

UNIDO's Holistic and Sectoral Cleaner Production Strategy : Productivity Increase and Competitive Market Access with Cleaner Production and Environmentally Sound Technology Development and Transfer 2003-2006

Resume

The **United Nations Millennium Declaration** aims at creating “an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty”. **UNIDO's mission** is to contribute to this goal by helping developing countries and countries with economies in transition in their fight against marginalization in today's globalised world.

An analysis of the overall context for industrial development in the last decades shows that sustainable economic and social development requires a combination of institutional reforms and economy-wide, steady and sustainable productivity gains. As stated in its corporate strategy, UNIDO's contribution should focus on its two areas of competitive advantage : technology diffusion and capacity building for market access and development. Simultaneous action in these two areas of intervention will reinforce their impact as technology transfers should not be sought for *per se*, but as a means to improve the ability of the recipient countries to compete in world markets in the context of an open economy. Productivity gains, in their various manifestations, are the ultimate gauge of the impact of these interventions.

In addition to this, the **Johannesburg Declaration on Sustainable Development** emphasizes the importance of cleaner production and eco-efficiency on the way towards sustainable patterns of consumption and production. Its **Plan of Implementation** calls for actions at all levels to establish and support cleaner production programmes and centres to assist enterprises, particularly in developing countries, in improving productivity and sustainable development (Par. 16.a.).

The proposed CP strategy is aimed at defining the specific contribution of the National Cleaner Production Centres Programme to the above UNIDO mission, supporting the goals of the United Nations Millennium Declaration and the Johannesburg Declaration on Sustainable Development.

In agreement with the analysis of UNIDO's Corporate Strategy, it focuses on the following areas of intervention:

- the diffusion of quality and productivity enhancing **Environmentally Sound Technologies (ESTs)** and
- the **support to market access** through the fulfilment of the requirements of the international markets thanks to CP itself and a combination of CP and related elements (CP and quality, EMS, health and safety, labour and other issues).

These two areas of intervention are also fully in line with the goals of the **Global Compact**, which aims at bringing companies together with UN agencies, labour and civil society to support

nine principle in the areas of human rights, labour and the environment. Principle 9 of the Global Compact specifically encourages “the development and diffusion of environmentally friendly technologies”.

In order to increase its added value and impact in the above defined areas of intervention, the proposed CP strategy will be based on the following elements:

- the new **holistic and sectoral CP approach** of UNIDO, which promotes the sustainable application of CP **throughout the entire product cycle at company and sectoral level**, using tools as Life Cycle Assessment and Eco-design. This will ensure improved efficiency and coherence of the interventions of the National Cleaner Production Centres (NCPCs) and National Cleaner Production Programmes (NCPPs);
- **cooperation with other branches of UNIDO and other international institutions**, as well as the development of **public-private partnerships**, to bring in the required expertise and take advantage of potential synergies. When possible, those activities should be developed within the frame of the Global Compact, as is already the case of the BASF-UNIDO-UNEP partnership;
- the **involvement of the main stakeholders** in the country and in the region. This should include persons and institutions from the technical, financial and policy fields, in order to ensure the actual development, promotion and transfer of ESTs;
- the development of “**tailor-made**” **CP programmes** that will answer the specific needs of each country and region, integrating the above elements at the right time and the right pace to ensure the ownership of the project by the NCPCs and NCPPs as well as within the respective countries and regions. The progressive development of the national ownership of the project will also ensure the appropriate adaptation of the chosen technologies to the local situation and the eventual sustainability of the NCPCs and NCPPs.

As mentioned above, productivity gains will be the ultimate gauge of the impact of the interventions of the NCPCs and NCPPs. The other main measure of their relevance will be their contribution to the implementation of the **United Nations Millennium Declaration**. Through its specific actions, the Cleaner Production programme aims at supporting the respective countries to respond to the following Millennium development goals:

- reducing poverty (**goal 1**) by supporting broader access of the developing countries and countries with economies in transition to global markets, helping them in their fight against marginalization and promoting the creation of productive employment;
- ensuring environmental sustainability (**goal 7**) by fostering the diffusion of quality and productivity enhancing ESTs in developing countries and countries with economies in transition, thereby reducing the environmental impact of their industries;
- developing a global partnership for development (**goal 8**) by bringing together national stakeholders and international organizations, fostering public-private partnerships and promoting NCPCs and NCPPs as reliable partners for the implementation of Multilateral Environmental Agreements (MEAs).

Table of contents

1. Introduction	4
2. The objective : economy-wide productivity gains for sustainable social advance	6
3. The interventions : transferring ESTs and facilitating market access.....	8
3.1. Environmentally Sound Technologies (ESTs).....	8
3.2. Market access.....	11
4. Increasing the impact : focused interventions within broad perspectives	13
4.1. Holistic and sectoral CP approach	13
4.2. Partnerships development and cooperation.....	14
4.2.1. Within UNIDO: providing increased added value	15
4.2.2. With other organizations: fostering strategic alliances	17
4.3. Stakeholders' involvement at the national, regional and global levels.....	18
4.3.1. At national level: fostering actual implementation of ESTs	18
4.3.2. At the regional and global levels: enhancing CP networking and South-South Cooperation	20
4.4. Needs-driven capacity building	21

1. Introduction

The **United Nations Millennium Declaration** aims at creating “an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty”. Its eight goals and the corresponding targets and indicators will help focus national and international priority-setting and the monitoring of their progress will allow to measure the relevance of the interventions of the Organizations involved in their realizations.

The **Johannesburg Declaration on Sustainable Development** supports the same objective of poverty eradication, putting specific emphasis on the change of consumption and production patterns and the protection and management of the natural resources as a base for sustainable economic and social development.

It is the role of each United Nations Organization to support the realization of these goals in its areas of specific expertise and competitive advantage. **UNIDO’s mission** is to contribute to them by helping developing countries and countries with economies in transition in their fight against marginalization in today's globalised world. In this way, it will support the challenge to “ensure that globalization becomes a positive force for all the world’s people” (par. 5 of the Millennium Declaration).

