibilities for Aeristo than the company expected when they started looking for a better communication solution."For the first time in 30 years, we're talking about standardizing colors. Even if we have hundreds of thousands, we now know that we can set a real absolute value. The dye lots won't dictate the route of our colors anymore. We will," Ortiz said.

The benefits haven't just been limited to the color team. Time and quality improvements have created a positive ripple effect throughout the whole company. "Better color management isn't just making my life easier; it's improving our entire business globally," Ortiz added. "The quality department is spending less time making color tests and customer service doesn't have to handle color issues anymore."

(leathermag.com – 30/05/2024)

LEATHER EXPORTERS SEEK NATIONAL POLICY TO ATTRACT INVESTMENTS, CREATE JOBS, BOOST SHIPMENTS

Apex body for leather and footwear exporters CLE has asked the government to formulate a national policy for the sector with a view to attract investments, boost India's shipments and create jobs. In a letter to Niti Aayog CEO BVR Subrahmanyam, Council for Leather Exports (CLE) said that though there are schemes and support measures at central and state levels, there is a need for holistic development of the entire sector through a national policy.

The elements of the proposed policy, it said, can include incentives for setting up of manufacturing units, training of workers, support measures for adoption of sustainable technologies and innovative products. "This policy should cover the entire supply chain of the sector, starting from raw materials to finished products, including processing, product development, marketing, supply chain management, and backward integration," the council said.

Explaining the importance of the policy, CLE Executive Director R Selvam said that the sector needs a national policy as it is a labour-intensive sector, which employs about 4.4 million, with over 85 per cent women. "The sector has a huge socio-economic benefit. The policy would help the industry in boosting exports and creating huge number of jobs," Selvam told PTI.

The council asked the government to implement the production-linked Incentive (PLI) scheme for the entire supply chain of the footwear and leather industry and also the machinery segment. It added that there is a need to fine-tune special economic zone (SEZ) policy with a focus on increasing productivity through flexible labour laws, lowering the tax burden for the sale of goods in the domestic market.

Further, the CLE suggested that the policy should include a blueprint for infrastructure development in all leather and footwear clusters to make them smart clusters; measures for logistics management; and monetary policy; credit facilities; and insurance coverage. "I would request to frame the policy to facilitate growth and development and provide additional employment opportunities to at least two million youth in the next seven years," CLE Chairman R K Jalan said.

He also called for organising a meeting of global CEOs of major leather products and footwear brands with industry secretaries of states. "Such a meeting will be helpful in attracting more investments from brands," he said adding that there is a demand for setting up plug-and-play models of factories wherein ready-to-use factory sheds with all required infrastructure and support services are provided by the government. The industry is projected to grow at a CAGR of 18-20 per cent in the next 6 years. Its turnover is projected to reach $47 billion by 2030 from $16.7 billion in 2023-24. The sector's exports dipped by about 10 per cent to $4.3 billion in 2023-24.

(economictimes.indiatimes.com – 24/05/2024)

Valorisation of Invasive Species - For Leather, Fur, Bristle, Meat and By-Products (Part -18)

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Beaver

Quite a few of the world's coastal features are named after fierce weather found raging around them. "Land of the Fire" or Tierra del Fuego, an archipelago, in the southern tip of Patagonia, the southernmost extent of which, lies just above the 56th parallel South, is shared by both Argentina and Chile. The eastern bi-section is administered by Argentina. The entire western half of the chain, comprising "Islas Picton, Nueva and Lennox, Stewart and Londonderry and all islands south of the Beagle Channel, is under Chilean governance.

Argentina

Sometime in September 1945, almost coinciding with the official cessation of WWII, Tom Lamb (1898-1969), founder of Lamb Airways Limited, Manitoba, Canada, was approached by Dave Allan of the Indian Department Office of Trusts and Annuities, Ottawa, to capture and deliver twenty-five breeding pairs of live beaver to Ushuaia, Argentina, nicknamed the "End of the World." The windblown town, situated on a steep hill, is overlooked by the Martial Mountains to its immediate north and the Beagle Channel to its south

While the wild furbearers of the tundra and taiga biomes of North America have cultural, aesthetic, sartorial and economical value, the Argentinean solicitation was to make amends for the conspicuous absence of fur bearing quadrupeds on the southernmost tip of Patagonia, which was climatically very similar to the northern reaches of Canada - a prime beaver habitat.

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The Argentinean administration had, earlier, dispatched a request for twenty-five breeding pairs of beavers, first to the Hudson Bay Company, and thereafter to both the Ministry of Natural Resources, Canada, at both federal and provincial levels. All three establishments had declined unequivocally, to undertake the 45-day voyage from Montreal to Ushuaia with the large rodents.

Tom Lamb, popularly known as "Mr. North", was a pioneer and descendent of an Anglican family. He had restocked the beaver and muskrat populations that had almost gone extinct in Canada after prolonged and rampant fur trade, resulting in low water levels and over trapping.

In 1931, he pioneered a muskrat restoration plan, leasing 54,000 acres of swampy land in the vicinity of Moose Lake, where the number of muskrat nests had precipitously declined to forty. Within the next five years, due to the unstinted efforts of Tom Lamb, the number rose to 5,000! Additionally, Lamb had also contributed to expanding the northern frontier of the "Great White North (Canada).

Tom Lamb, whose motto was, "Don't ask us where we fly, tell us where you want to go", requested $650 per animal FOB, plus all other expenses on actuals, for delivery at Ushuaia.

He and his team were however successful in catching only 20 beavers, which were live trapped from the Saskatchewan River Delta, in the locations of Devils Portage, Caroline Lake and Moose lake where the Lamb family had trading posts. The furry residents of these riparian areas were transported Manitoba- Montreal – New York – Miami – San Juan –Trinidad - Port of Spain - Rio de Janeiro – Montevideo – Buenos Aires- Ushuaia.

From Buenos Aires, the castoridae were freighted by sea plane to the Fagnano Lake, at the mouth of the Claro River, in the interior of the remote Tierra del Fuego archipelago, at the southern tip of South America, a captivatingly picturesque and remote area, comprising of mountains and wetlands.

The purpose of this 12,500 km journey of the beavers was four-fold –

a) to enrich and modernize the native fauna of a region that was considered bleak and desolate.

b) to industrialize the area, by emulating the fur economies of regions with similar climates, and to envigorate a native fur-trading industry.

c) to assert national sovereignty in a territory with low presence of the state and with more foreign than national population.

d) to economically and ecologically energize the region, and generate employment opportunities.

Wolves, coyotes, grizzly and black bears, cougars and grey wolves which preyed on the semi-aquatic rodents and kept their numbers down in Canada, were completely absent in Tierra del Fuego, with no equivalents to prevent beaver numbers from rocketing out of control. Foxes and condors - notable carnivores of the region, were no match for the largest members of the rodent family.

In the absence of both predatory threat and competition for space and resources, the beavers dispersed and thrived, journeying through stream beds and river valleys. They multiplied ominously, establishing families and populations across the archipelago, in the process, felling trees, building dams, raising water levels indiscriminately, completely destroying large swathes of native trees, leaving behind phantom forests.

The magnitude and scale of devastation began to register, in the 1990s, with the governments of Argentina and Chile. Commercial and recreational beaver hunting were approved and authorized, but low fur prices frustrated the endeavour. With beaver pelts fetching $20 each, in 1999, and $10 in 2020, there was no motivation for hunters and trappers to go behind beavers for their coats.

Chile

Left largely unbothered, since the 1990s, the beaver population exploded, in 72 years, from 20 in 1946 to an estimated 110,000 in 2018 in Patagonia and Tierra del Fuego (though unofficial sources place the number at 200,000), crossing the "frontera" into the Chilean side in the 1960s. Originally confined in small numbers, to a very remote part of the archipelago, beavers are now found in all streams in the Andean and extra-Andean areas, and in nearly all aquatic habitats on Isla Grande as well as other Chilean islands of the Tierra del Fuego archipelago. The semi-aquatic rodents have also been spotted on the Brunswick Peninsula, in mainland Chile, implying that the tenacious

mammals had braved and conquered the fearful currents of the Straits of Magellan.

At present rate of dispersal, it is expected that the next decade will find one beaver for every man, woman and child in Tierra del Fuego (population 190,641 as per the 2022 census).

Karukinka Natural Park - a private natural park located in Chilean administered Isla Grande de Tierra del Fuego - a priceless repository of many ancient beech trees, assiduously protected from the lumber industry-faces continued threat from flourishing families of beavers. The park, which is a conservation model of the rich austral biodiversity of the sub-Antarctic region, was established on land donated to the Wildlife Conservation Society of Chile by Goldman Sachs.

The invasive semiaquatic rodents have caused severe and extensive damage to the 740,000-hectare park, firstly by persistently nibbling and tipping over trees to construct dams on lakes, ponds and rivers; secondly by killing standing southern hardwood trees by drowning their roots with raised water levels; thirdly by accelerating carbon released into the atmosphere from putrefying trees and soil and fourthly by causing widespread loss of biodiversity in a conservation area.

Elsewhere on Tierra del Fuego, the beavers have established dominance over 70,000 sq km, and destroyed, in excess of 300 sq. km of grasslands, forests and peat bogs, causing what a 2009 research paper termed, “the largest landscape-level alteration in sub-Antarctic forests since the last ice age.” Their ceaseless onslaught has redirected as much as 90% of streams and rivers in Chilean Tierra, causing catastrophic impact on the delicate ecosystem.

Beaver interference has severely compromised infrastructure, damaged farmlands and flooded highways. The invasive animals have also chomped on fences of sheep pens, bringing them down thus allowing sheep to escape. In 2017, internet and cellular services in Ushuaia were severely disrupted when riotous beavers rived through fibre optic cables. The Argentinean exchequer suffers an annual beaver damage bill of $66 million. In Chile alone, the estimated economic loss is around $73 million. The irreplaceable ecological damage in both countries is unquantifiable. It has been estimated in a recent study that the cost of collateral damage from beavers to Chile, would be an additional $263 million by 2040, if the menace is left unattended.

Yet another unsavory outcome in beaver-altered habitats is the emergence of two additional invasive species – mink and muskrat. The latter are drawn towards torpid ponds, brought into existence by beaver dams. Minks gravitate towards muskrat colonies and hunt them. Being obligate carnivores, they also prey on native ducks, geese and small rodents – whereby a second invasive species aggravates the adverse effect, brought on by the first one – galvanizing a compounded “invasive meltdown process”.

One more salient aspect triggering their proliferation, is the fact that the geography of Tierra del Fuego provides ideal living space and resources for beavers. Heavily forested with Nothofagus trees, the fragile and pristine area makes available, ideal lodging and feeding sites for austral beavers.

Much of the area is covered in land in close propinquity to ponds, streams and rivers and the island is heavily forested with trees and plants that present copious sources of food and shelter —— vital resources that also lie adjacent to the water bodies.

