Preface

A. The SEAM Project - An Introduction

Support for Environmental Assessment and Management (SEAM), is a multi-disciplinary environmental project being funded by Britain’s Department for International Development (DFID). This Project is being implemented by the Egyptian Environmental Affairs Agency (EEAA) through the Technical Cooperation Office for the Environment (TCOE) and Entec, a UK based engineering and environmental consultancy.

The SEAM Project is made up of 5 components, focusing on environmental management issues. These include Industrial Pollution Prevention/Cleaner Production, Environmental Impact Assessment, Solid Waste Management, Environmental Action Plans and development of an Environmental Database.

B. The Industrial Pollution Prevention/Cleaner Production Component

The main goal of the Industrial Pollution Prevention/Cleaner Production component is to show that significant financial savings and environmental improvements can be made by relatively low-cost and straightforward interventions. These consist of pollution prevention through good housekeeping, waste minimisation, process modification and technology changes. This approach has two benefits - valuable materials are recovered rather than wasted and factories are moved towards legislative compliance. This work is being undertaken in support of the National Industrial Pollution Prevention Programme (NIPPP) and has focused on three sectors: textiles, food processing and oil & soap.

Industrial auditing of 32 factories identified in excess of 200 low cost/no cost pollution prevention measures. Commonly occurring issues were then developed as demonstration projects for each sector, whose aims were to show the financial and environmental benefits of the pollution prevention approach.

Thirteen demonstration projects have been implemented in 21 sites as follows:

Textile Sector
- Eco-friendly Processing for an International Eco-label.
- Water and Energy Conservation.
- Combined Processing: Scour and Bleach.
- Bleach Clean-Up using Enzymes.
- Sulphide Reduction in Sulphur Dyeing.

Food Processing Sector
- Installation of Milk Tank Level Controls and Valves.
- Water Conservation in Food Factories.
- Energy Conservation in Food Factories.
- Reducing Waste by Improved Quality Control.
- Recovery and Use of Whey as Animal Feed.

Oil and Soap Sector
- Waste Minimisation in an Edible Oil Factory.
- Oil and Fat Recovery.
- Improving Raw Water Quality to Reduce In-Plant Losses.

Outputs from these projects include industry workshops and seminars, demonstration projects with supporting Guidance Notes and Manuals (to enable other factories to implement similar projects themselves), case studies incorporating cost-benefit analyses to demonstrate project feasibility, detailed Sector Reports and Guidelines describing how to carry out industrial audits.
C. Industrial Pollution Prevention/Cleaner Production Documents

(i) General Documents

“Guidelines for Industrial Audits” - A description of the methodology followed in the auditing of 32 factories, 10 of which were in the textile sector.

(ii) Sector Reports

A description of 3 industrial sectors in Egypt, including information on pollution prevention/cleaner production opportunities, the findings of the industrial audits and demonstration projects.

“Textile Sector, Egypt. Cleaner Production Opportunities.”
“Food Processing Sector, Egypt. Cleaner Production Opportunities.”
“Oil and Soap Sector, Egypt. Cleaner Production Opportunities.”

(iii) Case Studies


“Case Study: Food Sector. Recovery of Cheese Whey for Use as Animal Feed.”

“Case Study: Food Sector. Integrated Quality Assurance and HACCP Approach to Waste Reduction in Food Processing.”

“Case Study: Oil and Soap Sector.” Waste Minimisation at Sila Edible Oil Company, Fayoum.

“Case Study: Oil and Soap Sector.” Pollution Prevention in Tanta Oil and Soap Company, Tanta.

(iv) Guidance Manuals

These manuals give a step-by-step description of how the demonstration projects were implemented, to allow other interested factories to implement similar projects by themselves. These are illustrated with examples from the demonstration projects and also include detailed cost-benefit analyses.
“Cleaner Production for Textiles: Sulphur Black Dyeing”. The elimination of 2 hazardous chemicals from the sulphur black dyeing process, resulting in a better quality product, reduced pollution and improved working conditions.

“Cleaner Production for Textiles: Combining Preparatory Processes”. This describes how the desize and scour or the scour and bleach steps could be combined to save money, reduce processing time and reduce environmental pollution.

“Cleaner Production for Textiles: Ecofriendly Wet Processing of Textiles”. How to improve textile processing so that it could be awarded an “ecolabel” certificate, which guarantees that the fabric meets specific quality criteria.

“Cleaner Production for Textiles: Water and Energy Conservation”. How to identify and prioritise water and energy losses.

“Integrated Quality Assurance and HACCP Approach to Waste Reduction”. How to improve food quality and reduce wastage by improving quality assurance procedures and establishing a quality management plan which incorporates HACCP principles.

“Cleaner Production for Food Processing: Water and Energy Conservation”. How to identify and prioritise water and energy losses.

(v) Workshops and Training

“Industrial Auditing - A Workshop for Auditors”. A 5 day workshop describing the auditing process and review potential barriers and how to overcome them.

“Industrial Auditing for Companies - A Workshop for the Textile Sector”. This consisted of 2 parts, one to brief senior management on the benefits of auditing and one to describe the audit process to selected technical staff and a nominated “Environmental Champion”.

“Industrial Auditing for Companies - A Workshop for the Food and Oil & Soap Sector”. This consisted of 2 parts, one to brief senior management on the benefits of auditing and one to describe the audit process to selected technical staff and a nominated “Environmental Champion”.

“Cleaner Production and Pollution Prevention. A Workshop for the Pulp and Paper Sector”. This 5 day workshop illustrated how significant financial and environmental savings could be made through the identification and implementation of low-cost Cleaner Production interventions.

“Cleaner Production and Pollution Prevention. A Workshop for the Metal Finishing Sector”. This 5 day workshop illustrated how significant financial and environmental savings could be made through the identification and implementation of low-cost Cleaner Production interventions.