In contrast to expectations arising from conventional models of economic growth, only a few developing countries have been able to narrow down their economic distance from the advanced industrial countries over the last few decades. In fact, most developing countries have seen their gap with respect to the world productivity frontier widen over time. Why this is so is still subject to heated debate, but an analysis of the overall context for industrial development in the last decades shows that sustainable economic and social development requires a combination of institutional reforms and economy-wide, steady and sustainable productivity gains.

As stated in its corporate strategy, UNIDO’s contribution should focus on its two areas of competitive advantage : technology diffusion and capacity building for market access and development. Simultaneous action in these two areas of intervention will reinforce their impact as technology transfers should not be sought for *per se*, but as a means to improve the ability of the recipient countries to compete in world markets in the context of an open economy. For this reason, institutional capability building, skill formation and entrepreneurship development are also key to the success (impact) of UNIDO’s technical cooperation programmes. Productivity gains, in their various manifestations, are the ultimate gauge of the impact of these interventions.

UNIDO’s corporate strategy mentions the importance of the programmes relating to the implementation of the various environmentally related international protocols and the Cleaner Production Centres and Energy Programmes. In addition to this, the importance of cleaner production and eco-efficiency on the way towards sustainable patterns of consumption and production is also emphasized in the Johannesburg Declaration on Sustainable Development, whose Plan of Implementation calls for actions at all levels to establish and support cleaner production programmes and centres to assist enterprises, particularly in developing countries, in improving productivity and sustainable development (Par. 16.a.). The **Global Compact** is

another UN initiative that stresses the importance of the promotion of environmentally friendly technologies as part of the search for a more sustainable and inclusive economy.

The proposed CP strategy is aimed at defining the specific contribution of the National Cleaner Production Centres Programme to the above UNIDO mission, supporting the goals of the United Nations Millennium Declaration and the Johannesburg Declaration on Sustainable Development.

2. The objective : economy-wide productivity gains for sustainable economic and social development

Both the **United Nations Millennium Declaration** and the **Johannesburg Declaration on Sustainable Development** express the United Nations Organizations and its members' engagement to fight for the elimination of poverty and sustainable economic and social development.

The analysis developed in UNIDO's corporate strategy shows that reaching this goal of sustainable economic and social development requires a combination of institutional reforms and economy-wide, steady and sustainable productivity gains.

In agreement with this analysis, productivity gains will be the ultimate gauge of the impact of UNIDO's interventions and of the interventions of the NCPCs and NCPPs.

The other main measure of their relevance will be their contribution to the implementation of the United Nations Millennium Declaration. Through its specific actions, the Cleaner Production programme aims at supporting the respective countries to respond to the following Millennium development goals:

- reducing poverty (goal 1) by supporting broader access of the developing countries and countries with economies in transition to global markets, helping them in their fight against marginalization and promoting the creation of productive employment;
- ensuring environmental sustainability (goal 7) by fostering the diffusion of quality and productivity enhancing Environmentally Sound Technologies (ESTs) in developing countries and countries with economies in transition, thereby reducing the environmental impact of their industries;
- developing a global partnership for development (goal 8) by bringing together national stakeholders and international organizations, fostering public-private partnerships and promoting NCPCs and NCPPs as reliable partners for the implementation of Multilateral Environmental Agreements (MEAs).

In agreement with the analysis of UNIDO's Corporate Strategy, **the proposed CP strategy** aims at efficiently supporting these goals by focusing on the following areas of intervention:

- the diffusion of quality and productivity enhancing **Environmentally Sound Technologies (ESTs)** and
- the **support to market access** through the fulfilment of the requirements of the international markets thanks to the holistic and sectoral CP approach and a combination of CP and related elements (CP and quality, EMS, health and safety, labour and other issues).

These two areas of intervention are also fully in line with the goals of the **Global Compact**, which aims at bringing companies together with UN agencies, labour and civil society to support nine principle in the areas of human rights, labour and the environment. The combination of CP with labour related issues goes in line with principles 3 to 6 (Labour standards) of the Global

Compact, while principle 9 specifically encourages “the development and diffusion of environmentally friendly technologies”.

In order to increase its added value and impact in the above defined areas of intervention, the proposed CP strategy will be based on the following elements:

- the new **holistic and sectoral CP approach** of UNIDO, which promotes the sustainable application of CP **throughout the entire product cycle at company and sectoral level**, using tools as Life Cycle Assessment and Eco-design. This will ensure improved efficiency and coherence of the interventions of the National Cleaner Production Centres (NCPCs) and National Cleaner Production Programmes (NCPPs);
- **cooperation with other branches of UNIDO and other international institutions**, as well as the development of **public-private partnerships**, to bring in the required expertise and take advantage of potential synergies. When possible, those activities should be developed within the frame of the Global Compact, as is already the case of the BASF-UNIDO-UNEP partnership (see 4.2.1.b);
- the **involvement of the main stakeholders** in the country and in the region. This should include persons and institutions from the technical, financial and policy fields, in order to ensure the actual development, promotion and transfer of ESTs;
- the development of **“tailor-made” CP programmes** that will answer the specific needs of each country and region, integrating the above elements at the right time and the right pace to ensure the ownership of the project by the NCPCs and NCPPs as well as within the respective countries and regions. The progressive development of the national ownership of the project will also ensure the appropriate adaptation of the chosen technologies to the local situation and the eventual sustainability of the NCPCs and NCPPs.

3. The interventions : transferring ESTs and facilitating market access

In order to reach their goal of supporting economy-wide, steady and sustainable productivity gains, UNIDO's interventions should focus on its two areas of competitive advantage : technology diffusion and capacity building for market access and development.

