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**Programme for the Establishment of the National  
Moroccan Cleaner Production Centre  
(US/MOR/99/132)**

**Report of the Independent Joint In-depth Evaluation Mission\***

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## List of acronyms

AFD	Agence française pour le Développement
CdA	Conseil d'Administration (Board)
CGEM	Confédération Générale des Entreprises Marocaines
CMPP	Centre Marocain de Production plus Propre
CNPP	Centre National de Production plus Propre
CP	Cleaner Production (Production plus propre, PPP)
CPC	Cleaner Production Centre
CSR	Centre Suisse de Référence: <ul style="list-style-type: none"><li>• EMPA (Swiss Federal Laboratories for Materials Testing and Research)</li><li>• Bob Partners - EMAC (Environmental management and Communication)</li><li>• URBAPLAN (Développement, urbanisme et environnement)</li></ul>
DIED	Industrial Development Ecologically Sustainable / Développement Industriel Ecologiquement Durable.
EC	Executive Committee
EC (CD)	Executive Committee (Comité Directeur)
FODEP	Fond pour la Dépollution / Funds for Industrial Depollution
GA (AG)	General Assembly (Assemblée Générale)
GTZ	German Agency for Technical Cooperation
HQs	Headquarters
IPA	In Plant Assessment (Audit)
n.a.	Not applicable
NCPC	National Cleaner Production Centre
Nda	No data available
NGO	Non Government Organization
NPV	Net Present Value of a measure taken (in \$)
OCP	Office Chérifien des Phosphates
ONE	Office National de l'Electricité
ONG	Organisation non Gouvernementale
ONU DI	Organisation pour le Développement Industriel (in English UNIDO)
PME	Petites et Moyennes Entreprises
PMI	Petites et Moyennes Industries
PNUE	Programme des Nations Unies pour l'Environnement
PPP	Production Plus Propre
QS	Quick Scan (Rapid Assessment) is a short visit to the plant and a preliminary analysis with ideas for improvements and related costs
seco	Swiss State Secretariat for Economic Affairs
SI	Success Indicator (indicateur de performance)
SME	Small and Medium Enterprises
SRC	Swiss Reference Centre: <ul style="list-style-type: none"><li>• EMPA (Swiss Federal Laboratories for Materials Testing and Research)</li><li>• Bob Partners - EMAC (Environmental management and Communication)</li><li>• URBAPLAN (Développement, urbanisme et environnement)</li></ul>
TdR	Termes de Référence
ToR	Terms of Reference
UNEP	United Nations Environmental Programme

## Summary of main conclusions and recommendations

### A. CONCLUSIONS

#### **A1. Project design and Management**

1. The embedment of the CMPP within the CGEM community is the most appropriate solution for CMPP. The resulting proximity to the Moroccan industry is a prerequisite for the success of the project.
2. The complex organisational structure of the project involves many key actors and decision makers (seco-UNIDO-CMPP-SRC-national consultants- enterprises). This complexity is a challenge for management, culture of communication and cooperation, delegation of tasks and monitoring.
3. The frequency of change in key personnel at UNIDO, SRC and seco, combined with the lack of a framework contract for the SRC for three years, have been the two main factors for the difficulties in developing a good partnership between CMPP and the SRC and ensuing problems such as the delays in the completion of in plant assessments.
4. The tasks foreseen for the CSR in the business plan are too broad in relation to the proposed resources. The Terms of Reference for individual tasks have been too vague.
5. The distribution of responsibilities between the Board and the Executive Committee is not conducive to an efficient and smooth guidance of the Centre. Furthermore it does not correspond to the statute. The Executive Committee has not formal responsibility for decision-making, even though it is closer to the operation of the CMPP.
6. The human resources of the Centre are insufficient in relation to the scope and volume of the tasks to be done, particularly in view of the regional extension of activities.
7. The staff members of the CMPP are competent professionals. However, more team cooperation would enhance the efficiency and effectiveness of the CMPP.
8. The technical director of the Centre has not formally been delegated from the Ministry of Industry to the CMPP and thus has not received any salary for two years.
9. The cooperation between the CMPP and its Ministry of supervision is very good. It has led to various subcontracts for the CMPP and has contributed to the generation of a high level of “own resources” of the CMPP.
10. International experts recruited by the SRC have generally met the expectations of the industrial clients and of the CMPP. In a few cases the clients judged the French language capability or the experience in the specific production process, to be insufficient.
11. The pressure on export oriented Moroccan enterprises from their clients in the EU, who require stronger environmental standards, is the most effective incentive for the Moroccan enterprises to apply the Cleaner Production concepts.

#### **A2. Relevance, objectives and outputs**

The project continues to be relevant for the industrial context of the country.

1. The CMPP is appreciated and has a well-established institutional position in the Moroccan industrial context.
2. The CMPP has contributed to its development objective even in the absence of a strong legislative framework.
3. Out of the two objectives specified in the project document, the first one (the establishment of the CMPP) has been realized, except for the quality of the cooperation with the SRC.
4. The second objective of the Centre calls for the execution of 39 activities, to produce 8 outputs, not everything has been fully realized. Serious delays in the completion of in plant assessments and, in some cases, the lack of timely follow-ups, have negatively influenced

the satisfaction of the clients and their readiness for the implementation of the measures and investments proposed.

