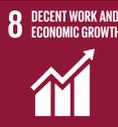


## IMPACT SHEET: METABUILD

# Creating a resource-efficient SME supply chain for metal products in the building sector in South Asia



*Resource-efficient metal products SMEs*



## CHALLENGE

Metal SMEs in Bangladesh, Nepal and Sri Lanka face several challenges. These include lack of modernisation, sub-optimal operation leading to inefficiencies, lack of technical and financial support for improving operations, lack of skilled manpower and operating with a traditional mind-set. Low financial and technical capacities lead to inefficient and resource-intensive production, especially in terms of energy, materials and water, making them less competitive. Hazardous substances used in production are oftentimes improperly handled, thereby putting employees' and communities' health at risk. RECP measures for SMEs can improve their competitiveness, thereby strengthening their contribution to the national economy while reducing environmental harm.

## PROJECT BACKGROUND

Economic and population growth in South Asia has led to a boom in construction and manufacturing sectors. As steel and other metals are a key component of construction, and are highly resource-intensive, there is a significant opportunity to improve environmental and economic performance through adopting resource-efficient cleaner production measures (RECP measures) in the metal sector. In South Asia, small and medium enterprises (SMEs) comprise a significant portion of the economy, including in the manufacturing and construction sectors. RECP measures that reduce resource use can enhance their competitiveness on national markets and internationally. Thus, building on the achievements of the preceding ACIDLOOP project in India, METABUILD worked towards enhancing the resource efficiency of metal products supplying to the construction sector in Bangladesh, Nepal, and Sri Lanka.

## PROJECT OBJECTIVES

METABUILD aimed at implementing sustainable production processes in 400 metal products SMEs in **Bangladesh, Nepal and Sri Lanka** to enhance resource savings, combat pollution and create a conducive environment for further adoption of such measures in the supply chain for the construction sector. The specific objectives were to:

- Sensitise and mobilise action within metal SMEs to invest in RECP measures and embed RECP within the company for post project sustainability;
- Build a pool of local RECP consultants who can support these SMEs beyond the project;
- Mobilise stakeholders such as policy makers, industry associations, technology suppliers and financial institutions to build a supportive framework for resource efficient SMEs and to green the supply chain.

## TARGET GROUPS

- **Metal products SMEs linked to the construction sector** i.e. steel rerolling mills, foundries (ferrous and non-ferrous), black smithy and light engineering products (bars, roofing materials, gates, doors, grills, frames, bathroom fittings, electrical cables etc.)
- **Various stakeholders** i.e. technology suppliers, financial institutions, customers of the metal products, industry associations and chambers of commerce, public officials and policy makers, local consultants.

## PROJECT ACTIVITIES

METABUILD drew on multiple partners, international and local expertise and was implemented along three project dimensions.

### Direct Industry Support

Direct industry support was provided through capacity building measures, direct consultation and guidance through the process of implementing concrete RECP measures. This comprised close collaboration and providing support for participating industries as well as training for national consultants responsible for on-site visits and the development of training materials.

### Stakeholder Engagement

This activity assumed that industries cannot manage the transition to RECP practices on their own, and require support from other actors, including environmental authorities and policy makers, technology suppliers, customers and financial institutions. Specific activities in this component were conceptualised and implemented to target key stakeholder groups individually – through customer roundtables, technology fairs, policy dialogue and financial sector engagement – to create a comprehensive support framework for RECP uptake in metal industries.

### Project Support

Managing a multi-country, multi-stakeholder project required project support measures to facilitate and optimise the direct support delivered to SMEs and wider stakeholder engagement. Key success factors for effective and efficient project management were derived from previous experience, including clear communication and balancing the activities and stakeholders involved. In addition, efficient reporting and assuring continuous internal learning enabled needs-based, customised support provision.

