

IMPACT SHEET • SWITCH-ASIA PROJECT
**SUSTAINABLE AND CLEANER PRODUCTION IN THE
MANUFACTURING INDUSTRIES OF PAKISTAN (SCI-PAK)**

MODERNISING MANUFACTURING INDUSTRIES IN PAKISTAN



**SCI-PAK ACHIEVED MORE THAN 35% REDUCTION
OF ELECTRICITY IN THE TARGET SECTORS AND THEREBY
CONTRIBUTED TO THE REDUCTION GREENHOUSE GAS
EMISSIONS IN PAKISTAN**



THE CHALLENGE

Pakistan's industry is highly energy intensive and the existing technologies are not sustainable. In Pakistan, several cleaner production initiatives have been undertaken in the past decade. Such schemes include energy audits, technical assistance to adopt energy efficiency and waste water recycling techniques, raising awareness on cleaner production packages. Despite these initiatives, the target sectors leather and textile lack know-how and capacity to apply sustainable production technologies and be aware of environmental impacts and associated potential financial benefits. The manufacturing sectors in Pakistan still have problems dealing with resource efficiency and recovery. The industries do not understand the financial benefits that arise from actions that conserve energy and recover natural resources from manufacturing processes.



ACTIVITIES / STRATEGY



SUPPORTING SMES TO PROMOTE SUSTAINABLE PRODUCTION

The *SCI-Pak* project implemented a range of energy and resource efficiency initiatives in the textile and tannery sectors of Pakistan, with potential replication to other industries. The project addressed SMES with a Life Cycle Assessment portfolio that highlights hot spots for energy and resource efficiency. It works with a sustainable production technology matrix that prioritizes energy and resource efficiency options for Pakistan's manufacturing sectors with respect to environmental, financial, energy and material benefit.



ADDRESSING EQUIPMENT MANUFACTURERS AND ACADEMIA TO WIDEN OUTREACH

The project trained Industrial Equipment Manufacturers to design and produce modern energy efficient equipment. Trainings and visits to European research institutes were conducted as IEMS plan a central role in establishing technologies and methodologies for implementing SP practises for the manufacturing sectors. The project addressed educational institutions by designing technical courses for students of engineering institutes to equip them with the tools for sustainable production. An enabling financial environment was created by involving SME Banks, and further financial institutions (FI) along with other leasing and financial mechanisms to create feasible economic instrument which will make SCP financially attractive. The project identified policy instruments to strengthen a SP Network and presented them with stakeholder seminars.

OBJECTIVE

The project *Sustainable and Cleaner Production in the Manufacturing Industries of Pakistan (SCI-Pak)* aims to implement a range of energy and resource efficiency initiatives in the textile and tannery sectors in Pakistan, with the potential to adapt these initiatives to other manufacturing industries in the long-term (e.g. sugar, pulp and paper, steel rolling etc.).

TARGET GROUPS

- SMEs: Enterprises active in the Textile Processing and Tannery sectors of Pakistan
- Industrial Equipment Manufacturers (IEMs) (i.e. boiler, water recycling and recovery plant manufacturers, etc.), who will be trained to design and produce modern energy efficient and resource optimized machinery and equipment
- Service Providers: Pakistan Tanners Association, All Pakistan Textile Processing Mills Association
- Governments: Ministry of Environment (Pakistan)



SCALING-UP STRATEGY



LINKING TO POLICY MAKERS

The *SCI-Pak* project conducted an assessment study on Policy Formation and Development by interviewing policy makers, reviewing existing policies and current policy Implementation. A roundtable with policy makers drafted policy recommendations to foster E&RE support in SMEs. The project engaged policy makers of the Ministry of Environment & Industry at international events to present the benefits of E&RE involvement.