Evergreen forests of the species Nothofagus betuloides constitute the dominant vegetation cover in the Argentine Andes. The leafy giants are periodically interrupted by Sphagnum bogs, on the south side of Isla Grande, along the coasts of the Beagle Channel.The region surrounding Lake Fagnano is a transition area between two adjacent ecological communities, with alternating herbaceous and shrubby growth and deciduous trees of three main species – N.antartica, N. pumilio and N.betuloides. Shrubs such as “mata negra”, canelo and michay grow on undulating lowlands, dotted by Sphagnum bogs. In this “Castor paradise”, occupying plentiful water, green vegetation and cover, colonies of austral beavers thrive.

Beaver impact on thousands of acres of Tierra del Fuego has been extensive. They are responsible for widespread topographical transformation of habitat, including hydrological changes to rivers, creation of dams, inducing sediment deposition and increasing retention and accumulation of nutrients and organic matter in runnels and streams and destruction of riparian trees, caused by putrefaction of roots, due to prolonged submergence in raised water levels.

Beavers in the Northern hemisphere feed on tree bark and cambium of cottonwood, poplar, aspen, alder, willow, maple,

birch and beech trees, which have inbuilt physiological attributes to regenerate and revitalize themselves after the assault. This ability of the trees has been thought to have developed over millions of years while co-evolving with beavers.

South American Magellanic deciduous systems (Lenga, Nirre, Canelo and Coihue) and austral vegetation cover (Chaura, Calafatillo and Notro) and undergrowth (Mata Negra, Mata Verde and Neneo Macho) unfamiliar with beaver foraging until approximately eight decades ago, have little to no ability or defence to recover, after the introduction of beavers in the area. Therefore, they are downright vulnerable to fatal damage to their roots, trunk, cambium and bark. A solitary beaver commands sufficient incisor strength and tenacity to fell trees, which had required a century or longer to reach maturity. The animals have high levels of iron in their tooth enamel, which gives their incisors strength and a vibrant orange hue. Beavers' teeth grow continuously, so they are never worn down by their tireless gnawing.

From 1946 - 2006, there was no information on the beaver population in Tierra del Fuego. For many years it was not known whether beavers had adapted successfully to the Fueguian ecosystem. Because of their incommensurately expansive influence on their natural habitat, compared to their population, the Patagonian beavers were thereafter classified as a keystone species.

In 2008, Chile and Argentina jointly launched an initiative outlining ways to improve "management, prevention and control" of Patagonia's beavers. However, the first pilot projects commenced only in late 2016. The first course of action was directed towards eradicating 10 per cent of the invasive species. The strategy was expected to be a pointer to the comprehensive time frame required to effect complete extirpation of the rodents, which was estimated to cost $35 million.

Since 2010, both governments have encouraged beaver hunting and trapping but outcome has been unsatisfactory. This is in part due to trappers mostly operating near well-laid roads, unable or unwilling to reach the remote hinterland where the problem is the worst.

No doubt, there have been sporadic attempts by Fuegians to derive commercial capital from their tormentors. Restaurants have periodically offered beaver meat on the menu to satiate gustatory curiosity of tourists. A ski resort has been named "Cerro Castor "(Beaver Mountain). Tourism companies have offered guided, beaver-spotting tours through devastated forests, to educate visitors on the havoc wreaked by the furry fiends. Organized beaver hunting safaris and food-ops of tasting lean beaver meat, cooked "al-disco" - stir fried over low flame in a round pan over a fire made from beaver decimated, dead lenga beech and canelo twigs and branches, ghostly white in colour.

The paltry pecuniary return from beaver pelts was insubstantial even when augmented by a government bounty on beaver tails due to which over time, trappers and hunters were no longer motivated to ply their trade. In the initial days of the scheme, as many as 11,700 animals were trapped in Chile and an equal number in Argentina, no substantial population decline was discerned. Instead, there was a return to wantonly violent methods, such as use of TNT to blow up the beavers with their dams. Over time, some animals were found to be neutralizing the traps and snares, with weeds, twigs and plant matter, and eating the bait.

It was also observed that upon removal of beavers from a water body, the vacancy was quickly filled by "re-invaders", which neglected to inhabit the old dams, channelizing their destructive focus instead, on creating newer dams by felling more trees, thus leading to the widening and deepening of the pond or lake.

Although the survival of the region's ecosystem hinges on complete eradication of the invasive beavers, preliminary reforestation trials have yielded results, which are not entirely hopeful. More than half the planted seedlings perished and those which survived hardly grew. Researchers are presently investigating various alternatives of restoring the phantom forests to their former luxuriance.

Although complete extirpation of the species from both sides of the international border has been declared as possible, the pathway to the same will be punishingly difficult and will demand the highest sincerity and intent from both governments.

Norway, Sweden, Finland and Russia

Between 1935–37, North American beavers from the USA and Eurasian beavers from Norway, were released in Finland.

The former have established ascendency in Etelä-Savo, Pohjois-Savo and Pohjois-Karjala, with isolated colonies in Lapland, and parts of central and eastern Finland. In recent times, it has been observed to be making steady inroads into southern Finland, overlapping with Eurasian beaver habitats. Eastward migration of North American beavers into Murmansk, Russia, from Finnish Lapland has also been documented. Presently, there is contact and interaction between the two beaver species in the western periphery of Pirkanmaa Province of Finland.

Eurasian beavers have recently invaded Finnish Lapland from Sweden though the Tornë watershed.

From 1960 to 1993, thirty-one breeding pairs of beavers were randomly introduced on Swedish rivers. While a few Castor families inhabit the upper Ounas tributary of the River Kemi, on the lower Kemi (Kemijoki) watershed and on middle and lower Tome, their numbers are substantial. The gentle undulating topography with coniferous forest cover and copious water in ponds and streams, has catalysed rapid multiplication and migration of the rodents.

Conditions appear ideal for both the Eurasian and the North American beaver numbers to increase and interact with each other within the Kemi basin in Central Lapland.

The European Union considers *Castor canadensis* (North American Beaver) an invasive species, which means that any member states with populations are required to consider control measures. At present the only known population is in Finland, but formerly there were small populations established in France, and in Luxembourg and parts of Germany close to Luxembourg (where the population came from escaped zoo animals from a park in Germany). Both of those populations were removed in recent years.

Castor canadensis is accordingly classified as an invasive species in Finland's National Strategy on Invasive Alien Species. Strategic reintroductions of Eurasian beavers to sites in the Kemi basin and implementing proactive steps to eliminate, or at least reduce, North American beaver on the Kemi, to assist re-colonization by Eurasian beaver are being actively pursued by the Government of Finland.

Finland is legally required by Article 19 of the European Union Regulation on the Prevention and Management of the Introduction and Spread of Invasive Alien Species to contain the spread of C. canadensis.

From Finland, invasive beavers have dispersed naturally to northwest Russia (Leningrad and Karelia). The species, Castor canadensis, has also been released separately in the Russian far East (Sakhalin Islands and Kamchatka peninsula)

UK

On 12 October 2021, Britain's "beaver lady," Roisin Campbell-Palmer, a biologist and conservationist, trapped a pair of beavers in Scotland and released them in Norfolk, southeast England. The objective of the process termed rewilding was to create more natural, diverse habitats and repair damaged ecosystems.

Beavers are being slowly reintroduced them into landscapes where they haven't been present in more than 500 years, after they had been hunted to extinction in the Middle ages. Due to their lengthy absence from English soil, beavers are no longer considered native animals.

While the only beavers in the U.K. were in captivity, at the turn of the century, there are now more than 1,000 wild beavers, mostly in the county of Perthshire, north of Edinburgh, Scotland, with another 500 in England.

The first beavers were initially released from nature reserves with the approval of authorities, while others escaped or were liberated without official permission.

It is feared that UK beavers may soon assume invasive dimensions as they have been rampantly tree-felling, dam-building, demolishing fencing, damaging crop and raising water levels of creeks.

Germany

In Bavaria, Germany, farmers are frequently coming into conflict with beavers whose underground burrows are eroding farm-land next to riverbanks. Isolated populations have also been reported from Belgium and Luxembourg.

Mexico

Beavers in Mexico inhabit river basins flowing into the Río Grande and the Colorado River. In Sonora, they can be seen in the Bavispe River basin and the Cajón Bonito River, as well as in the San Pedro River in Arizona. Along the USA-Mexico border, colonies have been reported from Chihuahua and Tamaulipas,

particularly in protected areas like Área de Protección de Flora y Fauna Cañón de Santa Elena and Big Bend National Park. Occasional sightings have been recorded in other Mexican states since 1965, including Baja California, Coahuila, Nuevo León, and Tamaulipas. Reports also confirm their presence in the Conchos River, specifically in Pegüis Canyon.

With growing clamour against animal cruelty and exploitation, strident anti–fur movements globally, objections to the hunting trapping and killing of wildlife, and to the confinement and killing of animals on fur farms, fur is in less demand than it was years ago, and items are increasingly difficult to sell for prices that most fur harvesters would consider reasonable.

While, as recently as 25 years ago, the main market for furs was in North America and Europe, the industry is now driven by demand from Korea, Japan, China, Hong Kong and Taiwan. Despite anti-fur sentiment, fur continues in the fashion scene, targeting young upwardly-mobile clientele with trendy and hip designs. In Korea, a long, full-length fur coat is still a symbol of wealth among middle-aged women. In recent years, fur vests have been a popular choice among young women here, for their warmth and comfort.

Chinese consumers, who by 2030 are projected to generate 25% of all global consumption growth, continue to be leading buyers of fur garments. Since early 2020, however, China has been drifting in and out of serial pandemic lockdowns, strict quarantine and isolation rules brought about by zero Covid-19 policy and nationwide recurrence of highly transmissible Omicron strains. This has spelt very bad news for fur dealers, suppliers, wholesalers and retailers. This crucial market is now dormant.

Another global heavyweight, Russia had been a traditional buyer of furs. In relation to the greenback, the Russian ruble has been robust. There has however been a complete breakdown of relations between US and EU on one side and Russia on the other, affecting the fur industry among others, seeking to cater to the Russian market.

In spite of the seemingly insurmountable challenges, there is still a niche market for fur. But it is now more arduous than ever before to sell fur at fair prices.

Winter trapped C. canadensis pelts with dense and compact underfur and long guard hairs, are considered prime raw material in the fur industry. Their demand is confined to the apex of the overall beaver fur market as they are not only expensive to produce but are also prohibitively priced. Particularly sought after, are skins of darker pelage. These are manufactured into plucked, dyed and sheared apparel for high end markets or into niche articles such as stoles, mittens, blankets and hats, after the removal of guard hairs by felters. About 10 to 13 beaver pelts are used to make a knee-length coat.

There are two types of beaver-based hats in vogue - hats made exclusively with beaver wool and referred to as “beaver hats,” and those hats containing a combination of beaver and a lower cost wool, such as rabbit.

Only a small volume of pelts satisfies the high-end market demand, while the balance percolates to the low-end segment, where pelt quality is of no concern. There is no middle market.

Best quality beaver pelts command $25 each, Canadian and Scandinavian Europe collections likely average around $15-20. Beaver from most other places, including Patagonia bring up the rear, in the $10-12 range.

Beaver castoreum – a yellow discharge, from the rodent’s castor sacs, used to mark territorial hegemony is used in the perfume, food and cigarette industry and commands a high price – USD 225/kg.