## PROJECT ACHIEVEMENTS

The main achievement of METABUILD was the enhancement of sustainable production technologies and practices in 403 SMEs in the metal products supply chain for the buildings and construction sector and creation of a conducive environment for RECP in targeted companies even beyond the project period.

- **3,766** RECP measures implemented
- **€ 2,943,875** monetary savings per annum
- **13,222 tonnes** reduction in CO<sub>2</sub> emissions per annum
- **33,953,817 kWh** energy saved per annum
- **48,978,140 litres** water saved per annum
- **700,436 kg** waste minimised per annum
- **4,434,782 kg** material saved per annum
- **3,049** industry personnel sensitised on RECP
- **192** technology suppliers engaged
- **133** SMEs supported in access to finance (A2F)
- **59** local consultants trained

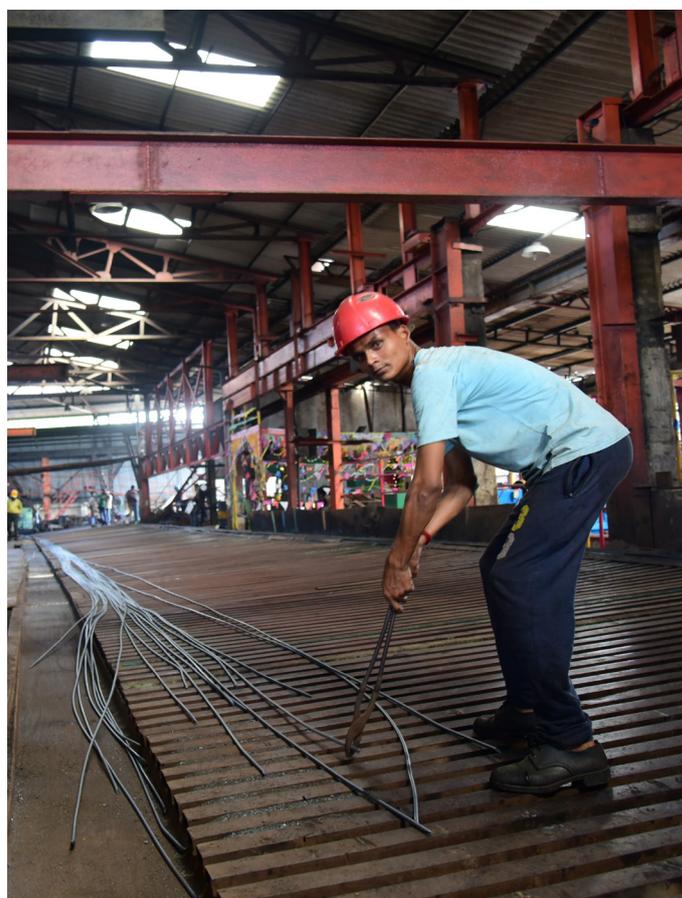
## LESSONS LEARNED

The challenges faced during the project's implementation were related to mobilising and ensuring continued participation of industries. Also, making stakeholders aware of the need to implement RECP measures and their economic and environmental benefits proved sometimes challenging. Some of the solutions to address these challenges included:

- Leveraging local industry associations, pioneer industries and customers to mobilise industry participation;
- Demonstrating cost savings and environmental benefits through showcases of implemented measures, pioneer industry success stories and savings calculations to advance implementation of RECP measures;
- Integrating standardised training of trainers (ToTs) and needs-based ToTs for the project teams to meet on-ground requirements;
- Encouraging cross-stakeholder engagement to support technical and financial knowledge sharing and the development of targeted financial and policy instruments to support Sustainable Consumption and Production (SCP);
- Linking stakeholder engagement to larger events to mobilise stakeholders and create momentum.

The key lessons learnt during project implementation included:

- Creating awareness and building trust among the SMEs is an essential first step;
- Proven examples of success helped convince SMEs;
- It helps to start implementation with low/no cost RECP actions;
- Involvement of local authorities and stakeholders is dependent on local partner links and attitudes;
- Periodic review of external factors and log-frame is needed to adapt actions to on the ground situation;
- Detailed planning, regular communication and easy accessibility of senior team members is required for smooth coordination and progress.