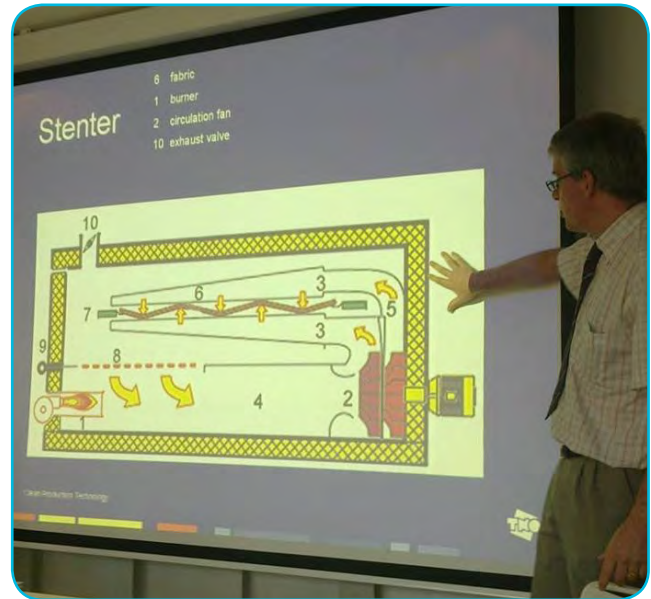
LINKING WITH ACADEMIA

The project engaged universities to integrate sustainable technology courses in existing graduate programmes. Memorandum of understandings (MoU) were signed with the educational institutes, and experts are working to formalise the working relationships. Future cooperation included topics such as energy auditing, sustainable production and consumption, better housekeeping, end-of-pipe treatment, environmental impact assessments, and initial environmental examinations.



ENABLING ACCESS TO FINANCE

To promote financial solutions, the *SCI-Pak* project established an “Energy and Resource Efficient (E&RE) Network”. The network established together with the State Bank of Pakistan (SBP) and commercial banks initiated a round table to address the financial needs of Small and Medium Enterprises.



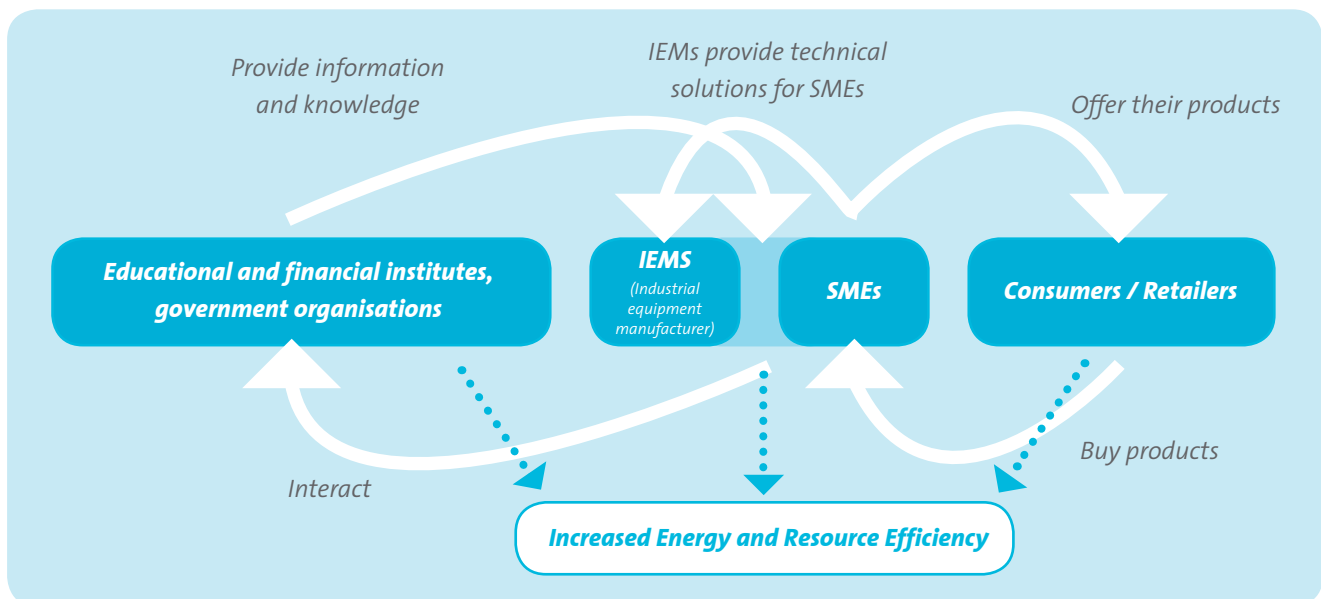
ESTABLISHING NETWORKS

Setting up the (E&RE) network was a cross-cutting activity with sub-activities like:

- 1) Assign responsibilities & functions to members
- 2) Management (Operational & Financial)
- 3) training sessions, awareness- & consensus building – seminars on policy instruments, publication of brochures and project website.