- Assistance to the administration in the development of environmental legislation is behind what was foreseen in the project document.
  - The evaluation team could not ascertain the involvement of the Universities in capacity building and awareness rising.
5. Particularly successful outputs which merit mention here are:
- The “Thursdays of the CMPP”: an important innovation and a particular success.
  - The skilful development of cooperation with various technical cooperation agencies has generated for the Centre significant own resources, contributing toward the financial sustainability.

### **A3. Sustainability, achievement of purpose**

1. Overall the CP concept has been effectively promoted in the industry of the country, contributing toward the achievement of the purpose of the project.
2. According to the information of the CMPP, good progress has been made toward the financial sustainability of the Centre.

## **B. RECOMMENDATIONS**

### **B1. To the CMPP**

1. Improve the cooperation and communication with the SRC, as a flexible resource for supporting the work of the CMPP.
2. When requesting services from the SRC, provide clear ToR in due time.
3. The CMPP staff should operate as a team.
4. Urgently involve the Universities in the training activities.
5. Do no longer offer any free services to industry.
6. Open a second bank account for own resources, showing income and expenditures.
7. As the demand from the industrial sector for the CMPP services grows further, increase the number of the technical staff.
8. Systematize the follow-up of the IPA implementation, monitoring the impact at enterprise level.
9. Solve immediately the problem of the contractual status of the technical director of the Centre.
10. Include the hotel sector in the CMPP activities.
11. Improve the coordination of the work of the national and international experts doing the in plant assessments.
12. Ensure that the Internet site of the Centre, [www.cmpp.ma](http://www.cmpp.ma), works and is up to date.

### **B2. To the Board**

1. Ensure that all members honour their commitments towards the CMPP and that pay their fees.
2. Invite NGOs, the Universities and the financial institutions to nominate each a representative to the Executive Committee.
3. Redefine the distribution of responsibilities between the Board and the Executive Committee to better meet the needs for an efficient guidance and management of the CMPP.

### **B3. To the Swiss Reference Centre (SRC)**

1. Establish closer cooperation and communication with the CMPP and with the national experts.
2. React promptly and flexibly to the requests of the CMPP. Ensure that the qualifications of the international expertise correspond to the needs of the enterprise subject of the IPA, including the knowledge of the French language.
3. In the IPA work ensure that the national and international experts form a team, with clear distribution of responsibilities and that work plans and deadlines are respected.
4. In cases where the SRC does not have among its staff an expert with the qualifications sought, the SRC should immediately seek an expert outside. To do that, the SRC should have ready access, in Switzerland and abroad, to a comprehensive data bank of expertise in all industrial processes relevant to the IPAs to be conducted during the year.
5. International experts should possess a good knowledge of the managerial and cultural situation of the country.
6. Assure more continuity in the core personnel working with the CMPP.

### **B4. To UNIDO**

1. Assure more continuity of the staff managing the project.
2. Conclude a framework contract with the SRC for the phase 2.
3. Streamline and simplify the operational and decision making procedures and the channels of communication, in particular between UNIDO, CMPP and SRC. UNIDO should delegate more operational responsibility to the CMPP and the SRC.
4. The choice of the international experts to work with the Moroccan counterparts should be made by the SRC and the CMPP, in the framework of their cooperation agreement.
5. More focus should be placed on efficient administrative and financial management, monitoring and on the delegation of technical issues to the SRC and the CMPP.
6. Arrange for an independent financial audit of the CMPP.
7. The project language should be French.
8. Update, together with seco and the Moroccan Ministry of Industry, the project document according to the results of this evaluation.
9. Monitor closely the timely implementation of the accepted recommendations of this evaluation.

### **B5. To seco**

1. Continue the present policy of donor intervention only at the strategic level.
2. For the phase two, and in any future multilateral CP projects, assure that the project document defines an optimal framework facilitating the efficient implementation of the project and the use of all human and financial resources of the project. This includes the delegation of responsibilities and competences at the operational level and a framework contract with the SRC.
3. Continue the cooperation with UNIDO, because the most significant comparative advantage is its international status as UN Organization. This advantage is particularly crucial during the process of preparation of a project through the official contacts and the negotiations with the Government.