Since Argentinean beaver pelts command a low price of $10 each, the only option at the moment appears to be using the pelts of culled animals to make gaucho cowboy hats, mittens and inexpensive vests. Beaver meat can be converted into pet protein and jerky, while being concomitantly promoted for human consumption, with restaurants encouraged and incentivized to serve beaver-meat recipes. The castoreum could be marketed separately to renowned Italian and French perfumers. Then the combined sum of its parts could still make beaver harvesting in Tierra del Fuego a profitable venture overall.

A type of exotic leather that many are unaware of is beaver tai , which is suitable for applications, such as phone cases, wallets, and footwear.

These durable, intricately textured, deeply grooved, uniquely matrix patterned tails - incredibly thicker and sturdier than most other exotic leathers, besides being highly scratch, tear, load and water resistant, possess high tensile strength. Beaver tales

can be dyed into attractive, vibrant and uniform colours, both earth and pastel.

The scratch and water resistance properties of beaver tails make for excellent footwear, such as cowboy boots. Additionally, the small, intricate groove pattern can make for a striking and unique piece of footwear that is very distinct from both bovine, ovine, caprine, porcine and reptile leathers.

Beaver Tails are also made into delicious and healthy pet chews of medium chew-ability.

Other uses of beaver tails include, bow and gun grips, knife sheaths, shell holders, belts, bucking Rolls (a usually leather pad that is fastened on either side of the pommel of a saddle to help a rider stay on a bucking horse), wallets with rich pebble grain, bondage flappers and paddles, watch straps, drums and rattles, stud earrings and belt bags.

Beaver tail stew is popular with hunters and trappers. In medieval Europe, the Catholic Church considered the beaver to be part mammal and part fish, and allowed both clergy and laity to eat the scaly, fishlike tail on meatless Fridays during Lent. Beaver tails were, therefore, highly-prized in Europe; they were described as tasting like a "nicely dressed eel".

Fat from a heated beaver tail is rubbed on the painted areas of a parfleche to help waterproof painted decorations.

In North America beaver was typically hunted in winter, though some tribes hunted them in fall or spring. Some cultures used previously slaughtered beaver parts as bait in the hunt of other beaver. The Alaskan Kutchin communities used the beaver's castor gland and intestines to lure prey. Beaver body parts were used in shamanism, divination and scapulimancy.

North American beaver was reported to be a prized food of certain communities who considered the beaver tail a delicacy. Beaver flesh, nicknamed "Indian's pork" was widely consumed. The animal's intestines were cleaned and braided before drying and storage. When necessary, the dried intestines were boiled for consumption.

Flaying a beaver took about one hour. The backbone and other large bones were removed and the stomach flesh left intact. The meat was hung out straight on small sticks above a smoky fire. The limbs and tail were detached before a slit was made through the stomach; the skin was removed from limbs and body using a knife and a sharp piece of bone. Beaver skins were stretched and nailed to long boards for drying.

The most common method of preparing beaver was to boil it; the meat and the broth were both consumed. Birch bark basins heated with hot stones were used. Also utilised were earth ovens - lined pits in the ground heated with hot stones. The oven pits were often cushioned with animal skin.

Alternately, birch bark container or big kettles filled with water and hot stones to boil the meat. The beaver's head was consumed first after boiling along with other offal including heart and the kidneys

Some indigenous communities boiled the beaver inside of intestines or other parts of an animal body while others roasted, boiled and dried the flesh, but typically roasted its tail. Yet others baked, dried and smoked the flesh in addition to eating it raw. They ate its baked liver and feet, and its raw liver

North American beaver was also preserved by some cultures. Important methods included drying, smoking and storing underground in pits or above ground suspended in trees or rock cabinets. Meat was also frozen whole in winter months. Pemmican was a product similar among tribes that is made with meat, grease and crushed berries inside of viscera and stored in caches (small log cabins above or below ground) or birch bark caskets.

Dried beaver meat and distributed it at potlatches - opulent ceremonial feast of North American Indian communities of the north-west coast at which possessions are given away or destroyed to display wealth or enhance prestige. Distributing meat in this way was thought to be a validation to the rights of the land. Beaver meat was advantageous, being more calorie-rich and fattened than other red meats, and the animals remained plump in winter, when they were most hunted.

Beaver parts were used in a variety of ways. Beaver teeth attached to a piece of wood made a knife and beaver bags were used to cradle children. Beaver pelts were used to trim parkas, slippers, moccasins and mukluks and beaver teeth as tools. The castor gland (that which surrounds the anus) was used for medicinal purposes.

Castoreum, the present-day utility of which is limited to homeopathy, an ingredient in perfumes and tinctures, and as a flavouring in food and drinks, has been used for a variety of medical purposes- as a treatment for stomach problems, hysteria in women, flatulence, seizures, sciatica, vertigo, and epilepsy, stopping hiccups, toothaches and as an antivenom.

Beaver skins were used to make robes clothes for nobles and dancers. The teeth were used to make dice and tools of various kinds. Shamans practiced scapulimancy, whereby beaver bones were rubbed against a tree in order to assist a hunt. They considered beavers as powerful spirit animals and used its skin to make spells to permanently have warm hands in winter. Beaver head or tooth were "sent into" a witch's victim or used in duels between shamans.

The "blood liver" (i.e., the "spleen") was considered extremely powerful and could not be given to dogs. The "blood liver" was used to tell hunting fortunes and to foretell bad luck. The hipbone was also used to tell hunting fortunes. They also used the beaver scapulae to foretell if they would be successful in hunting and in which direction to go.

Beaver was the most significant crest animal of some tribes, which sometimes kept beavers as pets.

Consuming the flesh of female beavers bearing young was taboo because they thought that this meat would make them ill. Beaver bones were restricted to dogs as it was believed that if humans ate them they would never catch a beaver again. The front limbs of the beaver were served only to men, and the hind legs only to women. Front limbs were believed to contain strength, while the hind legs were given to women because they "stay behind". Feasts were communal, with the beaver head symbolizing honour and served to the males. The first beaver feast required burning of the fur prior to feasting

Beaver castoreum have been commercialised in a few creative and innovative ways in recent times.

The viscid secretion from sacs near a beaver's anus, has been used for over 2,000 years in medicines, soaps, creams, and cigarette aroma condiment, to augment their palliative and sensorial attributes. In 500 BCE ,Hippocrates lauded the healing properties of the acclaimed medicinal ingredient, known since Roman times. Today, the high-value, therapeutically inert, nonallergenic compound is used in flavouring niche products like Swedish bäversnaps and various perfumes and foods. The U.S. consumes less than 135 kg annually, as reported in Fenaroli's Handbook of Flavour Ingredients.

The mucilaginous substance contains over 75 chemical compounds, including salicylic acid (aspirin) and fatty acids found in high-end skin creams. Some compounds resemble vanillin, giving it a vanilla-like scent. Historically, beavers were killed for castoreum and their fur, nearly driving them to extinction in Europe by the 16th century and in North America by the 19th century.

The U.S. FDA deems the under-valorised and underused product of wildlife control, "generally regarded as safe," with no adverse reactions reported. In beaver behaviour, the gloopy, glandular secretion is crucial for marking territory. Beavers deposit mud piles topped with the glutinous discharge to elevate, moisten, and protect the effluvium from water. Both sexes have castor sacs, but males often mark pathways to signal dominance.

Related beavers can identify family members by their unique castoreum scent. Environmentalists use it to attract beavers into humane traps for relocation efforts.

Eau de Musc, a unique bourbon from Tamworth Distillery, New Hampshire, USA, incorporates castoreum oil from North American beavers, imparting a complex, leathery, raspberry-like character which enhances the whiskey. This full-bodied, two-year-aged bourbon features a vanillin aroma and spice notes, complemented by birch oil, raspberry, and Canadian snakeroot, giving it a warm, crisp finish.

Tamworth Distillery collaborates with Anton Kaska, a sustainable trapper, to source castor pods, typically discarded, from local beavers culled to manage overpopulation. The claggy discharge, with a cinnamon-like essence, which is used by the animals for territorial markings, brings a subtle, earthy richness to the whiskey without overpowering it.

The whiskey's light copper colour and woody, fruity nose led to a palate reminiscent of forests, with fir, maple, and oak notes. The finish combines earthy and ginger tones. Eau de Musc appeals both as a novelty whiskey infused with beaver castor and as a high-quality bourbon suitable for various settings, from rustic traplines to sophisticated city bars.

This two-year-aged bourbon offers a full-bodied mouthfeel, a vanillin aroma, and spicy notes. Enhanced with birch oil,

raspberry, and Canadian snakeroot—a woody spice similar to ginger—it combines seamlessly with the natural fruitiness of castoreum for a warm, crisp, and highly palatable finish, doubly enriching when served with the back-straps, hindquarters and other cuts of meat from the aquatic rodent, turned into a fine jerky, stew, or ground for chili.

The austral beaver is an excellent example of an introduced invader species that rapidly exploited the environment in the new habitat. There is an urgent and immediate environmental and social obligation to valorise the invasive alien species to reduce its deleterious effect on the environment.

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ELEMENTARY KNOWLEDGE ON FOOTWEAR MANUFACTURE

PRINCIPLES OF FOOTWEAR• Part—IV

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FOOT SURVEY

It is urgently necessary for the footwear industries. Without the survey of foot measurement, the footwear of a particular country can not be standarised. It provides the necessary information in connection with the manufacturing of shoe lasts on which ultimately footwear is being made. A certain class or type of people, at first, to be chosen on which the survey of foot will be conducted. The people must be selected in such a fashion so that maximum number of people can be covered by their foot measurements. People from various community are engaged in various types of job may be included. Maximum number of people must be covered to achieve better results. Categorically, men women, boys/girls, children should be included in this survey. From this survey average of measurements will be taken in each category to make the preliminary last for experiments. The survey will be conducted in such a manner that each and every measurements required in connection with making a pair of last is collected.

(Fig. 40 & 41)

In a typical foot survey mission nearly 20 measurements might be taken and from the plan or draft of each foot could be measured the angles of the big and little toes and the metatarsal phalangial joint to the tangents of the sides of the foot.

Shoe manufacturer generally tests his specially made last by trying a pair of shoe on his customer's feet and

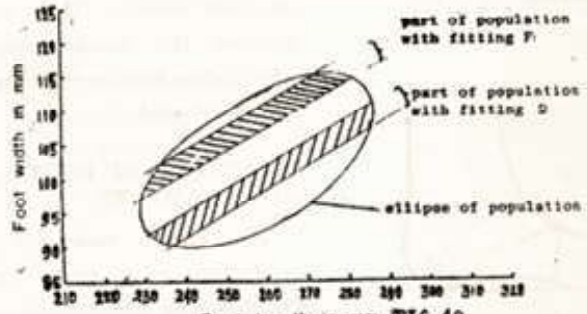


FIG-40

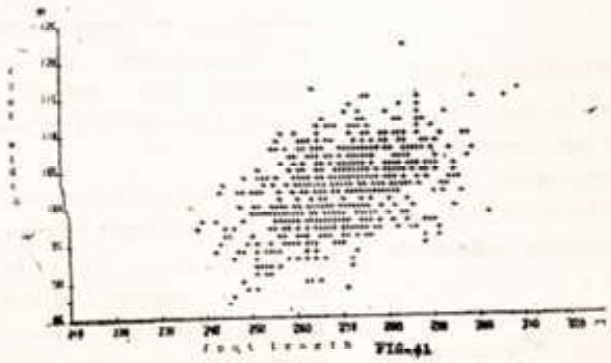


FIG-41

Example of a scatter diagram of length and width of the feet of a certain group of men.