The project created a multiplier effect by engaging associations including the Pakistan Pulp and Paper Mills Association and All Pakistan Sugar Mills Association.

Energy and Resource Efficiency Network and its functions



RESULTS



CAPACITY INCREASED

A training model for sustainable production was developed. The model has potential for adaptation for other industries. Materials include a booklet on SCP Networks with guidelines how to set up such a network. Project resources also include two Management Navigators for financial institutions and business associations. Due to project engagement local educational institutes fostering academic-industrial partnerships to educate students in E&RE technologies.



LINKS ESTABLISHED

The project engages stakeholder in a Sustainable Production Network implemented and established linkages between SMEs & EU Environmental Standard Organisations. Established & capable manufacturing sector focused on enabling the proliferation of E&RE technologies. The established network portal provides information created during the project on Energy and Resource Efficiency. The portal targets SMEs and IEMs.



SCP PROMOTED BY SHOW CASES

A series of pilot E&RE implementations available for replication by SMEs, showcasing complete SP model in manufacturing processes. By developing show cases focusing on economic benefit and the rate of return, the project convoked SMEs to adopt SCP practices. Furthermore, to comply with the requirements of International buyers, SMEs are getting convinced to adapt SCP Practices. It is estimated that more than 200 SMEs have implemented the projects similar to pilot projects



NETWORKS TIGHTENED WITH SERVICE PROVIDERS

SCI-Pak is working with associations and Industrial Equipment Manufacturers on different E&RE interventions. IEMs were trained on energy and resource efficiency technologies including Caustic Recovery, Efficient Biomass Boiler Design, Oxygen Trim System, Chrome Recycling, Cleaner Production in Leather Sector and Cleaner Production in Textile Processing.



Associations are engaged through training and dialogue to support the effective Access to Finance for E&RE. These IEMs (currently in the tannery sector) are now capable of marketing and implementing SP concepts in their target sectors. Moreover, the networking activity has enabled local IEMs to establish long-term relationships with European IEMs for technology transfer from Europe to Pakistan.



FINANCING INSTITUTIONS (FI) INVOLVED

SCI-Pak is working with 12 FIs to better address the SMEs need for Access to Finance for E&RE. One roundtable elaborated strategies for proper communication and effective outreach with SMEs. Project worked with SBP on promotion of 3 financial instruments offered by SBP which can be used for energy and resource efficient technology financing. The tools were disseminated among 100+ SMEs.







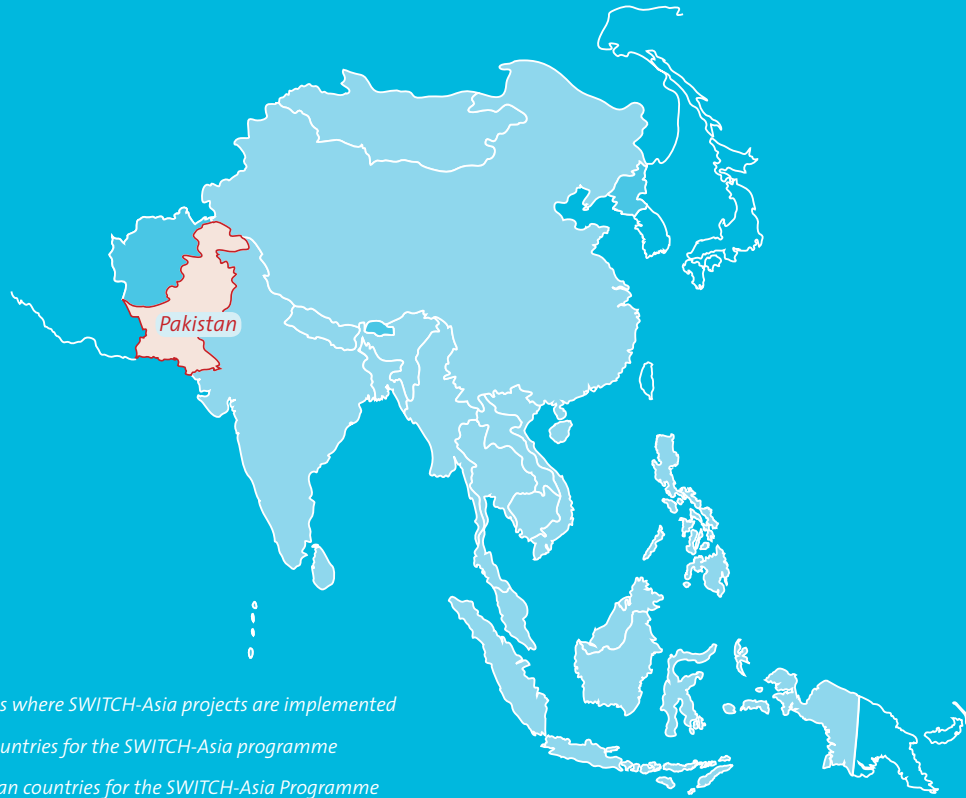
By adopting different resource efficiency measures such as Chrome Recycling, Salt De-dusting and Batch Washing in our tannery processes, we have gained not only the financial benefits in terms of resource conservation (Water, chrome and other chemicals) but also have experienced process improvements, better product quality, improved occupational environment and reduction in wastewater pollution load at source.