## **Sommaire des principales conclusions et recommandations**

### **A. CONCLUSIONS**

#### **A1. Cadre et gestion du projet**

1. L'inclusion du CMPP dans la communauté de la CGEM est la solution la plus appropriée pour le CMPP. La proximité à l'industrie marocaine est une condition préalable pour le succès du projet.
2. La structure complexe du projet implique beaucoup d'acteurs principaux et décideurs (seco, ONUDI, CMPP, CSR, experts nationaux et internationaux, entreprises). Cette complexité est un défi pour la gestion, la coopération, la délégation de tâches et l'intervention dans le projet.
3. Les changements du personnel chargé du projet à l'ONUDI, le CSR et seco, combinés avec le manque d'un contrat cadre avec le CSR, ont été les deux facteurs principaux des difficultés pour le développement d'un bon partenariat entre le CMPP et le CSR, qui a entraîné des problèmes tel que les retards dans l'achèvement des audits dans les entreprises.
4. Les tâches prévues pour le CSR dans les termes de référence (TdR), sont trop grandes par rapport aux ressources existantes. Les TdR prévus pour les tâches individuelles sont trop vagues.
5. La distribution de responsabilités entre le Conseil d'Administration et le Comité Directeur n'est pas favorable à une gestion efficace du Centre. De plus, cette distribution ne correspond pas au statut du Centre. Le Comité Directeur n'a aucune responsabilité formelle pour prendre des décisions.
6. Les ressources humaines du Centre sont insuffisantes par rapport au cadre et au volume des tâches à accomplir, en particulier considérant l'extension régionale des activités.
7. Le personnel du CMPP est compétent. Cependant, une meilleure coopération d'équipe pourrait améliorer l'efficacité du CMPP.
8. La directrice technique du Centre n'a pas été officiellement déléguée par le Ministère de l'Industrie au CMPP. Ainsi, elle n'a pas reçu son salaire pour les deux dernières années.
9. La coopération entre le CMPP et le Ministère de tutelle est très bonne. Cette coopération a mené à divers contrats de sous-traitance pour le CMPP et a contribué à la génération de nombreuses ressources propres au CMPP.
10. Les experts internationaux recrutés par le CSR ont généralement satisfait les exigences des clients industriels et du CMPP. Dans quelques cas les clients ont jugé la connaissance de la langue française ou l'expérience dans les processus de production spécifique, comme insuffisant.
11. On observe une pression des clients étrangers sur les entreprises marocaines orientées à l'exportation, pour obéir aux normes écologiques de l'UE. Ce sont les motivations les plus efficaces pour les entreprises pour les pousser à appliquer les concepts de la production plus propre.

#### **A2. Pertinence, objectifs et résultats**

Le projet continue à être pertinent dans le contexte industriel du pays.

1. Le CMPP est apprécié et il a une position institutionnelle bien établie dans l'industrie.
2. Le CMPP a contribué à son objectif de développement même en absence d'une forte structure législative.
3. Le premier des deux objectifs indiqués dans le document de projet, (l'établissement du CMPP) a été accompli, sauf pour la qualité de la coopération avec le CSR et les Universités.
4. Le deuxième objectif qui prévoit l'exécution de 39 activités pour produire 8 résultats, n'a pas été accompli entièrement. Les retards dans l'achèvement des audits, et, dans quelques cas, le

manque de suivis des audits a influencé négativement les clients et leur disposition à réaliser les mesures et les investissements proposés.

- L'assistance à l'administration nationale pour le développement de la législation pour la protection de l'environnement n'a pas été satisfaite par rapport à ce qui était prévu dans le document de projet.
- L'équipe d'évaluation n'a pas trouvé d'évidence relative à un engagement actif des Universités dans les programmes de formation et de sensibilisation.

5. Les produits suivants méritent d'être mentionnés:

- Le "les jeudis du CMPP", une innovation importante et un succès particulier.
- Le développement de la coopération avec diverses agences de coopération technique a généré des ressources, contribuant à la pérennité financière du Centre.

### **A.3 Pérennité et achèvement du but**

1. Le concept de production plus propre a été efficacement promu dans l'industrie du pays, contribuant à l'accomplissement du but du projet.
2. Selon les informations soumises par le CMPP, un bon progrès a été fait vers la pérennité financière du Centre.

## **B. RECOMMANDATIONS**

### **B1. Au CMPP**

1. Améliorer la coopération et la communication avec le CSR, en l'utilisant comme une ressource pour l'appui au CMPP.
2. En demandant les services du CSR, des termes de référence clairs et précis devraient être fournis à temps.
3. Le personnel du CMPP doit opérer comme une équipe
4. Impliquer efficacement les Universités dans les activités de formation
5. Les services du CMPP à l'industrie, notamment les audits, doivent être payants
6. Ouvrir un deuxième compte bancaire pour les ressources propres, indiquant les revenus et les dépenses.
7. Etant donné que la demande de l'industrie pour les services du CMPP augmente, il est recommandé d'accroître le nombre du personnel technique.
8. Suivre plus systématiquement la réalisation des mesures proposées dans les audits d'entreprise et suivre les impacts au niveau des entreprises.
9. Résoudre immédiatement le problème de l'état contractuel de la directrice technique
10. Inclure le secteur hôtelier dans les activités du CMPP
11. Améliorer la coordination du travail des experts nationaux et internationaux dans les audits.
12. Assurer que le site Internet du Centre, «www.cmpp.ma» est actif et mis à jour.

### **B2. Au Conseil d'Administration**

1. Assurer que tous les membres du Conseil honorent leurs responsabilités dans la promotion du CMPP et qu'ils payent leurs cotisations.
2. Inviter les ONGs, les Universités et les institutions financières à nommer un représentant au sein du Comité Directeur.
3. Redéfinir la distribution de responsabilités entre le Conseil d'Administration et le Comité Directeur pour mieux accorder les besoins avec une gestion efficace du CMPP.