Applied to the domain of intervention of CP, these two areas translate in:

- the diffusion of quality and productivity enhancing Environmentally Sound Technologies (ESTs) and
- market access through the fulfilment of the requirements of the international markets thanks to UNIDO's holistic and sectoral CP approach and a combination of CP and related elements (CP and quality, EMS, health and safety, labour and other issues).

3.1. Environmentally Sound Technologies (ESTs)

As explained above, productivity is the key leverage point for enhancing sustainability efforts in developing countries and countries with economies in transition. After two centuries of dramatic rises in labour productivity, intensive use of natural resources at their extraction, rather than at their replacement cost, and over-reliance on the ability of the natural environment to absorb the wastes generated by economic development, labour has now become relatively abundant and natural capital relatively scarce

As the only strategy to reconcile productivity gains and environmental benefits¹, CP can play a key role in increasing the productivity of natural resources in its two dimensions:

- Current – the productivity of use of natural resources (rate of natural input per unit of output).
- Temporal – the impact of today's use of natural resources on their future productivity (the impact of the current technologies –including pollution generation– on the future availability and quality of natural resources²).

The NCPCs and NCPPs contribute to these efforts through the promotion of integrated solutions addressing causes of low productivity and environmental problems. Other techniques, which are not directly contributing to increased productivity, are being applied as part of an integrated solution only after exploration of the CP potential of preventive solutions.

Beyond good management practices

Optimising existing processes and building up capacities for dissemination of CP approach and methodology was the first focus of the Centres at their outset in the mid 1990s. Tools of CP assessment or environmental management systems were utilised in order to introduce good management practices and improve the existing technology. Other tools like environmental management accounting or tools for quality and/or health and safety management were integrated

¹ Only preventive measures integrated into the production process (reducing environmental risks through increased productivity and reduction of toxic materials) can merge two seemingly opposite challenges of increased competitiveness and improved environmental performance.

² The temporal dimension of productivity is referred in the text as “reduction of environmental impacts”.

into the NCPCs and NCPPs services in order to better address the enterprises' needs and to link CP to their core business concerns, including market access.

The introduction of good management practices is an important first step that can be implemented within difficult framework conditions. However, this approach has limitations given by the process and/or technology in use. It can lead to sub-optimisation if alternative technologies and/or processes are not explored.

EST transfers: more than the technical aspects

The best available solution (both from the productivity and environmental point of view) is very often out of the scope of the existing technology, but it is also in many cases different from the stylised “state of the art” or “best practice” technology.

Technology transfer traditionally focused on the technical aspects of technology, posing the risk of neglecting local needs and the role of domestic technological and innovative capabilities. Consequently, the traditional technology transfer does not initiate the desired cultural and managerial changes, which would lead to continuous improvement of productivity.

Therefore the two approaches (good management practices and technology transfer) should go hand in hand. This will also prevent technology transfers to be implemented without understanding the causes and framework conditions of the problem and actively seeking the best solution.

EST diffusion: integrating EST transfers in a broad perspective

In order to ensure that the knowledge is adequately adapted and effectively put into productive use at the sectoral and national levels, the EST diffusion process needs to integrate the technical, financial and policy dimensions that will ensure the long-term sustainability of the proposed solutions and their continuous improvement (see 4.3.).

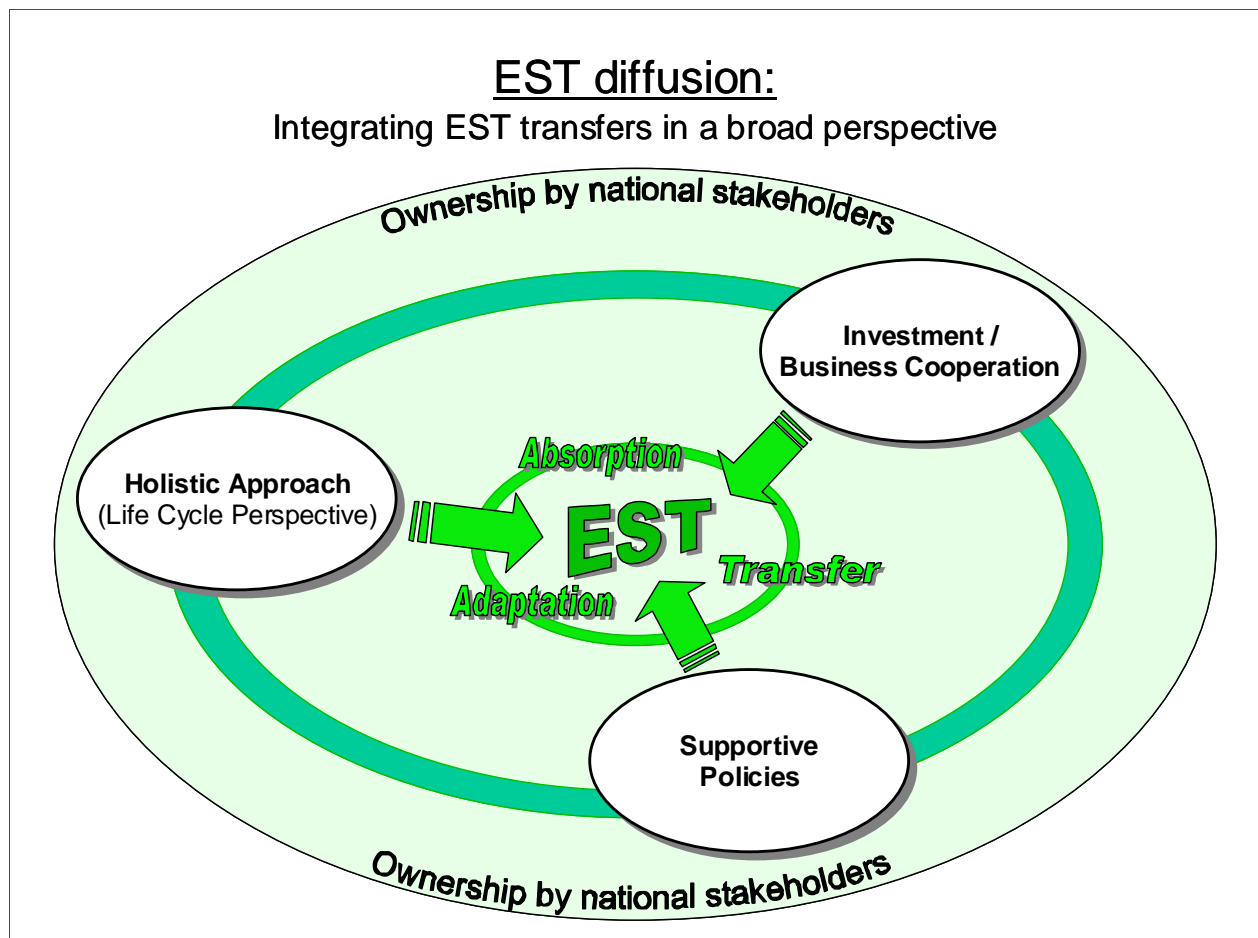
The following elements need to be taken into account:

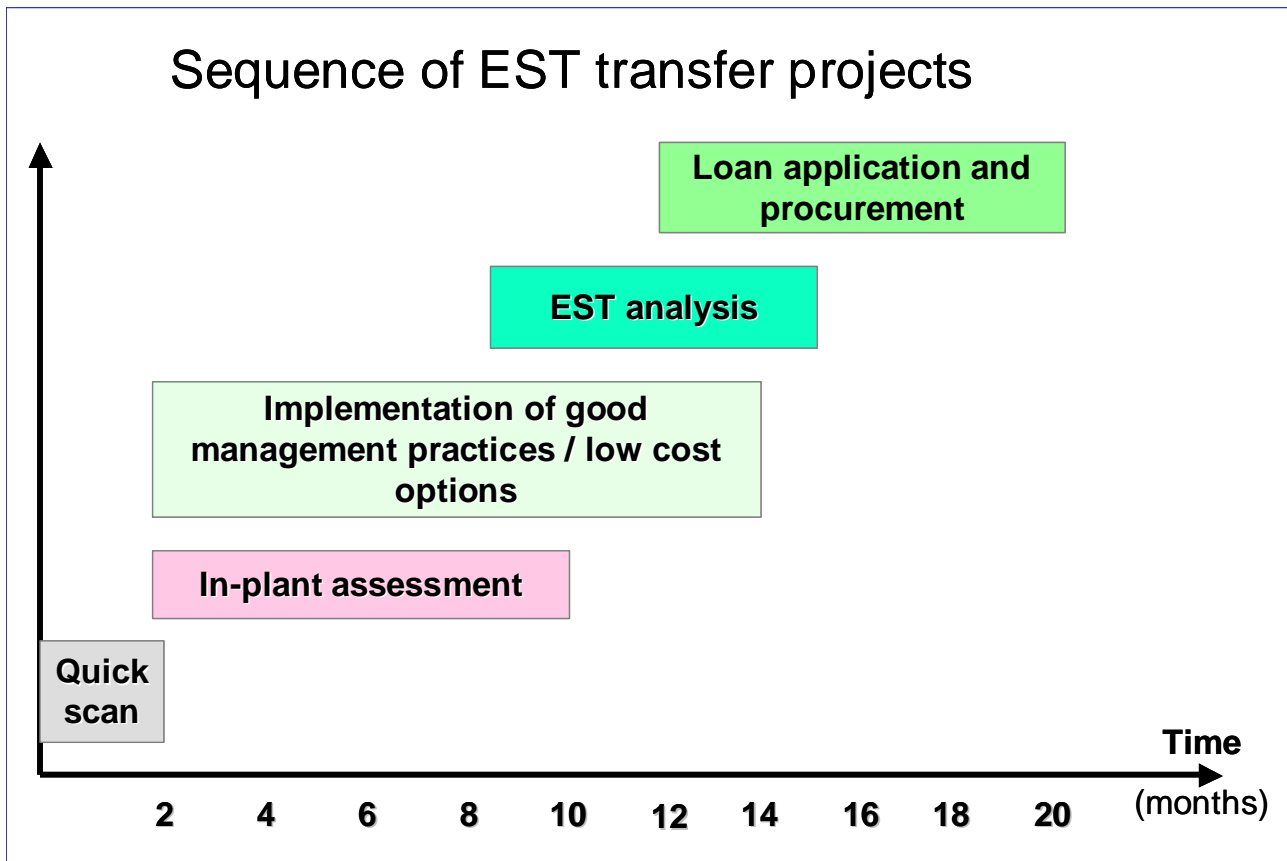
- **Life cycle perspective:** the extension of the traditional focus on the improvement of processes to the life cycle approach represents the most effective approach for further increase of productivity and effectiveness and efficiency of the use of natural capital (see 4.1.). The first step in this direction can be product design using tools as Life Cycle Assessment and Eco-design (development of products, which bring bigger value added and pollute less, thus also contributing to the increase of quality and productivity). The highest productivity gains can be achieved through adding the supply chain and life cycle perspective to the Centres activities. The applicability of these approaches is very much determined by the framework conditions and their support for the relevant business strategies.
- **International business cooperation and investment promotion:** the effective transfer of quality and productivity enhancing technology that is also environmentally sound requires the preparation of bankable investment projects, utilising either the existing financial mechanisms or supporting the establishment of specific credit lines for EST (see 4.2.1.a.).
- **Policy advice and technology dissemination:** one big advantage of technology is that it can be used repeatedly at zero marginal costs (in contrary to labour or capital -both man-

made and natural). The existence of incentives and supporting mechanisms is nevertheless of crucial importance for the diffusion of ESTs. For these mechanisms to reach their maximum effectiveness, country specific Cleaner Production Programmes should be developed through participative mechanisms (see 4.3.1.).

