Taking Stock and Moving Forward: UNIDO UNEP Resource Efficient and Cleaner Production (RECP) Programme

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Overview

1. **Taking Stock**
   - National Cleaner Production Centres
     - Key activities
     - Lessons learned

2. **Moving Forward**
   - Resource Efficient and Cleaner Production (RECP)
     - Concepts and aims
     - Networked and modular implementation

3. **Opportunities for Arab region**

4. **Concluding remarks**
National Cleaner Production Centres

- Established to foster adaptation and adoption of Cleaner Production
  1. Information and awareness creation
  2. Professional training
  3. Plant level assessments and demonstrations
  4. Policy advice
  5. Technology transfer and investment

- Programme launched in 1994 and expanded to 47 countries
Awareness and Information

- Awareness seminars
  - Private and public sectors, professional associations, etc

- Information materials
  - Success stories, websites, video/DVD
Training

- Example CP Toolkit
  - International training programme for CP service providers
  - Modular structure
    - Introduction to CP
    - Team, Policy and Motivation
    - Material Flow Analysis
    - Energy Analysis
    - Innovation, Creativity and Option Generation
    - Green Procurement and Hazardous Materials
    - Industrial and Environmental Controlling
    - Waste Management and Recycling
    - Audits
    - Networking at National and Regional Level
    - From CP to Environmental Management Systems
    - Hazard Analysis and Critical Control Points
  - Linked with supervised CP audit programme leading to UNIDO endorsed CP award
## Cleaner Production Demonstration

**La Pisqueña: Medium Tannery (Peru)**

### Principal Options Implemented

<table>
<thead>
<tr>
<th><strong>Principal Options Implemented</strong></th>
<th><strong>Benefits</strong></th>
<th><strong>Economic, Savings [$/yr]</strong></th>
<th><strong>Resource Use</strong></th>
<th><strong>Environmental Impact</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving production processes with the purpose of reducing losses.</td>
<td></td>
<td>4 228.8</td>
<td>Reductions in electricity consumption of 126000 kWh (per annum)</td>
<td>Reductions in CO$_2$ emissions of 69 ton CO$_2$ (per annum)</td>
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<tr>
<td>Improving the efficiency of the boilers.</td>
<td></td>
<td>5 259.6</td>
<td>Reductions in fuel consumption</td>
<td>Reductions in CO$_2$ emissions of 80 ton CO$_2$ (per annum)</td>
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<td>Insulating the pipes to avoid heat losses.</td>
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<td>Installing a hydro pneumatic tank.</td>
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<tr>
<td>Implementing a complete effluent and waste treatment management plan.</td>
<td></td>
<td>43 609.5</td>
<td>Reductions in water consumption of (per annum)</td>
<td>Reductions in wastewater treatment of 30% (per annum)</td>
</tr>
<tr>
<td>Timing the processes by measuring water feeding.</td>
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Cleaner Production Policy

China Cleaner Production Promotion Law

- 1 Jan 2003
- Includes provision for mandatory CP Audits for highly polluting industries
  - 2-3,000 mandatory audits per annum
- Established a system of industry specific CP guidelines
  - Currently operational for 54 sectors
- CNCPC trained so far some 15,000 CP auditors and assists Ministry of Environmental Protection administration and implementation of the CP Promotion law
  - Evaluation and acceptance procedures
Cleaner Production Investment

- Aceros Industriales
  - Mid size steel rolling mill
    - 120 employees
    - ~ 5 million USD assets
  - Replacement of chemical pre-treatment with mechanical pre-treatment
    - Eliminated waste water (and sludge) and use of hazardous chemicals
    - Net GHG reduction ~ 400 t/yr
    - Product quality improved
    - Investment: 640,000 USD
    - Annual return: 300,000 USD
Technology Transfer

- EST transfer
  - Benchmarking, gap assessment and technology selection
  - Selected NCPCs
    - E.g. Two Phase olive oil grinding and extraction (Morocco)

- Technology Upgrading
  - Design and replication of equipment enhancements for small and crafts industries
    - E.g. jig dyers, stone crushers, glass furnaces (India)
Lessons Learned

2007/8 evaluation confirmed

1. Success in
   - Putting CP on the agenda of businesses and government
   - Training of professional CP auditors
   - Implementation of CP options in companies
   - Policy change and technology transfer in several countries

2. Continued and rising relevance and potential for greater impact
   - Requires a consolidated programmatic approach that
     - Aligns CP with global concerns on resource use and climate change
     - Scales-up and mainstreams CP to facilitate transition towards sustainable industrial system
Global challenges

Climate change

Resource Use

Pollution, chemicals and waste

Jobs

Productivity and competitiveness

Challenge

→ Decouple economic growth from the use and consumption of natural resources and energy