### **B3. Au Centre Suisse de Référence (CSR)**

1. Améliorer la coopération avec le CMPP et les experts nationaux.

2. Réagir ponctuellement et avec flexibilité aux demandes du CMPP. Assurer que les qualifications de l'expertise internationale correspondent aux besoins de l'audit de l'entreprise, y compris la connaissance de la langue française.
3. Assurer que le travail d'audit de l'expert national et international se fait dans un esprit d'équipe, avec une répartition claire des responsabilités et que les plans de travail et les délais prévus soient respectés.
4. Au cas où le CSR n'aurait pas un expert avec les qualifications requises, le CSR doit chercher immédiatement un expert hors de son réseau. Pour cela, le CSR doit avoir accès à une banque de données d'expertise (en Suisse et à l'étranger), couvrant tous les processus industriels relatifs aux audits planifiés pendant l'année.
5. Les experts internationaux doivent avoir connaissance de la situation locale et culturelle du pays.
6. Assurer plus de continuité avec le personnel coordinateur qui travaille avec le CMPP.

#### **B4. A l'ONUUDI**

1. Assurer la continuité du personnel qui gère le projet.
2. Conclure un contrat cadre avec le CSR pour la phase 2.
3. Simplifier les procédures administratives de décision et de communication, en particulier entre ONUUDI, CMPP, CSR. Déléguer plus de responsabilités opérationnelles aux équipes du CMPP et du CSR.
4. Dans le cadre de leur accord de coopération, le choix de l'expert international qui travaillera avec l'expert marocain doit être dans les responsabilités du CSR et du CMPP.
5. Se concentrer sur la gestion administrative et financière, déléguant les questions techniques au CSR et au CMPP.
6. Procéder à un audit financier indépendant du CMPP.
7. La langue du projet doit être le français.
8. Mettre à jour, en collaboration avec seco et le Ministère de l'Industrie du Maroc, le document de projet selon les résultats de cette évaluation.
9. Contrôler le suivi des recommandations acceptées de cette évaluation.

#### **B5. A seco**

1. Continuer, comme donateur, la politique actuelle d'intervention seulement au niveau stratégique.
2. Pour la deuxième phase, et dans tous les projets multilatéraux futurs concernant la production plus propre, veiller que le document de projet assure une structure claire, facilitant l'utilisation et la valorisation de toutes les ressources humaines et financières du projet. Ceci inclut la délégation de responsabilités et de compétences au niveau opérationnel et un contrat -cadre avec le CSR.
3. Continuer la coopération avec l'ONUUDI, car elle offre l'avantage de faire partie du système des Nations Unies. Ceci est très important dans la phase de préparation du projet pour les contacts et les négociations avec le Gouvernement du pays récipiendaire.

## 1. INTRODUCTION

### 1.1 What is Cleaner Production

According to the internationally accepted terminology and the concept promoted by the Agencies of United Nations, “Cleaner Production” is the continuous application of an integrated preventive environmental strategy regarding raw material choices, processes, products and services to enhance the economic competitiveness of the enterprises and, at the same time, increase eco-efficiency and reduce the risks for the human beings and the environment.

In contrast to a narrow “end-of pipe strategy” at plants level, this strategy aims at the following objectives:

#### Regarding the choice of raw materials:

to reduce the potential toxicity of the processes and of the products through the whole life cycle of the products

#### Regarding the production process:

to reduce and save raw materials and energy, to eliminate toxic raw materials, to decrease the level of toxicity and the amount of the emissions and wastes at the end of the industrial processes.

#### Regarding the products:

to reduce the negative impacts along the entire life cycle of the product, from the design to the disposal.

#### Regarding the services:

to incorporate environmental concerns and awareness in the delivering of services. For instance reducing the quantity of water for washing a car, if with 1/3 of the water can be obtained the same result.

**To sum up, Cleaner Production requires changed attitudes, increased awareness, responsible environmental management and a deep analysis of the most suitable technological options.**

The experience obtained so far has shown that the application of cleaner production can significantly improve the environmental performance of the production processes. Moreover, many of these improvements can be obtained at enterprises level with minimal or little investments, or just taking some appropriate corrective measures in the production process.

### 1.2 Background of the CPC in Morocco

The establishment of the Moroccan Centre of Cleaner Production (CMPP) is based on the experience acquired by UNIDO all over the world in creating such centres.

The financial support of the Swiss Government has been very important and indispensable for this purpose. In the case of the Centre in Morocco the total budget allocated for this project over a period of five years is of US\$ 1.449.790 including the agency execution costs.

The Centre officially started its activities in January 2000.

Morocco is facing several problems, mainly regarding the field of management of the natural resources and the pollution of the environment. This is due to the industrialization and development of the urbanization during the last quarter of the previous century.

The main environmental problems facing Morocco are:

- The scarcity of water resources, which is affecting various regions of the country.
- The industrial pollution resulting from the discharge without treatment of the utilized water, the residue of the factories producing fertilizers and of the petrochemical industry.
- The increase of the solid waste due to the urbanization and the lack of efficient sewerage systems.
- The atmospheric pollution due to the traffic (vehicles circulation) and the industrial emissions.

The Centre originates from the cooperation between the public and Moroccan private sector and is part of the network of International Centres of Cleaner Production of UNIDO. The Centre is located in the CGEM and the Ministry of Industry has signed the project document.

The objective of the Centre is to promote the concept of cleaner production, helping in this way the reduction of any negative impact caused by the industrial production on the environment.

Another objective is that after this five years phase the Centre will be able to become self-sustainable.