At all levels, the adequate adaptation of the technologies and the long-term sustainability of the proposed solutions will only be guaranteed if needs-driven capacity building allows the ownership of the projects by the national stakeholders (see 4.4.).

The integration of the EST transfers in a broad perspective, as well as the typical sequence for EST transfer projects are presented schematically in the following figures:





3.2. Market access

Changing patterns in the market-driven global economy require innovative and holistic concepts to enhance productivity growth in developing countries and countries with economies in transition in a way compatible with environmental concerns. To face this need and improve the access of the industry to local and international markets, UNIDO's CP Programme will be given a broader scope and a wider range of services and tools will be introduced.

Increased competitiveness and adapted products thanks to the holistic and sectoral CP approach:

The new holistic and sectoral CP approach, which is explained in more details in point 4.1., goes beyond the previous focus on process improvement to promote the sustainable application of CP throughout the entire product cycle, allowing the companies to design, produce and promote innovative environmentally and economically sound products and improving their ability to successfully negotiate their position in the global markets.

Answering the international markets' new requirements:

In addition to their request for competitive and adapted products and services, international markets pay more and more attention to other aspects of the companies' activities, most of which are related to Corporate Social Responsibility. These concerns range from quality assurance to environment protection, health and safety and labour related issues.

These concern can advantageously be addressed with CP. Indeed, the reduction of the environmental impact of the companies' activities lies at the heart of the CP concept. As a systematic planned procedure aiming at achieving continuous environmental improvement in plants operations, CP In-plant assessments can fruitfully be combined with the implementation or strengthening of quality assurance, environmental management systems (ISO 9000, ISO 14000 and alike) and environmental accounting systems. The systematic procedures insured by the quality or environmental systems will facilitate the CP analysis of the company and the implementation of the options generated, whereas the CP audits will give substance to systems that sometimes tend to become too formal.

In addition to this, combining CP to management systems will allow the companies to take full advantage of potential costs saving opportunities. Combining CP with health and safety issues and labour issues is the next step in helping the companies in their efforts to fulfil the new requirements of the international markets.

With its in-house competencies and external partnerships, UNIDO disposes of all necessary resources to help the NCPCs and NCPPs develop services combining CP with quality assurance, EMS, health and safety issues and labour related issues. The NCPCs and NCPPs will then be able to offer these services to their national industries, helping them to answer the requests of the international markets (see 4.2. Partnerships development and cooperation).



4. Increasing the impact : focused interventions within broad perspectives

UNIDO's interventions can only reach their full impact if they are at the same time focused and integrated in a broader perspective that will ensure that each specific intervention contributes to supporting the sustainable development of the recipient countries' industries in the most efficient way.

This mix of focused action and broad perspective can be reached by adopting the following principles:

4.1. Holistic and sectoral CP approach

The new holistic and sectoral CP approach of UNIDO promotes the sustainable application of CP throughout the entire product cycle, at company and sectoral level (see diagram next page).

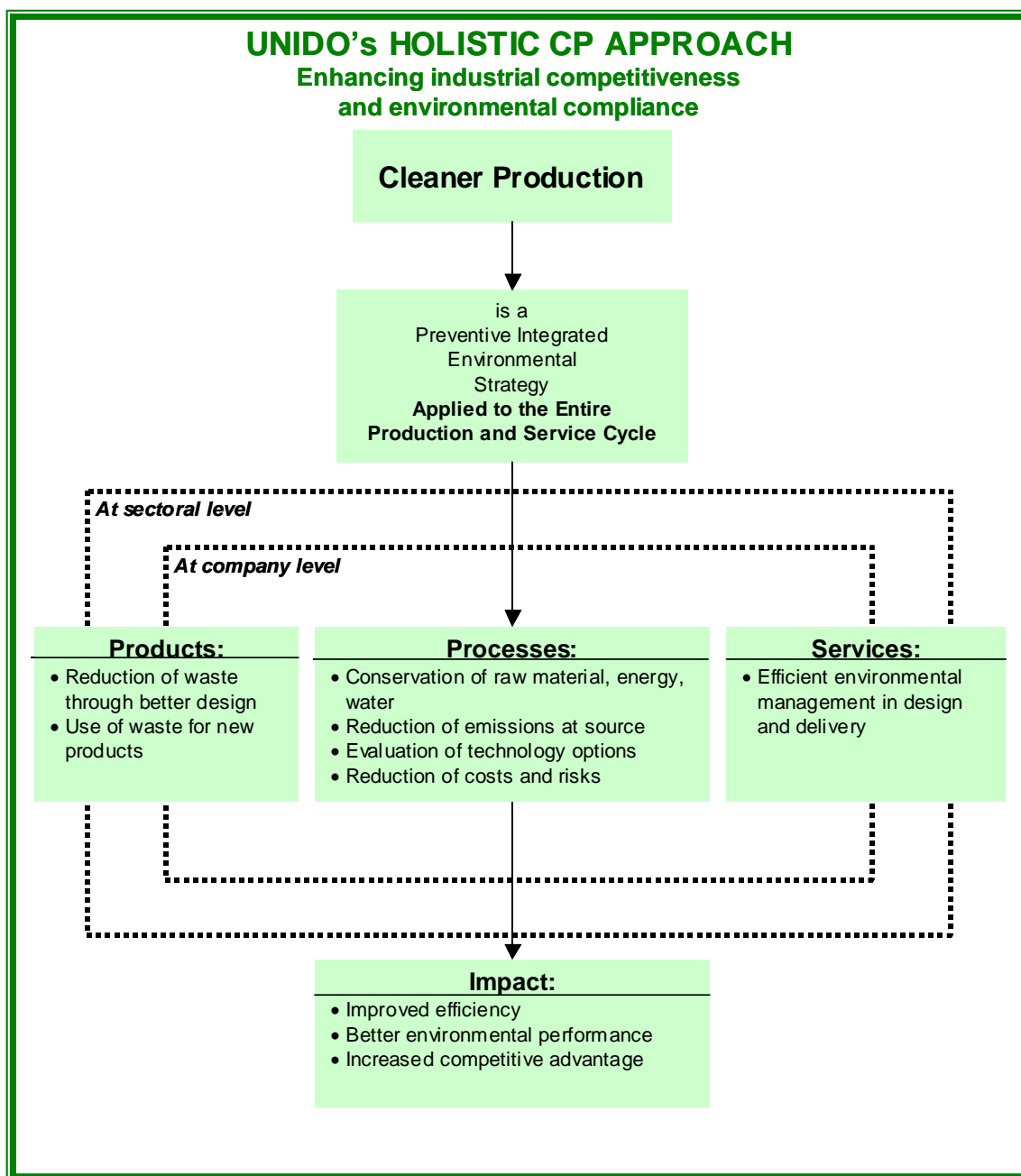
At company level, the activities should progressively go beyond process improvement to