**Dr. Malini Balakrishnan**  
The Energy & Resources Institute  
(TERI)



METABUILD achieved success through listening to the SMEs and addressing their pain points, using local language and easy to understand messages, always highlighting the business case of SCP and engaging with all stakeholders. In all three countries, the project is leaving behind trained teams, methodology, templates, showcases and new networks with different stakeholders. The EU and Indian partners who initiated this approach with the ACIDLOOP project in India and refined it in METABUILD will now be replicating and scaling the approach with added elements in the REAP project in Central Asia.



## Long-term project sustainability

The project has, through different means, created resources for sustainability. Amongst the locally trained consultants, there still exists a core team in each location that can build upon the project's achievements. The templates, training materials, showcases, technical reference materials and measuring instruments are available to support ongoing activities. Furthermore, the links created with technology suppliers and financing institutions can be taken forward for similar actions in other sectors. One of the challenges will be to mobilise funding for such activities. SMEs themselves are typically reluctant to pay (full) market prices for such services. Options such as other third-party funding, linking with complementary services such as certification and involving large companies interested in greening their supply chain need to be explored.

RECP is one of the core activities of SEED-Nepal and NCPC Sri Lanka. Therefore the learnings from METABUILD and the approach will continue to be used in their future RECP consulting activities in Nepal and Sri Lanka. NCPC Sri Lanka along with some partner organisations of METABUILD is working on a new multi-year, multi country project including in Sri Lanka. In Bangladesh, the trained local consultants are exploring opportunities through the Sustainable and Renewable Energy Development Authority (SREDA) and other industry associations. Some METABUILD project partners and team members are utilising the networks established and experience gained for carrying out direct assignments with SME clients in Bangladesh. The project team is undertaking similar post project activities in Nepal. Finally, the METABUILD approach is being replicated by some of the partners in Central Asia.

## Project contributions to Climate Change Mitigation and SDGs

SDG 12: Responsible Consumption and Production aims at 'doing more with less', promoting resource and energy efficiency and reducing material footprint. In the METABUILD project, various resources such as materials, energy, water are covered and all the savings achieved are directly related to [SDG 12](#). Savings in energy contributed to reduction in CO<sub>2</sub> emissions of more than 13,222 tonnes per annum (the indicated figure for emissions reduction is computed only from the fuel and electricity savings achieved; emissions reduction due to water and raw material consumption reduction are additional). The project has proven that Resource Efficient Cleaner Production (RECP) not only entails ecological and social benefits by increasing the sustainability in metal products manufacture, but also makes the business case for economic benefits for small and medium industries.

The project targeted metal SMEs addressing both technical and financial aspects, contributing to [SDG 9](#). The implementation of RECP measures was a key aspect to help industries to retrofit their units to enhance sustainability, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and processes. The access of small-scale enterprises to financial services including affordable credit through access to finance was also addressed. Linkage to [SDG 11](#) was through reduction in the adverse environmental impact in metal product SMEs through reduced waste generation. Working conditions in the factory (e.g. better lighting, more comfortable environment through insulation of heated surfaces) were also improved by implementing various RECP measures. The training of consultants to RECP experts opened consulting business opportunities in the countries. This contributed to [SDG 8](#). The project also contributed to [SDG 13](#) through significant reduction in CO<sub>2</sub> emissions obtained through energy savings alone besides raising awareness on RECP and climate change. The project was implemented by an international consortium of organizations and involved partnering with multiple stakeholders (customers, technology suppliers, financial institutions, policy makers etc.) in three countries thereby contributing to [SDG 17](#).