(Continued from Page 241 to 249 of previous issue)

modifying the same if necessary at all. The bulk manufacturer needs enough information to build up statistical models of the average foot of various sizes and fittings and the deviation from the average that he intends his footwear to fit. It is also required that the particular position on the foot that is top of big toe or instep point on middle cuneiform—are measured in three dimensions, i e, from the back of the heel, from a line drawn as a tangent to the inside of the foot and vertically from the base plane on which the foot is resting. (fig. 42)

Fig 42

FOOT MEASUREMENTS

As per as shoes and lasts makings are concerned the foot measurement plays the most vital role in this process. It directly effects the following :

1. Footwear Designing
2. Footwear manufacturing (footwears are being made on last only)
3. Footwear selling
4. Last making (It is made on the basis of average collection of foot print and their measurements)

Before going for the standard measurements of shoe last and its shape and fashion thousands of feet must be measured, examined and categorised. The final measurements must be fixed keeping in the mind the anatomical structure of the feet as well as the comfort of the wearer. All the measurements are based on the average of the foot prints and measurements collected in the foot survey. This average is the basis around which shoe lasts are designed and developed.

TECHNIQUE OF FOOT MEASUREMENTS

Foot can be measured in various ways and each way will give you differences in measurement. Though these differences are very minor in several cases still, to overcome this defects a standard technique has been developed.

Besides taking the measurements of foot draft or plan, the person who's feet to be measured remains sitting throughout (fig. 43). The entire bottom of the feet i.e., seat to toe portion, must be kept flat on the floor. Resting the hand on the arm of the chair will restrict the pressure on the knee. The feet should be slightly apart and lie flat, bearing equal share of weight of the legs. If it is viewed from the side and front the seat portion of the leg should be vertical from the knees so that at the ankle, a right angle is formed by the foot and the leg.

Fig 43

The person, whose feet measurements is to be taken, must be in a relaxed state so that no muscular activity can take place. A very minute muscular activity causes an increase in the girth of the muscles in that region which ultimately enlarged the required measurement.

PARAMETERS TO BE MEASURED ON THE FOOT

In order to get an accurate shape and dimension of the foot, the various locations of the foot are to be measured. Given below are the details how it is performed. (fig. 44)

A) A draft—Outline plan of

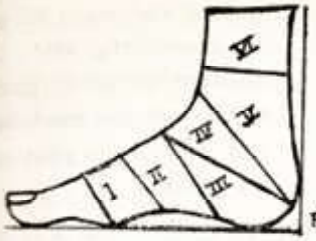


FIG-44

the foot with weight on

B) An impression—to show the distribution of weight

C) A profile—To show height of the big toe and instep contour

D) Length—Taken on a size stick

E) width—Measurements taken from draft

F) Girth Measurements

I) Joint—Around metatarsal phalangeal joint

II) Waist—Smallest girth behind joint

III) Instep—Smallest girth passing over prominence over on middle cuneiform

IV) Long Heel—Seat to instep to give "pass-in" in riding boot.

V) Short Heel—Seat to lowest crease in front of the ankle

VI) Calf—Around thigh (highest circumference of thigh)

The Length :

a) The largest part of the foot. It is taken from the middle of the heel at the back to the back to the largest toe.

b) The length from heel to ball taken as shown in (fig. 45)

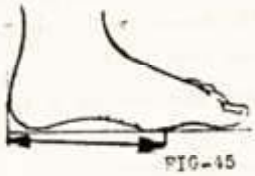


FIG-45

Width :

a) The width across the ball joint—it is the widest portion of the forepart of the foot as shown in (fig. ...46)

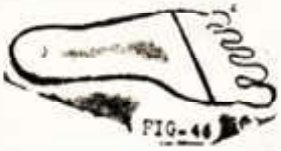


FIG-46

Joint Measurements

a) Inside Joint :

It is the base of the great toe and most prominent of the toe articulation. On pressure a ridge of bone will be felt encircling the head of the first metatarsal (fig. 44-I).

b) Outside Joint :

The arrow shows the particular articulation which should be marked on the foot. We can find out the exact location. It is a crease in the skin behind the base of the little toe.

Waist :

The position is not the same on all feet. However it is the area which surrounds the foot just to the rear of the joint. It is the smallest girth measurement between the ball and instep joint.

Instep :

It is the highest point on the front of the foot. Two measurements are taken from this point. (i) Girth of the instep (ii) Girth of the long heel. It is roughly half of the length of the foot.

Long Heel :

This is the measurements from the instep to the lowest point at the back of heel, around the heel and back to the instep.

Short Heel :

The point where the foot joins the legs, the trochtear area, is the approximate posi-

tion for this measurements where the skin creases when the front of the foot is raised. It is measured around the lowest point at the back of heel and the point where skin creases.

Foot Print :

The magnitude and shape of this contact area differ from person to person due to differences in the foot muscles. Find below the (fig. ...47) examples of a normal foot print.

Foot prints are made as a starting point for designing insole patterns which ultimately required for last making. Generally two procedures are followed for taking foot print.

i) A plain foot print without a copy of the foot sole. This method is used for feet without abnormalities.

ii) Foot print including making a copy (blue print) of the foot sole. This method is used for orthopaedic shoes.

It is common use to make the foot print in the half loaded situation of the foot. ie., the person should stand with both feet on the ground.

The procedure for making a plain foot print is :

1. Put the foot on a piece of paper (body weight on both feet)
2. Draw the perimeter of the foot holding the pencil at 90° to the ground
3. Draw the perimeter from inside joint to the outside joint around the back holding the pencil 45° to the ground (fig. 48)
4. Measure the joint girth of the foot and mark inside and outside joint on the drawing.

FOOT PRINT WITH A COPY

To make the foot print with a copy, a special device is required. (fig 49)

The procedure for making the foot print is

1. Cover the rear side of the rubber sheet with special ink.
2. Place a piece of paper in the device and close the latter.
3. Put the foot on the device (stand on both feet)
4. Draw the perimeter of the foot holding a pencil with a rounded point (it is made to prevent damage of rubber sheet) at 90° to the ground.

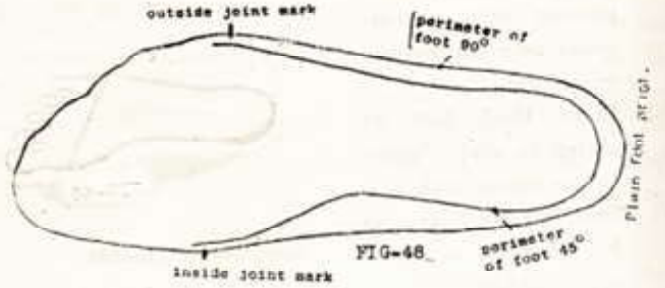


FIG-48

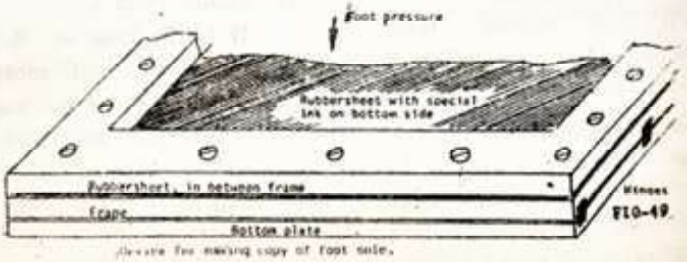


FIG-49

VARIOUS PARTS OF A SHOE

Now-a-days the shoe has become so fashionable and its constructions are so complicated that it is difficult to identify the various parts of the shoe. The styles and constructions of the shoe are based on some specifications on which the shoes are being manufactured. When we enter the details of construction of a shoe gradually we will find that each and every shoe has got its own style and construction which is quite different from others. Primarily we can divide shoes in two main parts.

1) Upper Parts

2) Bottom Parts

These both parts has their own style of construction. The shoes are often called by the name of the upper construction, such as Derby shoe, Oxford shoe or Casual shoe. These all are the basic upper construction of a shoe. Like wise there are also some bottom constructions which are known as Good-year-welted shoe, Mckay shoe or California shoes. We can categorised the footwear into two main groups. Rubber shoe/PVC shoes are not being considered in this groups.

UPPER CONSTRUCTION

1. Albert
2. Barshoe or Monk Shoe
3. Ball Shoe
4. Belly/Ballerina
5. Ballet
6. Balmoral
7. Bootee
8. Boot
9. Brogue
10. Boat Shoe
11. Court
12. Chuplee
13. Casual
14. Derby/Gibson
15. D'Orsay
16. Fringe or Shawl Tongue
17. Ghellie/Ghillie
18. Gore
19. Grecian
20. Jodhpuri
21. Jalsa or Nagra
22. Mule
23. Moccasin
24. Oxford
25. Pump
26. Peep Toe
27. Sling Back
28. Sports
29. True-Moccasin

Bottom Construction

1. Good-Year-Welted
2. Mckay Stitched
3. Veldtschoen
4. California
5. Stuck-on
6. D. I. P. (Director Injection Proecss)
7. D. V. P. (Director Vulcanise Process)
8. Clog
9. String-Lasting Method

VARIOUS PARTS OF AN UPPER

A basic upper is consisted of three main parts. (1) Vamp. (2) Quarter (3) Back Strap (fig. 56)

Vamp :

This is the front portion of a shoe which covers major functional area of a shoe.

Quarter :

It covers from instep to back portion of a shoe and grips the last on its comb area. It plays the vital role for holding the shoe to a foot.

Back Strap :

The back curvatures of the quarters are joined by a back strap. It helps to keep the back line intacked permanently.

As you know there are various types of upper construction in a shoe, now we will discuss about some of the shoes for both men and women and how the various upper components exists in various forms.

Uppers : Derby Shoe

This is very simple type of a Derby shoe widely used by the industry. (a) Vamp (b) Quarter (c) Back strap. (Fig. 56)

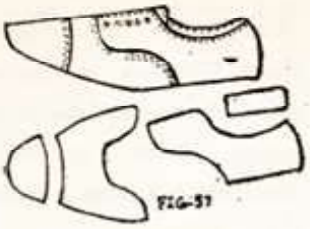
The vamp in this design may be divided in several pieces (e) keeping the basic component same.

(c) Toe Cap, Tongue, Wing Caps :

As per the figure we can make the vamp with more than one component and seperate tongue is always preferred to minimize the consumption.

Oxford Shoe (fig. 57)

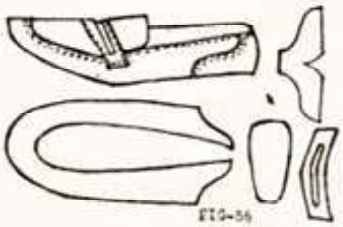
This is one of the most popular design of a shoe



till date. The components are (a) Vamp=Vamp+Toe Cap (b) Quarter (c) Counter or foxing (d) Tongue in this Construction is always attached separately.