- Take the whole product cycle into account, from raw material production until product recycling and/or disposal, using tools as Life Cycle Assessment (LCA);
- Involve all functions and departments of the company, from product development (using tools as Eco-design) to sales via marketing (using Eco-labelling), procurement, production and transport;
- Involve suppliers and customers in the reflection on new concepts for product design, marketing, procurement, etc. and new partnerships and relations between them;
- Promote integrated solutions: other techniques, which are not directly contributing to productivity increase (e.g. end-of-pipe technologies), should not be excluded, but applied as a complement to CP, after the CP potential has been fully exploited. Cleaner Waste Management programmes can be part of those integrated solutions.

This holistic approach will allow the companies to design, produce and promote innovative, environmentally and economically sound products of adequate quality, improving their ability to successfully negotiate their position in the global markets.

At the sectoral level, the CP Centres and Programmes should develop national sector specific CP strategies. This will allow them to put their interventions at company level in a broader perspective and to point out possible synergies between companies, suppliers and customers, making it possible to optimise the gains obtained at the sectoral and national levels. It will also allow for more coherent choices in technology development and transfer in the country as well as the preparation of coherent investment plans to be presented to potentially interested companies and financial institutions. As an example, Life Cycle Assessment and Eco-design may be used at the sectoral level to study the potential innovative utilizations, products and processes related to specific materials. In this perspective, the waste of one process or product can become raw material for another one.

UNIDO's CP team developed guidelines for the establishment of such national sector specific strategies.



4.2. Partnerships development and cooperation

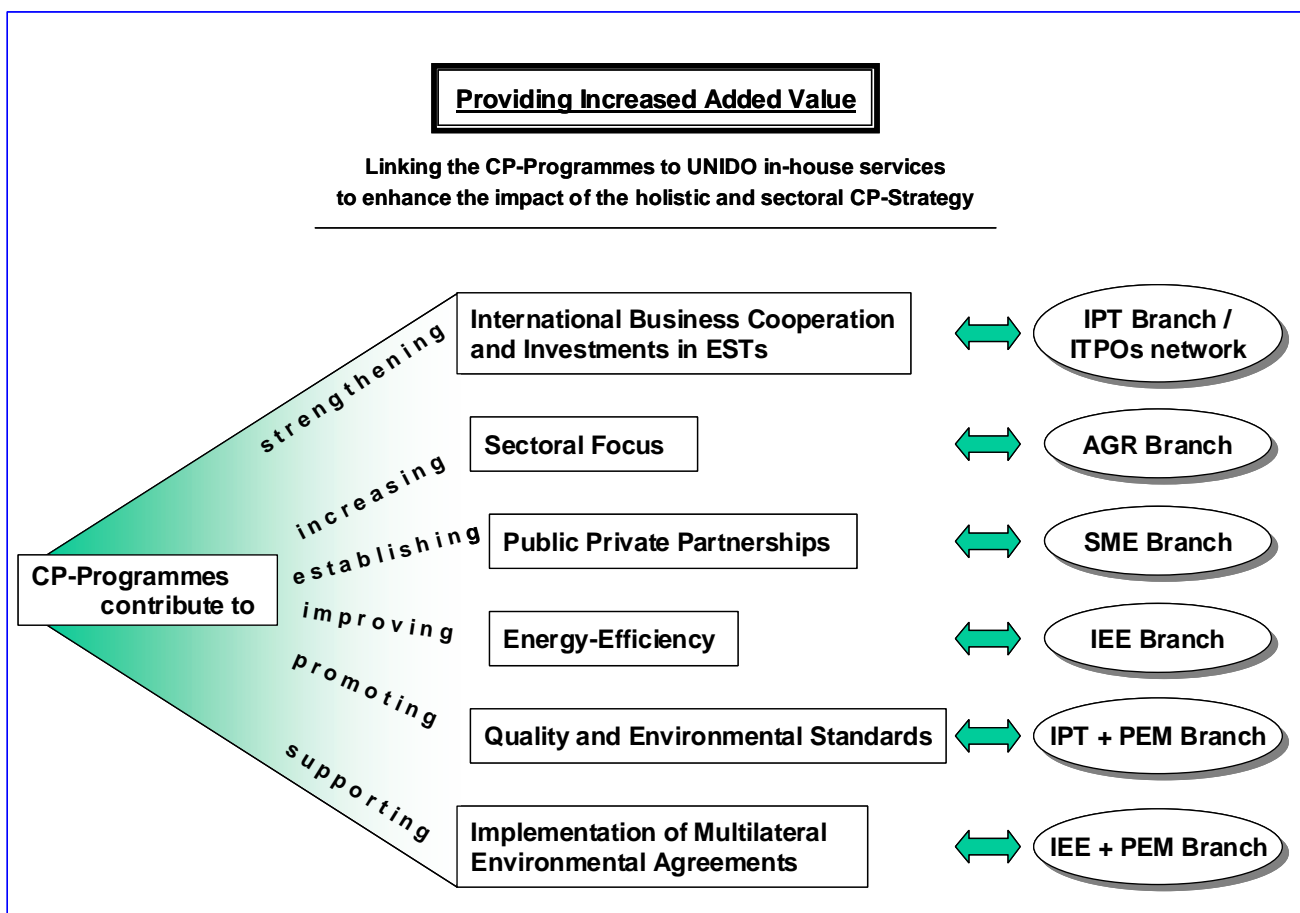
The holistic approach combined to the integration of the concrete interventions at company level within the framework of national sector specific CP strategies are the first principles that will guarantee the coherence of the individual interventions and the final impact of the NCPCs' and NCPPs' activities.