The Project Document establishing the Centre has been signed on 12 November 1999.

The philosophy of the Centre is that an enterprise to be efficient, productive and competitive on the market, should utilize the resources in the optimal way limiting its negative impact on the environment.

The Moroccan Centre is supported in developing its activities by the assistance of a Swiss Reference Centre, which is providing technical advice through the services of specialized experts. The exchange of experiences and the transfer of appropriate technologies is another paramount point of relevance of this cooperation, having for final goal an improved productivity and economic efficiency, facilitated also by a network of cooperation between Moroccan and Swiss expertise.

### **1.3 The reason of the CPC**

Since the system of protection of the environment in Morocco had the need to be effectively faced, the Ministry of Industry already in 1995 started a project called “Industrial Development Ecologically Sustainable” (DIED), in cooperation with UNIDO. The objective was to develop methods and tools for the prevention of the pollution and the reduction of the waste at enterprise level, utilizing effective technology.

The plan of action of DIED, comprised around twenty projects of protection of the environment divided in four main sectors of intervention:

- Improvement of the legislation framework.
- Reinforcement of the technical aspect for the prevention.
- Provision of financial instruments to assist the industrial sector in complying with the environmental exigencies.
- Development of programmes of training, information and sensitisation for the industrial sector.

The continuous improvement of the industrial performances through the transfer of know-how is the goal of the methodology applied by the CMPP. The Centre’s policy is to train its clients in order to find the most convenient solutions for their problems. The aim is to generate a

continuous demand from the enterprises, for the assistance in the field of cleaner production and the other services connected to the environment.

The six basic activities of the CMPP are:

- Diffusion of information.
- Sensitisation.
- Training.
- Technical in plant assessments.
- Promotion and financial advise for investments in technologies for cleaner production.
- Advisory activity at country policy level.

All these activities are connected among them and are supporting each other.

To improve the possibilities of verifying the impact of the activities of cleaner production in the different industrial sectors, the action of the Centre should:

- Determine the priority sectors of the economic activities, which require more action regarding cleaner production in the country.
- Quantify the volumes of the impact of these sectors on the general environment of the country.
- Identify the operating enterprises, with their level of production.
- Indicate the approximate amount of the caused environmental impacts of these enterprises.

#### **1.4 Structure of the Project**

The idea of establishing a Cleaner Production Centre in Morocco answers to the needs demonstrated by the programme DIED, in order to assure the continuation of the efforts started in the field of cleaner production in the country.

The purpose of the Centre, being part of the UNIDO/UNEP network, is to assure this continuation, building capacities at national level and providing the link within the network with the other Cleaner Production Centres and International Reference Centres in the world.

The totality of the concept of the project is foreseen a little bit over five years and it is generously financed by the Swiss Authorities.

The implementation has been forecasted in three phases: a preparatory one and two operational phases.

During the preparatory assistance phase of nearly one year in 1999 (under a separate project document), the project document ruling the activity of the Centre was prepared in accordance to the existing national institutional framework and collecting all the additional information to insure the active involvement of the local stakeholders.

The preparatory phase selected the main target groups for cleaner production services (chemical, leather, textile and agro-food), in order to assure in the future the economical sustainability of the Centre, and proposed the structure of the Centre, the legal status and the necessary resources.

The analysis took also into account the possible performance indicators to be used and the potential project risks.

The present evaluation mission has been foreseen at the end of this first operational phase of three years, in order to analyse the progresses realized and make the necessary adjustments, if

any, for the second operational phase. It is foreseen that at the end of the second phase the Centre should be financially fully autonomous.

The involvement of several national and international parties in the execution of the programme of the Centre is of paramount importance for its establishment as national meeting point for the activities of cleaner production.

The CMPP is a non-profit association. To be member of this association the participating parties have to adhere to its statute and pay their annual membership fees.

The work of the Centre is under the supervision of a General Assembly composed of the members of the association.

The CMPP is directed by a Board composed of 23 participants (all Moroccan, as per the requirements of the national legislation), as per the annex II of the Project Document, dated November 1999. The tasks of the Board are to prepare the decisions to be submitted to the General Assembly, to assure their execution and to promote de activities of the CMPP.

In accordance with the project document, in order to assure the coordination of all the counterparts, national and international, and their active presence in the management of the project, an Executive Committee has been established.

This Executive Committee is composed of the President of the Board, a representative of the Ministry of Industry, of the Swiss Government and of UNIDO.

The CMPP is hosted in the premises of the CGEM (Confédération Générale des Entreprises Marocaines), which give in this way its contribution in kind to the project.

The CMPP is managed by a director, selected by the Board and paid by UNIDO. The director has for task to update the business plan of the Centre and to manage the coordination of the activities. He is responsible to the Board for the technical and financial management of the Centre. The director is assisted by a Secretariat.

The Project Document foresees that UNIDO is responsible to the Donor for the contributions received for the implementation of the project and, together with the director, for the technical management and the financial resources of the Centre.

Finally, for the technical implementation of the activities, the Project Document foresees the selection of a Swiss Reference Centre, which has for tasks to support the initial demonstration programmes, to help in constituting the technical competences of the CMPP and in advising on all the other technical matters related to the establishment of the Centre, like in plant assessments, training, transfer of technology, promotion of investments in the field of cleaner production and legislative policies. The Project Document foresees that the selected Swiss Institution will work under a subcontract arrangement with UNIDO for the execution of these activities.