Casual Shoe (fig. 58)

This is a shoe which can be used without a lace. The last and its relevant pattern are made in such a way that the shoe grips the foot

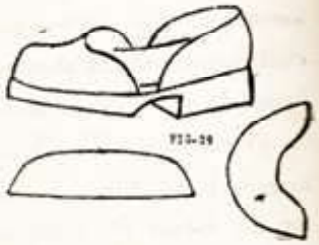


without the help of lace or elastic. The components are as (i) Vamp (ii) Appron (iii) Foxing and saddle.

VARIOUS PARTS OF A LADIES SHOE

The evening shoe (fig. 59) mainly used by the ladies are shown in the fig. Here you can distinctly observe the function of vamp and quarter separately. This shoe has an open midd'e area in the waist portion.

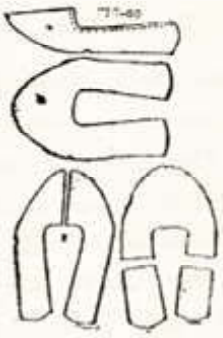
The gents' grecian shoe has got some similarities in the basic upper construction of the same. In both the cases vamps and quarters are not joined together to make a closed upper. Both the parts (vamp and quarter) are pre-



pared separately and lasted with the insole to complete a shoe.

BELLY SHOE (Balarina) (fig. 60)

This is a typical ladies shoe can be made with one piece of leather. This piece



again can be divided into two or three pieces as per figure attached. This is also a shoe without a lace or elastic.

Details of the Upper Parts

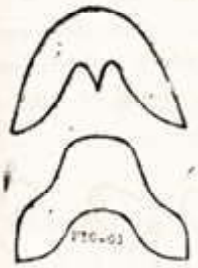
Basic vamps are divided into various parts as per the demand of the fashion and design of the particular shoe.

Toe Caps and Wing Caps

Oxford shoes are always having a toe cap, some time this shoe is designed with a wing cap. These are the two main varieties of toe caps. (fig. 57)

Appron and Vamp Wings

Moccasin shoes and some derby shoes are designed with appron and vamp wings which ultimately joins with the quarter. The type of stitching for attaching appron with vamp wings varies. There are as many as three types of appron stitching with vamp wings in true mock shoe upper construction. (fig. 61)



Tongue and Tabs

The vamp pattern of a Derby shoe may be with tongue or without tongue. This is as per the choice of the designer. The joint of the tongue is not visible from outside. The approns are often separated with a Tab. This joint is covered by saddles and are not visible from outside. (fig. 62)

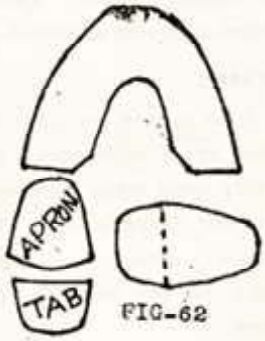


FIG-62

Peep Toes

This is a special type of vamp where toes are kept open. Mainly ladies sandal and shoes are made in this design. (fig. 92)


PEEP TOE FIG-92

Quarter

The quarters are very simple in pattern without any complication and at the same time it can be separated. It is attached with quarter facing or counter or back strap. (fig. 56)

Counter

Moccasin, Oxford and a few derby shoes are joined with a counter at the back. The quarter portion of these shoes are attached with counters. (fig. 58)

Mud Guard

Shoes, some time, are designed in such a fashion in the walled last that the walled portion is separately joined by a piece of leather all through from inside back to outside back of the shoe is known as Mudguard. When a shoe is vulcanised with rubber sole, a rubber mud guard is attached covering the whole length of the shoe. (fig. 63)

Saddles and Bars

Vamp of a shoe (mainly true moccasin, moccasin, casual) may have a saddle across it in between the ball and instep girth region. This is attached mainly for

a) To strengthen the flexing portion of the vamp because it had to bear the constant flexing while walking.

b) To cover the stitch between appron and tab and sometime vamp. There are three types of saddles/bar generally used for a shoe upper.

(a) Half saddle (b) Full saddle (c) Bar. (fig. 64)

Fig 64

Back Strap :

The back curvature of the quarter is rein-forced with it. This plays a vital role to keep the back line intacted. It has to bear a considerable strain while in lasting as well as during in wear. The strap of leather which joins the back of the quarters provides extra strength to the back seam. (fig. 65)

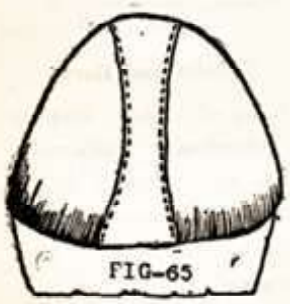


FIG-65

Part—III

LINING OF A SHOE

Vamp :

Vamp lining is kept shorter by 7 to 9 m/m in its' perimeter. Textile or leather (dyed lining leather) is used as a material as it contacts directly with foot.

Quarter :

Lining pattern of quarter varies largely from its original upper pattern as one has to keep space for insertion of counter in between upper and lining. Usually leather is used as lining material.

Backer :

Shoe uppers, mainly for ladies upper with glaced kid leather need some reinforcement for strengthening. This is usually done by sticking a fabric backer beneath the upper.

The facing of laced shoe is normally supported by putting a reinforcement in between upper and lining of a quarter facing.

Socks :

A piece of usually lining material is placed on the insole to cover the whole part of it. In a complete shoe it bears the brand name size etc. etc.

VARIOUS BOTTOM PARTS OF A SHOE

Insole :

The bottom part of a shoe last is called insole. A shoe construction is based on it's insole only. The initial moulding or lasting of the upper is done on insole. Usually single piece material (leather or leather board) was used for this purpose but now-a-days blended insoles (flexible forepart and a rigid seat portion) are in use. Though full insole is used for most of the construction but half insoles are used for true moccasin construction. In some rubber moulded shoes, insoles are inserted in the shoe after the shoe is being manufactured.

Sole :

The lasted shoe is stucked/stitched with a material at the bottom is called the 'SOLE'. This part always remain touched with the ground. A light and good abrasive resistant soling material is ideal for a shoe.

Heel :

It is moulded with sole or remains separately attached in a shoe. This is the seat portion of a shoe which bears the body weight. The heel of a shoe has various height which is dependent on the toe spring of the shoe (fig. 66)

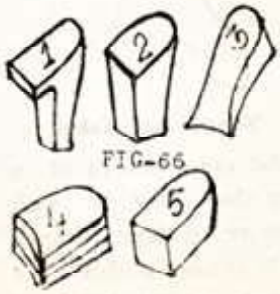


FIG-66

Heel Lifts :

Leather heels are made with the attachment of several layers of materials. Required components are attached, trimmed and moulded to make a complete heel.

Top Piece :

Final layer of the heel lifts which touches the ground are known as top pieces. Top pieces are usually made with prime quality leather.

Welt :

There are two types of welts are in use in footwear making. (i) Mock welt (ii) Welt for welted shoe construction. The former welt is used as an ornament for the shoe while the latter is used for attachment of bottom part with lasted upper construction. It is a strip of leather skived one edge to facilitate attachment with the insole rib. There is also a groove on its flesh side into which the welt sewing passes.

BOTTOM FILLING :

The filler is used to fill the gap, in between insole and outsole or midsole, formed due to lasting of upper on the insole. Granulated cork sheet, leather or felts are the ideal material as it goes inside the forepart of the shoe. However any other material if used must be flexible in nature.

Midsole :

In heavy footwear such as safety boot or ammunition boot an intermediate layer of sole is used in between insole and outsole is known as midsole or through sole.

Runner :

In Veldtschoen construction a special type of insole, which is extended all round to facilitate "out-flanged" lasting, is known as runner.

Beside these above mentioned bottom parts of the shoe there are various components are used to complete a pair of shoe.

COMPONENTS

Toe Puff :

To retain the shape at the toe portion of the shoe a thin stiffening material is inserted in between lining and upper at the toe of the shoe is known as Toe puff.

Back Stiffener

A stiffening material, premoulded and shaped in case of machine lasting or simply inserted in case of hand lasting, is used in between lining and upper in seat portion to support the back of the shoe and to grip the foot is known as back stiffer.

Shank :

To reinforce the waist of the shoe a strip of metal or wood is placed in between insole and sole. The metal shank is moulded as per the bottom shape of the last.

(1) ALBERT SHOE :

A simple low-cut men's casual shoe. No elastic or lace is used in this shoe. Lasts are choosen for better gripping and patterns are cut accordingly. It is made with one piece of leather, but some time a cut is provided on the inside quarter. (fig. 67)

ALBERT SHOE • FIG-67

(2) BAR SHOE OR MONK SHOE :

The basic construction of the shoe is like Derby shoe. Instead of providing eyelets in the quarters, the quarter of the shoe is designed with a bar running over the instep from the inside quarter to outside quarter. The bar is ultimately fastened with a button or a buckle. (fig. 68) This is generally known as one bar. There are also two bar/three bar shoes indicating the number of straps.

BAR SHOE OR MONK SHOE

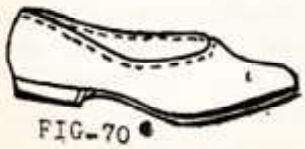
(3) BALL SHOE

This is a wide open simple low-cut ladies shoe. The front line of the shoe passes through the main line of flexing of the foot. This part of the foot is referred to the joint. The comb area of the last must have a better gripping design (fig. 69)

Fig 69

(4) BALLARINA SHOE :

A ladies shoe with low-cut, flat heel, light-weight slip-on casual shoe for teen-aged girls. Upper is made of leather or leather like P.V.C. coated fabric. (fig. 70) The overall appearance of the shoe is similar to ballet shoe.



(5) BALLET SHOE :

It is a heelless dancing shoe. Usually it is made with satcen cloths but now-a-days nappa leather is also used for this purpose. It is made on "turn shoe" process. The shoe is held on the foot by means of a ribbon or leather lace, arising from the quarters on each side, tied over the instep. There are two types of toes in this shoes. (i) soft toe and (ii) blocked or hard toe. The hard toes are used for the special types of dances which are performed by toes. (fig. 71)

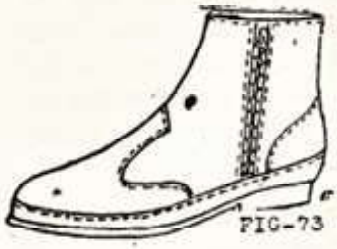
(6) BALMORAL SHOE :

The name Balmoral came from "Balmoral", a royal residence in Aberdeen shire, Scot-land, the favourite country house of Queen Victoria and her consort, Prince Albert. This was originated by Prince Albert around 1848.