→ Do more with less – provide more value with less environmental impact and better economic and ecological efficiency

Response

Sustainable industrial development

Resource use, pollution, waste, impact on nature

Increase

health, income, quality of life

Reduce
Goal

**Challenge**

- Decouple economic growth from the use and consumption of natural resources and energy

- *Do more with less* – provide more value with less environmental impact and better economic and ecological efficiency

**Response**

- **Sustainable industrial development**

  - Increase health, income, quality of life
  - Reduce resource use, pollution, waste, impact on nature

**Towards a green economy**
Resource Efficient and Cleaner Production (RECP)

- Continuous application of preventive environmental strategies to processes, products and services to increase efficiency and reduce risks to humans and the environment.

- RECP addresses three sustainability dimensions individually and synergistically:
  - **Production efficiency**
    - Through improved productive use of natural resources by enterprises.
  - **Environmental management**
    - Through minimisation of the impact on nature by enterprises.
  - **Human development**
    - Through reduction of risks to people and communities from enterprises and supporting their development.
Programme Objective Tree

Decouple

Programme Objective
To improve resource productivity and environmental performance of businesses and other organizations and thereby contribute to sustainable industrial development and sustainable production and consumption

Overarching Outcome
RECP concepts, methods, practices and policies widely implemented by businesses, governments, business services' and finance providers and other stakeholders in particular in the participating countries

Contribution Outcome
1: RECP Services Delivery Network
RECP service delivery capacity enhanced, through NCPCs/NCPPs and other RECP service delivery mechanisms

Contribution Outcome
2: Thematic RECP Applications
RECP implemented by enterprises and environment, resource use and economic benefits accomplished by enterprises have been verified

Contribution Outcome
3: RECP Incentives
RECP mainstreamed in relevant policy, regulations and enterprise finance

Contribution Outcome: 4. Innovation Capacity
National capacities strengthened for implementation of Environmentally Sound Technologies and sustainable product developments

Scale-Up

Capacitate & Expand

Implement & Monitor

Mainstream & Incentivise

UNIDO-UNEP RECP Programme
Green Industry – Green Economy
Programme Modules

1. RECP Service Delivery Network
   - 1.1 Global RECP Network
   - 1.2 New NCPCs
   - 1.3 Existing NCPCs

2. Thematic RECP Applications
   - 2.1 RECP for Resource Efficiency
   - 2.2 RECP for Waste & Emission Prevention
   - 2.3 RECP for Safe & Responsible Production

3. RECP Incentives
   - 3.1 Policy for RECP
   - 3.2 Finance for RECP

4. RECP Innovation
   - 4.1 Environmentally Sound Technologies
   - 4.2 Sustainable Product Developments

UNIDO-UNEP RECP Programme
Green Industry – Green Economy
RECP Global Network

• Not-for-profit initiative to bundle and utilize existing capacities of NCPCs and RECP service providers
  • Charter and supportive by-laws on membership and code of conduct developed and agreed upon

• Objectives
  • Enable and contribute to effective RECP promotion and implementation
  • Foster North-South and South-South collaboration and transfer of methods, policies and technologies

• Functions
  • Innovation and knowledge management
  • Capacity building
    • Technical and Institutional Excellence and Leadership
  • Advocacy
  • Quality control and branding
Programme Governance

Programme Board

Programme Management

- UNIDO CP Unit
- UNEP SCP Unit

Regional and National Coordination and Implementation (through UNEP Regional Industry Officers and UNIDO Country & Regional Offices)

RECP NET Executive Committee

RECP NET Members, (regional, national and sub-national RECP Service Providers)

Programme Activities
- Service delivery to network members (networking, capacity building, etc)

Projects
- Implemented by network members with specific national, thematic or sector focus, governed by complementary project management arrangements
# Roles and Responsibilities

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<tr>
<th>Modules</th>
<th>Components</th>
<th>Leading Agency</th>
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<tbody>
<tr>
<td>1. Building RECP Service Delivery Network</td>
<td>1.1 Active and expanding professional global network of RECP Service Providers</td>
<td>UNEP and UNIDO</td>
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<td>1.2 Establishment of RECP service delivery capacity in countries new to the Programme</td>
<td>UNIDO</td>
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<td>1.3 Supporting of existing NCPCs/NCPPs for up-scaling of activities and further institutional and professional development</td>
<td>UNIDO and UNEP</td>
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<tr>
<td>2. Thematic RECP Applications</td>
<td>2.1 Delivery of thematic projects on Resource Efficiency</td>
<td>UNEP and UNIDO</td>
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<td>2.2 Delivery of thematic projects on Waste and Emission Prevention</td>
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<td>2.3 Delivery of thematic projects on Safe and Responsible Production</td>
<td>UNEP</td>
</tr>
<tr>
<td>3 Policy and finance mechanisms for RECP</td>
<td>3.1 Promote a flexible framework for mainstreaming RECP in government policy</td>
<td>UNEP</td>
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<td>3.2 Develop financing mechanisms for RECP investment in industries</td>
<td>UNIDO</td>
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<tr>
<td>4. Technology management and product development</td>
<td>4.1 Develop technology management capacity for EST transfer, adaptation and replication</td>
<td>UNIDO</td>
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<tr>
<td></td>
<td>4.2 Assist countries on development and marketing of sustainable products</td>
<td>UNEP</td>
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Key Outputs