The effectiveness of the interventions also requires to bring in the adequate expertise. This can be guaranteed thanks to cooperation with other branches of UNIDO and with other international institutions. The development of public-private partnerships is another element that will allow the programme to take advantage of potential synergies.

4.2.1. Within UNIDO: providing increased added value

UNIDO has good in-house capacity with a high potential to strengthen the impact of the new holistic and sectoral CP strategy. Having undergone important restructuring processes during the last years, UNIDO has developed eight service modules and is presently undertaking 44 Integrated Programmes in 39 countries and Palestine, with 36 Integrated Programmes having a CP component.

Linking the CP Programme in the below stated manner to other UNIDO services will foster the holistic and sectoral CP strategy. Integrated solutions to the present and emerging needs of industry will be provided and the impact of UNIDO's technical cooperation programmes in enhancing the competitiveness and market access of developing countries and countries with economies in transition will be strengthened.



a) Promoting international business cooperation and investments in ESTs:

Strengthening cooperation between the CP Programme and UNIDO's investment services and instruments (ITPOs, COMFAR software, etc.) is a clear win-win situation for the benefit of developing countries and countries with economies in transition. The establishment of joint methodologies and strategies will improve the efficiency in promoting international business cooperation and investments in ESTs and encourage, in this manner, the development and transfer of ESTs in specific sectors. In addition, investment projects identified and submitted to national and regional banks by the national CP Programme will have an increased rate of obtained funding.

In this perspective, NCPCs, NCPPs and ITPOs are currently developing agreements to enhance CP and EST business and investment cooperation between investors in industrialized countries and enterprises in developing countries and countries with economies in transition. The agreements will include capacity building for local experts and exchanges of personnel between NCPCs and NCPPs and ITPOs in order to promote environmentally sound investment and business cooperation projects and to facilitate EST development and transfer in specific sectors through:

- Supporting local companies in gaining access to international markets;
- Establishing contacts with potential counterparts from the ITPOs country;
- Fostering the exchange of business information and the formulation of cooperation proposals.

b) Assistance in establishing Public-Private Partnerships:

Enhancing the productivity of SMEs and facilitating access of their products to international markets is crucial to healthy economic performance of developing countries and countries with economies in transition. UNIDO as a world scale organization and the National CP Programmes as local industry counterparts can play a key role in making a win-win link between local SMEs and trans-national and national subcontracting companies. Some joint projects between UNIDO's SME and CP units are already heading in this direction, like the Eco-Efficiency project in the Moroccan Dyeing Industry, a partnership between BASF, UNIDO and UNEP developed within the frame of the Global Compact.



c) Improving Energy Efficiency and fostering Cleaner Sources of Energy:

Improving energy efficiency is one of the basic elements of the Cleaner Production Programme. The increasing impact on Global Warming of emissions caused by unsustainable production and use of energy and the coming into force of the Kyoto Protocol call for enhancing CP activities in this field. Linking-up with UNIDO's energy efficiency services will facilitate the training of national CP staff in carrying out specific CP and energy audits. In addition, the national CP staff could be good allies in the identification and implementation of technical cooperation projects to be submitted for funding to Kyoto Protocol and GEF.

d) Supporting the Implementation of Multilateral Environmental Agreements:

The application of the proposed sectoral and holistic CP approach provides a sound basis for the identification of potential MEA projects and national CP staff can be reliable partners in the implementation of MEA projects. It is, thus, important to provide the staff of National CP Programmes and their governmental partners with high-level training, especially in the identification and implementation of CDM, GEF, POPs and Montreal Protocol projects.

4.2.2. With other organizations: fostering strategic alliances

Fostering strategic alliances with other International Organizations in promoting and implementing CP and SID related programmes and activities is an important element of the proposed sectoral and holistic CP Strategy. This will enable the development and implementation of innovative and integrated programmes and create efficient synergy effects among the different partners.

Some of the new alliances/partnerships that the CP Programme will develop and strengthen are:

- With technology development and transfer institutions, international and domestic, to facilitate the application of CP and the development and transfer of ESTs;
- With financial institutions and banks, domestic as well as regional and international development banks, to facilitate funding of CP implementation;
- With services specific institutions and industry associations to capture their sectoral expertise and facilitate dissemination across the entire sector;
- With educational and academic institutions to help integrate CP in the curricula;
- With industrial park authorities (including development authorities) to facilitate implementation of CP at industrial estate and cluster level;
- With MEA implementation authorities to help integrate CP in MEA implementation,
- With other environmental and economic development authorities/institutions to integrate CP with other approaches and tools, e.g.: EIA/EMS institutions/agencies, energy efficiency centres, health and safety departments, etc.;
- With professional associations to bring about an understanding and their involvement in the CP implementation process;
- With industry sector associations, particularly service industries, to increase the outreach to the sector;

- With trans-national companies willing to support the transfer of ESTs to SMEs in developing countries and countries with economies in transition, if possible within the frame of the Global Compact.

At present the CP Programme is involved in three important international partnerships:

[UNIDO-UNEP: Establishment of National Cleaner Production Centres](#)

This successful joint programme started in 1994, with UNIDO being the implementing agency and UNEP providing strategic advice.

[UNIDO-ILO-UNEP: Introducing labour-related services into the activities of National Cleaner Production Centres](#)

This joint programme has been launched in Johannesburg at the occasion of WSSD. The National CP Centre in Costa Rica will be the first one to work on developing and offering CP and labour related services to industry.