This is a low-cut gents shoe as shown in the figure very much similar to an oxford shoe. This is a shoe with a closed front laced ankle. The speciality of this shoe is that the vamp wings extended to either side to join with the quarter. (fig. 72)

(7) BOOTEE :

This is basically an ankle shoe for women. The word 'Bootee' came from 'Boot' which is also an ankle high footwear used by men. The height of the quarter is slightly above the ankle. It is designed for fashion and comfort. The softy upper and warm lining material is usually used. A knitted fabric foot covering for children is also known as 'Bootee'. (fig. 73)



(8) BOOT :

It is the name given to a footwear which has a quarter height more than the height of the ankle. This may be of any type and

construction. The quarter height touching the calf is termed as long boot. (fig. 74)

FIG-74

(9) BROGUE SHOE :

This shoe was originated in Ireland in 1790.

This is a low-cut decorative shoe. The upper of the shoe which is comprising several parts each punched and serrated (gimped) along the margins, together with a punched and gimped wing cap. This decoration (brogue) effect can be made in any other style of shoes by punching and gimping. Generally it is recommended for an oxford shoe with wing cap. (fig. 75)

FIG-75

(10) COURT SHOE :

It is a traditional ladies shoe with usually a moderate heel height. There is no fastening arrangement. Originally it was made with one piece of upper component but now it is being manufactured with more than one components. The lasts are designed for better gripping of the shoe. (fig. 76)

FIG-76

(11) CHUPLEES :

This is one of the few footwears which is originated from India. The vamp portion of the sandal is divided in two parts with wide straps to cover the most part of the foot. These straps crosses each other in the front and extended round the heel. The fastening of the sandal is made with an adjustable buckle on the outside near the back. A looped strap at each side of the heel holds the strap in position relative to the sole. (fig. 77)

CHUPLEES FIG-77

(12) CASUAL SHOE :

A low cut shoe without lace or elastic for fastening it with the feet. The shoe is designed in such a way that men can easily put his feet in the shoe and start moving. The comb area of the last and the basic pattern of the shoe is responsible for gripping tightly with the feet. (fig. 78)

FIG-78

(13) DERBY/GIBSON :

This is the most popular and simplest construction for a shoe upper. It is generally made for low cut shoes but also available in high cut boots. The main features which differentiate it from an Oxford shoe is the quarter of the derby shoe is placed on the vamp. There is a sufficient space for opening. The ladies derby shoe is known as GIBSON or LORNE SHOE. It is an open throat, laced shoe with a full or separate tongue. (fig. 79)

FIG-79

(14) D'ORSAY :

This particular shoe was invented by count D'Orsay in France in 1848. It deviates from normal pump.

This is a low cut, medium heeled, ladies shoe with speciality in upper design. The top line of the shoe from back height came down ward upto the waist portion and the vamp portion which meets the back portion also follow the same way. This makes a "V" shape in the waist area. This is made with one piece of upper material (fig. 80)

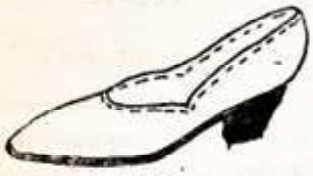


FIG-80

(15) FRINGE/SHAWL

As early as 100 B C this shawl tongue shoe was found in Greek where women athletes were using the same. Gradually this shoe made its way into Scotland where it was further developed.

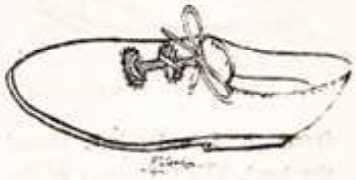
This is a low cut dressed shoe with elastic in the instep area for fastening the shoe with feet. A slashed tongue is attached to the shoe which covers the instep. (fig. 81)

FRINGE/SHAWL TONGUE
FIG-81

(16) GHILLIE SHOE :

This shoe was originated in Scotland during ancient Gaelic time with an unique lacing arrangements.

It is a specially designed Oxford shoe where the fastening by lace is not through eyelets. The shoe lace is passed through rings or loops, usually metal, stitched into the margin of the front opening instead of eyelet. The front opening portion from vamp throat to instep end the quarter facing are secured by lacing through slotted rings or loops. The top lines are designed in such a way that a lace can be passed through the top line to allow it to be pulled to the required tightness. (fig. 82)



(17) GORE SHOE :

This shoe was invented by Mr. Sparks Hall of London, a boot maker to queen Victoria in 1836.

It is a low-cut shoe with a heel height slightly higher than ordinary shoe. It is basically a two part (vamp+ quarter) shoe placing vamp upon quarter. Elastic is placed in the instep area to hold the shoe with the foot. (fig. 83)

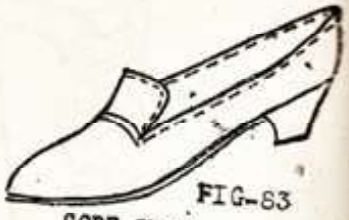


FIG-83
GORE SHOE

(18) GRECIAN SHOE/ SLIPPER :

This is a slipper cum shoe with no elastic or lacing arrangements for holding the shoe with foot. Most of the foot is covered by two piece of upper components individually lasted. The vamp and the quarter both curving down wards to overlap on both sides near the sole in the waist region. The joining portion of the shoe gives a "V"—shape cut away appearance. (fig. 84)

FIG-84

GRECIAN SHOE/ SLIPPER

(19) JODHPURI BOOT :

There are two types of Jodhpuri boots are available. One is semi ankle height with 3 to 4 eyelets, quarters are made with one piece leather and simple derby type construction (fig. 85). The other is with ankle or


JODHPURI BOOT FIG-85'a'

more than ankle high boot. To fasten the boot more secured with foot a strap buckling behind the ankle is attached in the quarter. A man can get his required fittings with this buckles. This shoe is also known as CHUKKA BOOTS. (fig. 85a)


Fig 85

(20) JALSA :

A low cut wide open casual shoe. It is generally made with single piece upper component joined at the back. It is a traditional Indian shoe (fig. 86) for men.

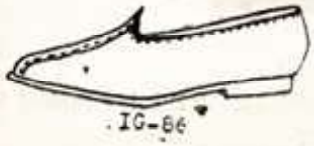
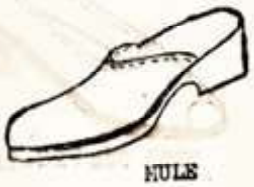


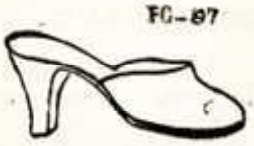
FIG-86

(21) MULE :

The mule derives its name from the early Sumerians one of the two ancient devisions of Babylon.

This is basically a ladies sandal. It is with no counter and quarter. This is held on the foot by the forepart only. (fig.87) Mules are also known as "Pantofles" and and "Half-Slippers" in India.


MULE
FG-87



(22) MOCCASIN (TRUE) :

The idea of this construction was originated at an early stage of human life when men were trying to cover their feet. (fig. 88) from various natural aspects. This is a form of upper construction in which bottom and upper portion of a shoe excluding appron are made in one piece. The appron is usually attached with a heavy cord by bold hand stitching. This upper construction does not need any lasting. To get the shape retention of upper the same is put on a "pre-forming" machine before it is finally stucked/stitched with the sole. A half insole is used in this shoe. (fig. 88) The fastening of the shoe is done by elastic at the instep points where the quarters are met. A saddle is also there in the shoe.

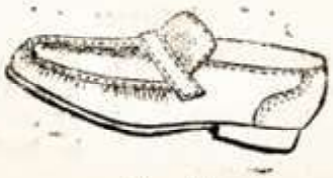


Fig. 88

(23) MOCCASIN ORDINARY :

The visual apperance of the ordinary moccasin is same like true moccasin. Only difference is that bottom portion is not attached with the shoe upper and as such the upper is lasted with the insole as usual for any other shoe. Full insole is used. Here also the fastening of shoe with the foot is done by elastic. (fig. 89)

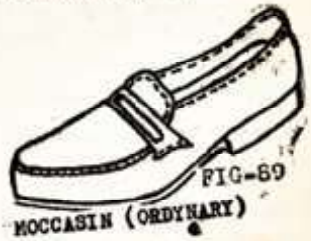


FIG-89
MOCCASIN (ORDYNARY)

(24) OXFORD :

This name of the shoe came from the place where it was originated. This shoe was originated in 1640 in Oxford in England.

It is a low cut, open

throat, laced shoe usually with 5 eyelets. The toe cap or vamp wing and counter at the back is a regular feature of an oxford shoe. The basic difference of this shoe with a derby shoe is that the vamp portion of this Oxford upper is placed upon the quarter. The tongue is always attached separately in this construction. (fig. 90)

FIG-90

(25) PUMP SHOE :

The word 'Pump' is used for describing any lightly constructed shoe of basic court shoe type. Formerly this shoe was made by the turn shoe method. This is a low cut ladies shoe wide open and having no additional means of fastening. This is made light bottom material and with low heel usually worn with evening dress and for dancing. (fig. 91)

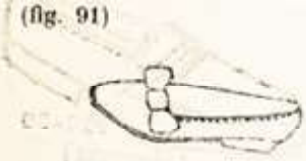
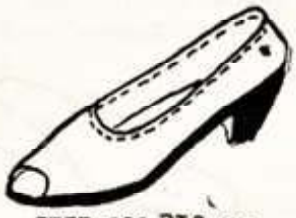


Fig. 91

(26) PEEP TOE :

A shoe is made with a design to keep the toe portion open. The vamp consists only a single piece or interlaced straps. This is usually made for women's shoe. (fig. 92)



PEEP TOE FIG-92

(27) SLING-BACK

A footwear, mainly used by women, with peep toe or covered toe, which has an open back or "sling back" upper. The quarter for this footwear is replaced by a buckled strap or strap with elastic at back, passing from the forepart round the back of the ankle. The style rarely stays in fashion because the wearer's foot lefts from the seat at every step, dislodging the strap quickly. (fig. 93)

FIG-93
SLING BACK

SPORTS SHOE

The name of the shoe clearly indicates that this particular shoe is made for the sports man in various discipline. The salient feature of this constructions are shock—absorbption, flexibility, durability and light in weight. Good fitting of a sports shoe is essential for comfort-stability-reduction of injuries. Now-a-days sports shoe have become a fashion trend and common people also wearing the same shoe. (fig. 94)

Reference

1. T.N.O. Report 1989—TNO leather and shoe Research Institute, Netherland.
2. Glossary—Complied by G. J. Baynes and Roger Beeby.
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5. All the diagrams in this article are drawn by Budhadev Sinha.

(To be continued)

INTEREST EQUALISATION SCHEME FOR EXPORTERS EXTENDED FOR 2 MONTHS; FIEO DISAPPOINTED

The government on Friday extended the interest equalisation scheme on pre- and post-shipment rupee export credit for two months to promote the country's outbound shipments.

The scheme which provides exporters interest benefits was ending on June 30 this year. However, apex exporters' body Federation of Indian Export Organisations (FIEO) expressed disappointment over the move as the extension was applicable only for MSME exporters.

In a notice, the Directorate General of Foreign Trade (DGFT) said, "Trade and industry is hereby informed that the Interest Equalization Scheme for Pre and Post Shipment Rupee Export Credit, which had earlier been extended up to June 30 as a fund limited scheme, has been further extended for two months i.e., up to August 31."