- One global RECP NET established with four regional chapters and active knowledge management and networking
- Technical and institutional capacities in current 46 programme countries enhanced to scale-up and mainstream RECP
- RECP capacities built in 15 additional countries
- A minimum of five toolkits prepared and capacity built:
  - energy efficiency, water efficiency, materials and chemicals management, safer production and waste management.
- More than 500 experts trained as trainers
- A minimum of 5,000 industries have achieved measurable economic, environmental and social benefits
- A minimum of 15 countries have mainstreamed RECP in national policy and/or financial instruments
- A minimum of 10 countries developed and implemented a national programme for sustainable product innovation
Resource Requirements

- Three types of resource mobilization and implementation
  - ~16% Programmatic backbone activities
  - ~19% Substantive thematic projects
  - ~65% Country implementation projects

- Breakdown of backbone funding (~11M€)
  - UNEP: 4.7 Million Euro (~42%)
  - UNIDO: 6.5 Million Euro (~58%)

- Total indicative budget for 5 yrs: ~ 70 M€
  - Target contributions
    - ~ 75% donors
    - ~ 25% national contributions (incl. cost recovery)
      Plus UNIDO and UNEP in kind (~4 M€)
RECP Partners

- **Strategic Partners**
  - Provide resources for core programme activities (backbone) and specific thematic and/or country projects
  - Provide leadership and direction as members of Programme Board

- **Project Partners**
  - Provide resources for several country and/or thematic projects

- **Activity Partners**
  - Pool resources towards specific activities and/or outputs of the RECP Programme
Opportunities for Arab region

- **Module 1: RECP Network**
  - Arab Chapter under RECP-Net
  - Expansion of RECP Network
    - Algeria, Iraq, Saudi Arabia, Syria, Sudan, UAE
    - Regional strategy, to be linked with regional institution
  - Knowledge management
    - Pilot RECP KMS Arab region

- **Module 2: Thematic Applications**
  - National
    - *Ongoing*: resource efficiency, chemical leasing, chemicals management, Med TEST,
    - *Starting up*: tourism and low carbon industry
  - Regional
    - *Developing*: industrial waste minimization, integrated waste management and chemicals’ management
RECP for Sustainable Tourism

- Improving the environmental and social performance of accommodation sector and its supply chains through CP and CSR methods and practices
  - Increased availability of sector-specific RECP services
  - Increased implementation of RECP by hotels and their suppliers with documented benefits
  - Improved policies and enabling environment, including through destination management

- UNIDO Project in Tunisia
  - Phase 1: Capacity building and demonstration
  - Phase 2: Scaling up
Low Carbon Industry

Approach

- Tier 1: RECP assessment
  - Lower cost and intermediate technology options with good payback and moderate emission/waste reduction
- Tier 2: Low Carbon Technology Assessment
  - Deep cuts in carbon emissions with new technology
    - Biomass to energy
    - Renewable energy integration
    - Energy efficiency and process efficacy

Project strategy

- Phase 1: Capacity building and methodology development and piloting
- Phase 2: Technology and investment
- One industry sector: agro/food processing sector
  - Pilot in Uganda, in parallel with pilot in Macedonia
Conclusions/1

- **Taking Stock**: principal achievements
  - Built professional and institutional capacities and improved enabling environment in 47 developing and transition countries
  - Proven beyond doubt that RECP makes good business sense as a cornerstone for Green Industry and Green Economy
  - Developed resources and knowledge base on RECP applications, policies and tools
  - Achieved effective partnerships between government, business sector and civil society, at national and international level, South-South and North-South
Conclusion/2

Moving Forward: main challenge

- Scale-up and mainstream RECP!
  - “Turn RECP from a leading practice adopted by selected leading enterprises to a common practice of the vast majority of enterprises”

- Critical elements
  - Give strategic priority to RECP in national development policy and international collaboration
  - Develop, implement and enforce policies and regulations
  - Make technology, products and finance available
  - Use available resources and experiences, including NCPCs and RECP Network
Thank You

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