## **1.5 Development objective**

The main objective of the Centre is to train the entrepreneurs on how to find the best solutions for their industrial and production problems. Through specialized and technically sound in-plant assessments the consultants assist the enterprises with appropriate know how and in finding improved solutions for technical processes in the production.

Acting as the focal point for Cleaner Production in Morocco, the Centre participates in the global network established by UNIDO, having as partners in other countries, productivity councils, chambers of industry, universities, etc... This extensive network, with its wealth of information and expertise, allows the CMPP to provide better services to the enterprises.

The methodology of the Centre is to offer an integrated service package for cleaner production, which is including: sensitization, training, technical information, demonstration in-plant assessments, appropriate technology, advise on new technologies and subsequent investment opportunities, information on legislation policies.

The results expected for the first operational phase are described in chapter 3.

### **1.6 Purpose of the evaluation**

The tasks of the joint in-depth evaluation mission are described in the terms of reference of the mission (Annex I).

The primary purpose is:

- To assess the achievements of the Centre during this first operational phase, against the objectives and the expected results.
- To identify the factors which have facilitated the achievements of the projects objectives, as well as the factors that have hindered the fulfilment of the objectives.
- To determine which lessons are to be learned from the existing experience, in order to improve the project activities in the further phase, with particular regard to the ability of the Centre to become self-sustainable.

### **1.7 Composition and timetable of the Evaluation Mission**

The persons nominated to conduct the evaluation have not been involved in the design, appraisal or implementation of the programme. The observations and findings of the evaluation team are the result of this in-depth evaluation carried out in their own capacity. The views and opinions of the team do not necessarily reflect the views of the Government of Switzerland, of the Government of Morocco or of UNIDO.

The mission was composed of the following members:

- Mr. Samuel P. Mauch, independent consultant of Mauch Consulting, Oberlunkhofen, Switzerland. Representative of the Donor and nominated by the State Secretariat for Economic Affairs (seco) of Switzerland.
- Mr. My Tayeb Alaoui Aziz, Director General of A.I.A.R.E., (Agence Ingénierie, Assistance, Réalisations et Etudes), nominated by the Moroccan Authorities. Representative of Morocco.
- Mr. Mario Marchich, Senior Evaluation Officer, UNIDO Evaluation Services Branch, Administration Division. Representative of UNIDO.

The mission assembled in Casablanca on 1 February 2003 to start its fieldwork, which was concluded on 10 February. The agenda of the mission is contained in Annex II.

However, the three team members have started, each in his own country, to interview during the month of January 2003, the persons involved in the project, to discuss and develop an insight into the relevant points of the implementation related to the activities of the CMPP.

The preliminary findings and conclusions have been presented in French language and in draft by the evaluation team at the end of the field work in Casablanca to the members of the Executive Committee, the staff of the Centre and the project manager of UNIDO. A copy (in French) of these draft preliminary conclusions and recommendations has also been mailed to seco in Berne immediately after the mission (see Annex VII).



A further presentation has been made to seco in Berne on 13 March 2003.

All the presentations have been followed by interesting and fruitful discussions. The results of these discussions have been considered in this report.

The list of the persons met and interviewed is contained in the Annex III.

## **1.8 Evaluation methodology**

The report is based on:

- The Project Document dated November 1999, establishing the Centre.
- All other documentation provided by the project parties to the evaluation team in Vienna, in Switzerland and in Morocco.
- In-depth discussions with the project manager, with the Director and the staff of the Centre in Morocco, the technical consultants (national and international), the members of the Executive Committee and members of the professional federations.
- Meetings with state counterparts and high-ranking officials of several Ministries.
- Visits to several industrial plants and meetings with their managers, to discuss the problems related to the cleaner production, its application in their factories and their experience with the cooperation with the CMPP.
- Analysis of the questionnaires prepared by the evaluation team and answered by the enterprises, which were assisted by the CMPP (see Annexes V and VI).

To prepare the report the evaluation team has followed the UNIDO's instructions for preparing the independent in-depth evaluation reports. The team has attempted in this report to give a comprehensive image of the activities of the Centre, discussing the issues in a way, which should be helpful to the responsible authorities and the staff of the project to further improve their present and future performance. The issues have been openly discussed and both parties, the evaluation team and the project authorities, have agreed on most of the conclusions.

Before the beginning of the evaluation work, the evaluation team requested the director of the Centre to send all the contacted enterprises a questionnaire, in order to have a feedback on the client's satisfaction regarding the work of the CMPP.

The data derived from the management information system of the project, the questionnaire results, the interviews and the evaluators' own observations, supported by the valuable contribution given by the local resource persons, have enabled the evaluation team to get valuable insights into the achievements of the project.

## **2. SOCIO-ECONOMIC CONTEXT**

### **2.1 General background**

According to the fourth constitution, adopted in 1996, Morocco is a democratic monarchy, with Islam as state religion and Arabic as the official language. The King is the commander of the state and he is empowered to declare the state of emergency if the country is threatened. The King appoints the prime minister and a number of key ministers. The constitution provides for a six-year parliamentary term, although in practice, the gap between elections has varied between four and nine years. Elections were held in 1977, 1984, 1993, 1997 and 2002.