It said, however, this extension is applicable only for MSME exporters, and for such extended period, the total outlay of the scheme is capped at Rs 750 crore. It added that claims of non-MSME exporters will not to be entertained beyond June 30.

On December 8, 2023, the Union Cabinet approved an additional allocation of Rs 2,500 crore for the continuation of the scheme up to June 30.

The scheme helps exporters from identified sectors and all MSME manufacturer exporters to avail of rupee export credit at competitive rates at a time when the global economy is facing headwinds.

Exporters get subsidies under the Interest Equalisation Scheme for pre- and post-shipment rupee export credit.

The additional outlay of Rs 2,500 crore, over and above the current outlay of Rs 9,538 crore under the scheme, was made available to bridge the funding gap to continue the plan up to June 2024.

The scheme was started on April 1, 2015, and was initially valid for five years up to March 31, 2020. It has been continued thereafter, including a one-year extension during Covid-19, and with further extensions and fund allocations.

Commenting on the development, Ashwani Kumar, President, FIEO, said that this is quite disappointing for those exporters who are exporting products under 410 tariff lines (or product categories), if they are not manufacturer MSME.

"This may affect exports of labour-intensive exports, which has lost market share in past few years, as many merchant exporters are playing pivotal role in exporting such products and exports of such products from some large companies may also be impacted," Kumar said.

The scheme is fund-limited, and benefits to individual exporters are capped at Rs 10 crore per annum per IEC (Import Export Code). The country's exports in May rose by over 9 per cent to USD 38.13 billion.

(deccanherald.com – 28/06/2024)

UNEMPLOYMENT IN INDIA 2024

Theme

The National Sample Survey Office (NSSO) performed the Periodic Labour Force Survey (PLFS) in 2023, and the results showed that India's unemployment rate had decreased dramatically, reaching its lowest level in the previous three years.

Key employment and unemployment indicators such as the Worker Population Ratio (WPR), Unemployment Rate (UR), and Labor Force Participation Rate (LFPR) are estimated by the PLFS, along with the activity statuses of "Usual Status" and "Current Weekly Status."

What Is The Report On The Unemployment In India?

India's Unemployment Rate

- In 2023, the unemployment rate in India for those over the age of 15 fell to 3.1%, which is the lowest level in the previous three years.
- In 2022, the unemployment rate was 4.2%, whereas in 2021 it was 3.6%.
- The female unemployment rate has decreased, from 3.3% in 2022 and 3.4% in 2021 to 3% in 2023.
- Likewise, for men, it dropped from 4.5% in 2021 and 3.7% in 2022 to 3.2% in 2023.

Recovery in Employment Scenario

- Following the easing of state and federal lockdowns, there has been an improvement in the job situation following the effects of the Covid-19 epidemic.

Urban and Rural Unemployment

- Urban regions saw a fall from 5.9% in 2022 and 6.5% in 2021 to 5.2% in 2023, while rural areas had a decrease from 2.8% in 2022 and 3.3% in 2021 to 2.4% in 2023.
- The LFPR in Current Weekly Status (CWS) for people living in urban areas who are 15 years of age or older increased to 56.2% in 2023, indicating a positive trend from 52.8% in 2022 and 51.8% in 2021.

Economic Growth

- This encouraging job figure follows other statistics that showed India's economy grew by 8.4% in the third quarter of 2023–2024.
- According to NSO statistics, industries including manufacturing, mining & quarrying, and construction were major contributors to this rise.
- India's growth is predicted by the NSO to be 7.6% for the whole fiscal year 2023–2024, which is higher than the first estimate of 7.3% given in January 2024.

What Is Unemployment?

- When people who are capable of working actively seek employment but are unable to find acceptable positions, this is referred to as unemployment.
- A person who is in the labor force has the necessary abilities but is not actively working, is considered jobless.
- In essence, an unemployed individual is a person who is of working age, unemployed, able and willing to work, and actively seeking employment.

What Is The Measurement Of Unemployment?

- The following formula is frequently used to determine the nation's unemployment rate:
- [Number of Unemployed Workers / Total Labor Force] x 100 equals the unemployment rate.
- The terms "total labor force" and "unemployed" are used interchangeably in this context. People who are not in the workforce—students, for instance—are not regarded as part of the labor force.

What Are The Types Of Unemployment?

- **Structural Unemployment:** This type of unemployment draws attention to structural problems in the labor market since it stems from mismatches between the skills held by the workforce and the needs of open positions.
- **Cyclical Unemployment :** This kind is cyclical; it rises in recessions and falls in expansions, demonstrating how sensitive labor supply is to broader macroeconomic factors.
- **Frictional Unemployment/Transitional Unemployment :** This sort of unemployment, also known as transitional unemployment, is a result of people naturally changing occupations and represents the brief time people spend looking for new possibilities.
- **Underemployment :** Although it's not the same as unemployment, this idea refers to those who work in jobs that don't fully utilize their abilities or don't offer enough

hours, which adds to the feeling of inefficiency in the economy.

- **Hidden Unemployment :** Refers to those who, for various reasons, such as discouragement, are not actively pursuing work but could do so if circumstances change for the better.
- **Disguised Unemployment :** It results from the factory/ land employing more laborers than necessary. Productivity, or production per unit of labor, will thus be lower.

What Are The Major Causes Of Unemployment In India?

- **Population Size**
  - ❖ India has a large population, which increases competition for jobs and puts more strain on the labour market.
  - ❖ To effectively handle this demographic problem, economic development, and employment creation must be approached holistically.
- **Skills Mismatch**
  - ❖ One major reason is that labor force skills could not match the changing needs of the labour market. It will need measures to improve education and vocational training programs to address this issue.
- **Informal Sector Dynamics**
  - ❖ The predominance of the unorganized sector makes it more difficult to monitor and manage unemployment. A more realistic portrayal of working conditions may result in the formalization and regulation of this industry.
- **Policy Implementation Challenges**
  - ❖ Well-meaning policies may encounter difficulties in being implemented effectively, which might affect their capacity to create jobs. It is crucial to ensure consistency with ground realities and streamline the execution of policies.
- **Global Economic Factors**
  - ❖ Geopolitical changes and trade dynamics are two examples of how the global economy may influence India's employment situation. It is crucial to create policies that increase the economy's resistance to outside influences.

What Are The Government's Initiatives Related To Employment?

- **Support for Marginalized Individuals for Livelihood and Enterprise (SMILE)**
  - ❖ After the current schemes for transgender people and beggars were merged, a new scheme was created.
  - ❖ The plan calls for the rehabilitation of those who participate in begging to take place in the shelter houses already owned by the State/UT Governments and Urban Local Bodies.
  - ❖ If the current shelter houses aren't available, the implementing agencies are required to provide new, purpose-built shelter homes.
- **PM-DAKSH (Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi)**
  - ❖ The PM-DAKSH Yojana will go into effect in 2020–21.
  - ❖ This covers the provision of skill development training programs on entrepreneurship development, short-term training, up-skilling/reskilling, and long-term training to qualified target groups.
  - ❖ The Ministry of Skill Development and Entrepreneurship's sector skill councils, government training institutes, and other reliable organizations are putting these training programs into action.
- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**
  - ❖ One of the biggest employment guarantee programs in the world is MGNREGA.
  - ❖ The main goal of the program is to provide adult members of rural households who are willing to perform unskilled manual labor connected to public work with 100 days of employment guaranteed per fiscal year.

- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**

  - ❖ The government formed the Skill India Mission in 2015, which oversees the administration of the main program, Pradhan Mantri Kaushal Vikas Yojana (PMKVY).
  - ❖ By 2022, it hopes to have trained more than 40 crore Indians in a variety of skills. Its goal is to provide Indian youngsters with vocational training and certification so they may live better and be respected by society.

- **Start-Up India Scheme**

  - ❖ It was started in April 2016 to foster grassroots entrepreneurship with an emphasis on job creation and economic empowerment.
  - ❖ Utilizing the institutional credit framework to connect with underrepresented groups of individuals, including women entrepreneurs, SCs, and STs.

- **Rozgar Mela**

  - ❖ The national government launched the Rozgar Mela as a means of giving the nation's youngsters job opportunities.
  - ❖ Ten lakh positions in Group A and B Gazetted Posts, Group B Non-Gazetted Posts, and Group C Non-Gazetted Posts will be open for applications under the Rozgar Mela Scheme.

- **Indira Gandhi Urban Employment Guarantee Scheme-Rajasthan**

  - ❖ According to the Chief Minister, creative measures have been taken to execute the "Indira Gandhi Urban Employment Guarantee Scheme" in the state, modelling it after the "Mahatma Gandhi National Rural Employment Guarantee Scheme." Approximately 1.5 lakh individuals have registered for the program thus far.

Way Forward

- Bringing education into line with the needs of the labour market by focusing on vocational training, encouraging lifelong learning to improve employability, and revising curricula to teach pertinent skills.
- Creating a supportive atmosphere for new businesses by cutting red tape, lowering costs, and supporting entrepreneurship via mentorship programs.
- Creating and executing policies that support the development of jobs, such as infrastructure spending, rules that favour company operations, and financial incentives.

Conclusion

India's unemployment rate experienced a notable decline in 2023, reaching its lowest level in three years, indicative of economic recovery and positive growth trends. The report highlights various initiatives and strategies to address unemployment, emphasizing the importance of skill development, entrepreneurship support, and policy implementation. To sustain progress, continued efforts are necessary, including aligning education with market needs and fostering a conducive environment for business and job creation.

(visionessay.com - 15/05/2024)

HIGH YOUTH UNEMPLOYMENT IN INDIA

Although India is the world's fastest growing large economy—with the GDP likely to expand by 7.6% in 2023-24—it faces a serious challenge of dealing with joblessness among the youth. In urban India, the unemployment rate for those between 15-29 years of age is 2.5 times higher at 17% than the overall rate of 6.7%, according to NSSO's latest quarterly periodic labour force survey for January-March 2024. This is a current weekly status estimate that captures those who sought or were available for work during the reference period of a week preceding the survey. Generating more employment opportunities must definitely be the priority of the new government when it assumes office in June.

The concern is that these double-digit rates of unemployment have not budged from the levels registered in January-March 2023 despite a pick-up in the pace of overall economic activity. This 'stickiness' of youth unemployment rates lends credence to apprehensions of GDP growth not being employment-intensive enough. Although a reserve army of unemployed youth portends serious strains on the social fabric, joblessness rarely figures in public discourse as some employment is being generated, especially in the urban informal sector, which is outside the purview of institutional protection.

Much has been made of a steady rise in female labour participation—share of those between 15-29 years of age who had a job or sought one. To be sure, there has been an uptick in participation between January-March 2023 and January-March 2024 but this was matched by an equivalent rise in employment, leaving the rate of unemployment for young females stable at 22.7%. More importantly, these jobs have been largely in self-employment, including as helpers in household enterprises, which are bound to raise serious questions regarding the quality of employment being generated in urban India despite robust economic growth.