[BASF-UNIDO-UNEP: Eco-Efficiency for SMEs in the Moroccan Dyeing Industry \(partnership developed within the frame of the Global Compact, see point 4.2.1.b\)](#)

In the process of implementation of the proposed holistic and sectoral strategy additional important partnership agreements will be established.

[4.3. Stakeholders' involvement at the national, regional and global levels](#)

[4.3.1. At national level: fostering actual implementation of ESTs](#)

In addition to the integration of the company and sectoral levels (see 4.1.) and to the availability of the required international expertise (see 4.2.), the actual implementation of ESTs and consequent access to global markets will only be achieved with the participation of the main stakeholders in the country and in the region. This should include persons and institutions from the technical, financial and policy fields.

Indeed, actual implementation of ESTs depends on:

- the determination of the best technical options, taking into account the specific needs and available resources and infrastructure of the country;
- the existence and effective application of national policies that promote the implementation of these options, through regulatory measures, but also through incentives and adequate prices for raw materials, water, energy and waste management, and through information based strategies and voluntary programmes. This includes environmental, industrial (also at sectoral level), innovation, trade, financial and economic policies;
- the national financial institutions' awareness of the economic benefits of CP and the availability of mechanisms to finance the necessary investments.

To date, the main client and beneficiary of the CP Programme has been industry. Taking into consideration the increased recognition of the benefits of CP and the increased international sensitiveness to environmental concerns, the stakeholder base has to be broadened to truly integrate CP with the economic development process.



The NCPCs and NCPPs need to be enabled to attract and involve the following additional stakeholders in their work programme:

- **Financial institutions/banks** to facilitate the flow of funds for the implementation of CP and the diffusion of ESTs on a larger scale. Specific support in this field will be provided to the NCPCs and NCPPs by UNIDO's investment promotion branch (see 4.2.1.c);
- **Sector specific institutions and industry associations** to capture their sectoral expertise and facilitate dissemination across the entire sector;
- **R&D and technology development and transfer institutions** to facilitate the absorption, adaptation and transfer of quality and productivity enhancing ESTs that meet the needs of industry in the individual countries. The NCPCs and NCPPs will work as intermediary between technology developer (R&D and technology development and transfer institutions) and technology users (industry) to facilitate the process of converting practical problems into research issues and converting research solutions into practically applicable ones;
- **MEA implementation authorities** to assist the NCPCs and NCPPs in integrating CP in MEA implementation. As mentioned above, UNIDO experts can also assist the Centres in this field;
- **Government and policy makers** – although this is part of the existing work programme, it needs to be further intensified and extended horizontally and downward at local level. Instruments and strategies supporting the application of CP and EST need to be increasingly introduced into sectoral, financial, trade and economic policies;
- **Service Industries** – Tourism and leisure, hospitals and medical care centres, waste management industry, maintenance service centres like garages, retail outlets – as it is a most rapidly growing sector and is also a substantial consumer of resources. Working on CP in the service industries will have a salutary effect in changing the mind-set of the common customer as this sector has a much close relationship with the consumers;

- **Academia** – incorporation of CP as a cross cutting theme in all educational levels, from primary schools to universities and professional schools and in all disciplines not just the technical discipline.

Fostering participative policy development mechanisms: As an example of their catalytic function towards the actual implementation of CP, National and Regional CP-Programmes can play a key role in bringing together government, industry, academia and civil society organizations to ensure the development and application of innovative and dynamic policy instruments to promote the application of CP in sectoral, financial, trade and economic policies.

4.3.2. At the regional and global levels: enhancing CP networking and South-South Cooperation

Worldwide the number of National CP Programmes established by UNIDO and other bi-lateral and multilateral donors and organizations is growing. This calls for UNIDO, having long-standing experience in successfully implementing and promoting CP programmes, to play a leading role as a Global CP Forum for Cleaner Production.

Establishing, coordinating and facilitating international and regional CP networks in a strategic and coherent manner will have a significant multiplier effect on the global application of Cleaner Production. It will enable increased access of developing countries and countries with economies in transition to up-to-date information on CP and CP developments, instruments and policies, enhance South-South Cooperation through EST diffusion and personnel exchange programmes among the members, create new market opportunities due to the increased demand for CP services and foster the implementation of regional sectoral and holistic CP projects.



In this formal CP network, UNIDO will play an important role in bringing together the governments and the different national and international stakeholders to enable the development and application of innovative and dynamic policy instruments to promote the application of CP in sectoral, financial, trade and economic policies. Finally, UNIDO will support its partners in constantly improving the quality and range of their services in order to meet the emerging needs of industry in developing countries and countries with economies in transition.

4.4. Needs-driven capacity building

The level of existing CP know-how³ and the level of existing know-how on and implementation of Multilateral Environmental Agreements (MEAs) is different in each country. The role of UNIDO's CP unit is to design and implement National and Regional CP Centres and Programmes that better reflect the needs of the countries and regions selected. The "tailor-made" CP programmes will allow each NCPC or NCPP to develop its national strategy, build its own expertise and involve the relevant national stakeholders at the right moment and at the right pace in order to ensure its ownership of the project. This will guarantee the appropriate adaptation of the chosen technologies to the local situation and the eventual sustainability of the NCPCs and NCPPs.

The "tailor-made" CP programmes will be based on interrelated mixes of CP elements and will benefit from valuable synergy effects due to the close linkage of the CP elements with other UNIDO services (see above 4.2.1.)



Building on existing national capacities and bringing together different stakeholders will result in a dynamic and innovative learning process and foster private-public partnership. It will strengthen innovative and entrepreneurial capacity and generate policies and policy instruments that will support productivity increase and market access of industry in developing countries and countries with economies in transition.

³ Important parameters for defining the national level of CP know-how is the level of enforcement of environmental legislation and availability of CP investment policies and instruments.