The single chamber system, whose representatives were for two-thirds directly elected and for one-third indirectly elected, was replaced in 1996 by a bicameral parliament, with a lower house directly elected by universal suffrage and an upper house chosen by electoral college.

A projection based on the 1993 census forecasts a population of around 30 million persons at the end of 2002. Morocco's rate of population growth has fallen sharply from around 2,5% in the 1980s to approximately 1,6% in 2001. The demographic profile shows a youthful population, although the proportion aged 14 or under is slowly declining (from 43% in 1995 to 32% in 2000) and the number of aged 64 or over is rising from 3 to 5%.<sup>1</sup>

### **2.2 The industrial sector**

Industry in Morocco represents 15% of the GDP and contributes significantly to the total export. The industrial sector is very diversified. The predominant sector is represented by the agro industry, which represents 35% of the industrial production, followed by the chemical industry with 32%, the textile and leather with 16% and with lower percentages by the mechanical and metallurgical industries as well as the electrical and electronic ones.

The industry has initially developed from the natural resources of the country, namely agriculture and mining sector, particularly the phosphates industry. The growth during the last years has been inconstant. This was due to the dependency of the Moroccan industry on the agriculture. The result is, however, positive. The growth of the GDP has been between 2 and 10% in the period 1994-2000. For this reason the industry is expected to become the main factor of the economic growth of Morocco.

The following table shows the economic growth by sectors of activities:

Sector	Growth 1994-97	Forecasts 1999-2003
Agroindustry	7%	4% per annum
Textile and leather	5%	11% per annum
Chemical	8%	10% per annum
Mechanical and metallurgical	3%	19% per annum
Electrical and electronical	9%	57% per annum
Average of the increase of the Moroccan Industry	6%	11% per annum

This growth in the industrial sectors has partially balanced the decrease of the agricultural GDP. The mining sector during the first quarter of 2001 had an increase of 64% if compared to the first quarter of the year 2000. This positive development is due to the increase in the production

<sup>1</sup> Source: The Economist Intelligence Unit.

of the non-metallic minerals, while the index of the metallic minerals has decreased during the same period by 8,1%.

The sector of the energy production has shown a total decrease of 5,8% during the first quarter of 2001, due to the decrease in the production of the petrol refineries (- 21,2%), however, in a certain way, balanced by the increase in the production of the electrical energy (+ 13%).

In the manufacturing industry the index of the industrial production shows during the first quarter of 2001 a growth of 2,3%, which is due to the improvement of the metallurgical, mechanical, electrical and electronical industries, as well as the industries related to wood, pulp and paper and chemical industries. In spite of the good results of the leather industries, the textile sector has shown during the same period a reduction of 2,4%.

The forecasts regarding the evolution of the economy on the long term are always risky, depending on external factors, like the international economic trend. Generally, the Moroccan economy presents a stable growth, influenced only by the climatic risks. Another factor of uncertainty for the Moroccan industry is its dependency on the export of some products as source of income for foreign currencies. However, with the diversification of its industry and the development of the tourism this dependency should diminish. Moreover, the political stability, the human resources potential, the competitive salary level and the proximity to the European market give to Morocco an undisputable economically attractive position.

### **2.3 Morocco and the European Union**

The proximity of Morocco, geographically and economically, to Europe and its ideal position as a bridge between Europe and the Arab States has strongly influenced the foreign policy of Morocco. The Association Agreement signed with the EU in February 1996 is strengthening the Moroccan relations with Europe. The agreement will allow free trade for the industrial goods and will gradually abolish the customs duties over a period of twelve years, starting from the 1 March 2000. Morocco is receiving from the EU financial aid and grants, for modernizing its companies and to continue the access of Morocco's traditional agricultural production on the European markets. The idea behind this support is that the development of the Moroccan economy is the best way to reduce the illegal emigration to Europe. France and Spain are the two most important European trading partners of Morocco. The agreement with the EU foresees a free trade zone between Morocco and the European Union by 2010.

### **2.4 Natural resources**

In Morocco there are two mountain chains: the Rif in the north and the Atlas in the centre. From the south to the east of the Atlas, bordering the Sahara desert, the land is mostly arid. There are rich fishing grounds off the Atlantic coast. Agriculture and hydroelectricity depend on the annual rainy season, which lasts from November to March. The cycle of good rainfall/poor rainfall appears to have shortened in the 90ies, with a dry season now occurring every other year, compared with once every five years during the 80ies. The worst drought in recent years was in 1995.

Recently, in a sectoral analysis, the World Bank has recommended that a comprehensive environmental policy be drawn up, linking water use, pollution and agricultural development. The volume of wastewater produced in urban areas is expected to double by 2020. More and more the management of water, wastewater and power systems are being contracted out to foreign companies.

## **2.5 Environment**

Pollution, particularly from the phosphate industry, is a growing problem and the government is preparing a regulatory framework with the intent to reduce the environmental damage. Morocco's beaches and waterways are the hardest hit. A survey in 2000 found that 21% of the beaches are polluted, while 50% are judged to be only of medium quality. The effluent from large coastal chemical complexes and of the seafood industry is largely to blame for this.