*Mr. Ashfaq,
MH tannery*



IMPACT IN NUMBERS

<p>ENVIRONMENTAL IMPACT</p> 	<p>REDUCTION OF GHG EMISSION: Textile sector: 43,000 tons of CO₂ per year Leather (Tanneries) 3,000 tons of CO₂ per year</p> <p>RESOURCE EFFICIENCY: Leather Sector: 5% water reduction, 36% electricity reduction, 20% gas reduction Textile Sector: 15% water reduction, 42% electricity reduction, 20% gas reduction</p> <p>5 PILOT PROJECTS DELIVERED FOLLOWING IMPACT: Caustic recovery plant: 30% reduction in caustic soda usage Waste Heat Recovery Boiler: 20% reduction in fuel consumption for steam generation Rice Husk Boiler: 100% fuel switch to carbon neutral fuel. Chrome Recycling: 20% reduction in Chrome Usage Oxygen Trim System: 7% reduction in fuel consumption.</p>
<p>SOCIAL IMPACT</p> 	<ul style="list-style-type: none"> • 50% Reduction of accidents
<p>ENGAGEMENT OF TARGET GROUP</p> 	<ul style="list-style-type: none"> • Reach out to 220 SME, 15 Equipment Manufactures, 6 Educational Institutions and 12 financial Institutions • Conducted 4 SME Engagement Seminars, 3 IEM Training, 14 Student Seminars, 3 Clean Development Training Seminars • 4 trainings for SMEs on Energy and Resource Efficiency Options • 4 trainings for Industrial equipment manufacturers • 2 trainings for business associations, chamber of commerce and industries • 1 orientation session for educational institutes and 15 seminars for students • 1 orientation session for financial institutions • 3 trainings on Clean Development Mechanism • 2 seminars on ecolabelling
<p>POLICY LINKAGES</p> 	<ul style="list-style-type: none"> • 2 roundtables with policy makers • Project input into the National Sustainable Development Strategy of Pakistan



Legend

- Eligible countries where SWITCH-Asia projects are implemented
- Eligible Asian countries for the SWITCH-Asia programme
- Non-eligible Asian countries for the SWITCH-Asia Programme

Project implementation area

- City
- Region
- Country

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

OBJECTIVES

This project aims to implement a range of energy and resource efficiency initiatives in the textile and tannery sectors in Pakistan, with the potential to adapt these initiatives to other manufacturing industries in the long-term (e.g. sugar, pulp and paper, steel rolling etc.).

DURATION



PROJECT TOTAL BUDGET

EUR 1,408,592
(EU contribution: 80%)

PROJECT CONTACT

Faraz Rasheed Mir
TTZ Bremerhaven
Fischkai 1
27572 Bremerhaven, Germany

Telephone: +49 (0) 471 80934-125
Email: frasheedmir@ttz-bremerhaven.de

LEAD APPLICANT



TTZ Bremerhaven Institute for Water, Energy and Landscape Management, Germany

PARTNERS



Collaborating Centre on Sustainable Consumption and Production (CSCP), Germany



Iqbal Hamid Trust (IHT), Pakistan



Cleaner Production Institute (CPI), Pakistan