High rates of joblessness are bound to trigger frustration among the youth over waiting endlessly for suitable openings especially in the government which offer the prospect of greater security. But this cannot be an indefinite wait which can force them to accept even lowly positions of peons and police constables for which they are over-qualified. Or seek opportunities abroad, even in war-torn zones like Israel and Russia. The rising incidence of young Indians leaving the country for better-paying blue collar jobs in diverse countries like Finland, Uzbekistan, Japan and Europe has been documented. Several state governments like Haryana and Kerala are actively facilitating this process as well. This is also taking place illegally to the US. While it is possible to interpret this drive as Indian nationals exploring opportunities in the global workplace due to labour shortages, the desperation to get out stems from unemployment.

The upshot is that faster economic growth must translate into more opportunities to absorb the millions of young job seekers who enter the labour market every year. Employment-intensive growth is bound to lower double-digit rates of youth unemployment. Towards this end, the implementation of much-needed labour reforms should be a major policy focus of the incoming government. India Inc must be incentivised to invest in skilling programmes and internships to generate more employment opportunities. Flexible labour markets help in enabling millions of young people to shift from agriculture to manufacturing and services jobs in urban India rather than desperately accept whatever is available or seek temporary work opportunities abroad.

(financialexpress.com – 18/05/2024)

CHINA'S SHARE IN INDIA'S INDUSTRIAL GOODS IMPORTS JUMP TO 30% FROM 21% IN LAST 15 YRS: GTRI

"The Indian Government and industries must evaluate and potentially recalibrate their import strategies, fostering more diversified and resilient supply chains" - GTRI founder Ajay Srivastava. With increasing India's dependence on Chinese industrial goods like telecom, machinery and electronics, Beijing's share in New Delhi's imports of such goods rose to 30 per cent from 21 per cent in the last 15 years, a report said.

According to the report by the economic think tank Global Trade Research Initiative (GTRI), the growing trade deficit with China is a cause of concern and the strategic implications of this dependency are profound, affecting not only economic but also national security dimensions.

From 2019 to 2024, India's exports to China have stagnated at around $16 billion annually, while imports from China have surged from $70.3 billion in 2018-19 to over $101 billion in 2023-24, resulting in a cumulative trade deficit exceeding $387 billion over five years.

"The Indian Government and industries must evaluate and potentially recalibrate their import strategies, fostering more diversified and resilient supply chains", says, GTRI founder Ajay Srivastava.

This is imperative not only to mitigate economic risks but also to bolster domestic industries and reduce dependency on single-country imports, especially from a geopolitical competitor like China, he added. "Over the last 15 years, China's share in India's industrial product imports has increased significantly, from 21 per cent to 30 per cent. "This growth in imports from China has been much faster than India's overall import growth, with China's exports to India growing 2.3 times faster than India's total imports from all other countries," the report said.

In 2023-24, India's total merchandise imports amounted to $677.2 billion, with $101.8 billion of that coming from China. This means China accounted for 15 per cent of India's total imports. Out of these imports from China, $100 billion or 98.5 per cent were in major industrial product categories. "When compared to India's global imports of these industrial products, which total $337 billion, China's contribution is quite significant, representing 30 per cent of India's imports in this sector. Fifteen years ago, China's share was just 21 per cent," it added.

The key sectors where New Delhi's dependence is rising significantly, include electronics, telecom and electrical; machinery; chemicals and pharmaceuticals; products of iron, steel and base metal; plastics; textiles and clothing; automobiles; medical, leather, paper, glass, ships, aircraft and remaining categories.

During April-January 2023-24, the electronics, telecom and electrical products sectors had the highest import value at $67.8 billion, with China contributing $26.1 billion. "This represents a substantial 38.4 per cent of the total imports in this category, indicating a heavy dependence on Chinese electronic goods and components," it said.

In the machinery sector, China accounts for $19 billion, which is 39.6 per cent of India's imports in the sector. This underscores China's key role as a supplier of machinery to India, Srivastava said. India's chemical and pharmaceutical imports during the period stood at $54.1 billion. Out of this, $15.8 billion came from China.

This resulted in a Chinese share of 29.2 per cent, highlighting the importance of Chinese chemical and pharmaceutical products in India. Similarly, the report said the total imports for plastics and related articles stand at $18.5 billion, with China providing articles worth $4.8 billion.

This accounts for 25.8 per cent of the total imports in this sector. Srivastava also said that half of the imports from China consist of capital goods and machinery, indicating a critical need for focused research and development in this area. Intermediate goods like organic chemicals, APIs (Active Pharmaceutical Ingredients) and plastics, which represent 37 per cent of imports, show a pressing need for upgrading these industries, he said, adding that consumer goods make up 12 per cent of the imports, while raw materials are less than 1 per cent.

The report added that many products imported from China, such as textiles, apparel, glassware, furniture, paper, shoes and toys are from categories dominated by micro, small and medium enterprises (MSMEs), and most of these items could potentially be produced domestically.

"Overall, India imports a broad array of products from China, from high to low technology items, highlighting significant gaps in India's industrial capabilities across various sectors," it added. Chinese companies are involved in India's energy, telecommunications, transportation sectors and they play critical roles in smartphones, electronics, electric and passenger vehicles, solar energy, engineering projects and many other sectors, it said. The report said that so far, imports were carried out by Indian firms but now with the entry of Chinese firms into the Indian market, India's industrial product imports are set to rise at an accelerated pace.

"As the Chinese firms operating in India will prefer sourcing most requirements from their parent firms, Indian imports will rise sharply. For example, in the next few years, every third electric vehicle (EV) and many passenger and commercial vehicles on Indian roads could be those made by Chinese firms in India alone or through joint ventures with Indian firms," the report said.

The large-scale entry of Chinese automakers into India will impact the domestic auto/EV manufacturers, firms working in the EV value chain space and battery development, it added.

(Source : Businessline – 28/04/2024)

-: JILTA : -

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History and Activities of Indian Leather Technologists' Association #1

The Indian Leather Technologists' Association (ILTA) was founded by Late Prof. B. M. Das, the originator of Das-Stiasny theory and father of Indian Leather Science on 14th August' 1950. ILTA is the Member Society of IULTCS (International Union of Leather Technologists & Chemists Societies) representing India.

The primary objectives of the oldest Leather Technologists' Association which celebrated its Diamond Jubilee year in 2010, are :

- To bring all concerned with the broad spectrum of the leather industry under one umbrella.
- To organize seminar, symposium, workshop in order to create information, knowledge and latest development for the benefit of all concerned. To offer a common platform for all to interact with each other in order to understand each other's problems and prospects.
- To publish monthly journal as a supplement to those above objectives. The monthly journal of ILTA is known as journal of Indian Leather Technologists' Association and is the most widely circulated technical journal concerning leather technology.
- To publish text books for the benefit of students at various levels of study, for the researchers and industry.
- To have interface between urban and rural sector.
- To assist various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies acceptable and adoptable to the industry.
- To organize practical training and to provide skilled manpower and to motivate good students for study.
- To conduct activities related to the growth of the export of leather and leather goods from India.

ILTA also organizes Prof. B. M. Das Memorial Lecture every year during the Foundation Day Celebrations on 14th August, Sanjoy Sen Memorial Lecture on 14th January, the birthday of our late President for several decades, Prof. Moni Banerjee Memorial Lecture on 15th March, the birthday of our late Founder-General Secretary of our Association and Prof. S. S. Dutta Memorial Lecture on 2nd February every year during IILF at Chennai. Many reputed scientists, industrialists and educationists have delivered these prestigious lectures. Foreign dignitaries during their visits to India have addressed the members of ILTA at various times.

ILTA have published the following books :

1. An Introduction to the Principles of Physical Testing of Leather by Prof. S.S. Dutta
2. Practical Aspects of Manufacture of Upper Leathers by J. M. Dey
3. An Introduction to the Principles of Leather Manufacture by Prof. S .S .Dutta
4. Analytical Chemistry of Leather Manufacture by P. K. Sarkar
5. Comprehensive Footwear Technology by Mr. Somnath Ganguly
6. Treatise on Fatliquors and Fatliquoring of Leather by Dr. Samir Dasgupta
7. Synthetic Tanning Agents by Dr. Samir Dasgupta
8. Hand Book of Tanning by Prof. B. M. Das

ILTA presents awards in the name of Prof. B. M. Das Memorial, Sanjoy Sen Memorial, Prof. J. M. Dey Memorial, Prof. Moni Banerjee Memorial and Prof. S. S. Dutta Memorial Medals to the top rankers at the University Graduate and post graduate levels. Prof. J. Sinha Roy Memorial Award for the author of the best contribution for the entire year published in the monthly Journal of the Indian Leather Technologists' Association (JILTA). From the year 2023, ILTA has started to present a Scholarship namely Prof. Moni Banerjee Memorial Scholarship to a student of B.Tech / M.Tech in Leather Technology who is meritorious but financially crippled.

contd.

History and Activities of Indian Leather Technologists' Association #2

Registration No. KOL RMS/074/2022-24

The International Congress of IULTCS used to held in different locations of the world once in two years. In its 125 years long history, for the first time the Congress was held in January 1999 outside the developed countries and that too in India at CLRI, Chennai. Indian Leather Technologists' Association organized the Congress under the able leadership and guidance of Late Sanjoy Sen, the then President of ILTA and IULTCS and Dr. T. Ramasami, the then Vice-President of ILTA and Director, CLRI, Chennai. In 2017 IULTCS Congress was successfully held again at Chennai, India for the second time.

In order to promote and provide marketing facilities, to keep pace with the latest design and technology, to have better interaction with the domestic buyers, ILTA has been organizing LEXPO fairs at Kolkata from 1977, Siliguri from 1992 and Durgapur from 2010. To help the tiny, cottage and small-scale sectors industries in marketing, LEXPO fairs give the exposure for their products. Apart from Kolkata, Siliguri and Durgapur, ILTA have organized LEXPO at Bhubaneswar, Gangtok, Guwahati, Jamshedpur and Ranchi. It commensurate with the time, demand and new perspective of the modern-day leather users. ILTA has started to organize LEXPO at Kolkata from 2022 in a new shape with the Manufacturers and Exporters of Leather Goods from all over India.

ILTA celebrated its Golden Jubilee with a year long programme from 14th August' 2000 to 13th August' 2011 along with the first conference of South East Asian Countries at Netaji Indoor Stadium, Kolkata.

The Association's present (as on 31.03.2024) strength of members is around 550 from all over India and abroad. Primarily the members are leather technologists passed out from Govt. College of Engineering & Leather Technology, Kolkata, Anna University, Chennai, Scientists from Central Leather Research Institute (CLRI), Harcourt Butler Technical University, Kanpur, Govt. Institute of Leather Technology, Jalandhar, Central Footwear Training Institute, Agra, Central Footwear Training Centre, Budge Budge, Footwear Design & Development Institute, Kolkata, National Institute of Fashion Technology, Kolkata etc.

In order to strengthen its activities, ILTA have constructed its own six storied building at 44, Shanti Pally, Kasba, Kolkata – 700107 and have named it "Sanjoy Bhavan".

This Association is managed by an Executive Committee duly elected by the members of the Association. It is absolutely a voluntary organization working for the betterment of the Leather Industry. None of the Executive Committee members gets any remuneration for the services rendered but they get the satisfaction of being a part of this esteemed organization.

ILTA
Since 1950

Indian Leather Technologists' Association
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