# Impacts at a Glance

<b>Economic Impact</b>	<ul style="list-style-type: none"> <li>• 403 SMEs saved € 2,943,875 annually by implementing SCP practices.</li> <li>• 3 technology fairs conducted and 192 technology suppliers engaged.</li> <li>• 2 project partners (SEED-Nepal and NCPC Sri Lanka) have extended their consultancy business with METABUILD approach.</li> </ul>
<b>Environmental Impact</b>	<ul style="list-style-type: none"> <li>• Through implemented actions by participating companies, resource consumption has been reduced by 20.6%, energy consumption was reduced by 28.6%, reduction of hazardous waste was 30.1%.</li> <li>• Average of 9 implemented resource efficiency measures across 403 participating SMEs.</li> </ul>
<b>Social Impact</b>	<ul style="list-style-type: none"> <li>• 90% of workers from participating SMEs acknowledged a better working environment and health improvement in general due to the RECP measures implemented.</li> <li>• 59 consultants trained on RECP approach.</li> <li>• The local consultants in all three project countries had a good representation of youth with this being the first job for several persons after their graduation.</li> </ul>
<b>Climate Benefits</b>	<ul style="list-style-type: none"> <li>• Reduction of energy use (electricity, fuel) in kWh: 33,953,817 annually</li> <li>• Reduction of GHG emissions in tonnes: 13,222 annually</li> <li>• 263 best practice show cases on RECP implementation prepared and available for replication</li> </ul>
<b>Green Finance</b>	<ul style="list-style-type: none"> <li>• Number of SMEs investors engaged with: 133</li> <li>• Number of SMEs benefitting from better access to finance: 133 SMEs supported in A2F actions and 32 SMEs (24%) received loans</li> <li>• One preparation guidelines for RECP-related loan applications were made available.</li> <li>• Trained more than 30 Financial Institutions (FIs) on cleantech financial product prototyping (at least 10 in each country) and provided tailored one-on-one product refinement.</li> </ul>
<b>Target Group Engagement</b>	<ul style="list-style-type: none"> <li>• Number SMEs engaged in project activities: 403</li> <li>• Number of stakeholders involved: 2,876</li> <li>• More than 3,000 industry personnel sensitised on general and specific RECP topics</li> <li>• Number of outreach activities organized: 49</li> </ul>
<b>Policy Development</b>	<ul style="list-style-type: none"> <li>• Policy prototyping in a regional policy dialogue involving participants from Bangladesh, Nepal, Sri Lanka and India</li> <li>• 3 country-specific policy briefs for Bangladesh, Nepal and Sri Lanka circulated to government bodies.</li> </ul>
<b>Europe-Asia Cooperation</b>	<ul style="list-style-type: none"> <li>• A new project to replicate METABUILD in Central Asia (REAP) + 5 more similar actions on RECP/SCP in Central Asia, South and South East Asia.</li> <li>• 50+ events organised with international participation from Project partners.</li> <li>• Knowledge sharing took place through involvement of senior experts from EU project partners in the activities. Knowledge sharing also through METABUILD website, that contains successful RECP showcases, reports and publications</li> </ul>



## FUNDING

EUR 2,713,497.53  
(EU Contribution: 90%)



## DURATION

March 2016 - February 2020



## PARTNERS



The Energy and  
Resources Institute



STENUM Asia

STENUM Asia



Austria  
Recycling



Dhaka Chamber of  
Commerce & Industry



Society for Environmental &  
Economic Development Nepal



National Cleaner Production  
Centre Sri Lanka



adelphi

adelphi



## CONTACT

The Energy and Resources Institute (TERI)

Dr. Malini Balakrishnan

Darbari Seth Block, IHC Complex, Lodhi Road New Delhi - 110 003, India

Telephone: +91 11 2468 2100

Email: malinib@teri.res.in

Website: www.metabuild-southasia.org

*This impact sheet is developed together with SWITCH-Asia SCP Facility*

switchasia  
SCP FACILITY



Funded by the  
European Union