The demand for water is expanding and consequently the price of the water is increasing. The government plans to largely invest in the next decade to provide safe supply of drinking water in all the country, upgrading at the same time the irrigation system to rationalise the use of the water. The World Bank in a report on the water resources of Morocco has warned that the country could face a drop of 30% in the water availability per hectare of cultivated land, unless an improved water management system is followed. Morocco is facing several problems regarding the management of the natural resources and the pollution of the environment, mainly due to the industrialisation and the fast urbanization developed during the last twenty years.

These problems can be sum up as following:

- The scarcity of water resources in several regions of the country.
- The urban pollution due to the partial linking of industrial and domestic wastes to an efficient discharge and treatment system.
- The disposal, without treatment, of the used water in the public sewerage.
- A considerable disposal of solid municipal waste.
- The atmospheric pollution mainly due to the urban transportation and the industrial emissions.
- The degradation of the soil and the desertification. In fact, 60% of the Moroccan soil is threatened with the problem of the desertification.

It is estimated that the costs paid for the degrading of the natural resources and of the environment amount to around 8% of the GDP of Morocco, with a very negative influence on the development of the country.

### **Liquid waste:**

It is estimated that yearly around 960 million cubic metres of liquid waste has been produced by the industries of the country. Chemical and phosphate industries are the main source. The Atlantic Ocean is quantitatively the most concerned receiving nearly the 99% of the liquid waste. However, the most important negative impact is affecting the following rivers:

1. The Sebou, which is transporting the waste of several sugar-refineries, oil-mills, tanneries and metal finishing factories, which particularly dispose without any treatment, residual water waste containing cyanide.
2. The Tensift and the Oum Er Bia, which receive less dangerous substances, but for them the quality of the water is very important, because their water is used to irrigate the regions they are crossing.

### **Solid waste:**

It is estimated that the Moroccan industries produce yearly around 800 tons of solid waste. The major part, 72%, is represented by the waste produced by the industry for the extraction of minerals and ores. This waste is deposited in the proximity of the industrial units where it has been produced. Another part of the industrial waste (23%) is reutilized in other industrial

processes and the rest, 5% (around 40.000 tons) is evacuated, together with the domestic waste, in the public discharges, which generally are near urban zones.

#### Atmospheric waste:

A big part of this waste is represented by the combustion of fuel. Around 165.000 tons of SO<sub>2</sub> are due to the production of sulphuric acid, 200.000 tons are of fluorine compounds coming from the production of phosphoric acid and 10.000 tons of dust due to the emissions of the cement factories.

To answer to all these environmental problems, the Moroccan authorities are elaborating a new policy framework. The majority of the laws are old and do not respond anymore to the social, economic, political and international needs of Morocco. Presently the weak enforcement of laws and regulations is the main problem of this outdated legislation. Among the tasks of the CMPP, it is also foreseen that the Centre should play a strong advisory role in the drafting of the new policy framework.

### **2.6 Energy resources**

The natural energy resources are limited to small quantities of hydroelectric power, eolic and solar energy and decreasing reserves of coal in the Jerada mine. The majority of the electricity is produced from imported coal and oil.

Power shortages and constraints regarding public finance have induced the government in 1995 to accept the principle of private foreign financing for the production of power. However, the distribution and the transmission of the electricity have remained the task of the state owned Office National de l'Electricite (ONE). Several new power stations built and managed by foreign private companies are operating in Morocco, but all the electricity produced is sold only to ONE. It is expected that if in few years the production of electricity will exceed the national demand, ONE will be able to export power to Spain. A rural electrification programme is being implemented and it is expected that by 2008, 80% of the Moroccan villages will have electricity.

### **2.7 Economy**

The main objective of the Moroccan economic policy has been to reduce unemployment and raise the living standards. To achieve this goal Morocco has tried to make the economy more attractive for domestic and overseas investors. Particularly, it has been elaborated a favourable legislative framework related to investment, oil exploration and production and, finally, mining. The presence of the public sector has been reduced through the privatization and the policy of concessions for telecommunications, stations power generation and water management.

In 2001 the World Bank urged Morocco to speed up a structural reform, expressing concern for the economic stagnation, rising poverty, high unemployment and the deteriorating fiscal policy. The policy to use privatization revenues to offset the budget deficit, instead of investing in productive sectors, it was criticised.

Several economic reforms have been introduced during the last ten years. Among them:

- The convertibility of the Dirham for current account transactions.
- The restructuring of the financial sector.
- The reform of the investment code.
- The association agreement with the EU (entered into force on 1 March 2000) .

- Liberalisation of the interest rates.
- The launch of the industrial upgrading (“mise à niveau”) programme.
- The sale of one third of the stakes of Telecom Maroc.
- Depreciation (5%) of the Dirham.

Protected during years through high import tariffs, many Moroccan firms are no longer competitive and are facing difficulties as soon as the tariff barriers are reduced in line with the Association agreement with the European Union. According to the forecasts one third of the industries will be able to compete with the European firms, one third will be able to compete, although slowly, thanks to the upgrading obtained through the “mise à niveau” programme and one third of the enterprises will have to close. It has to be noted that several Moroccan enterprises are reluctant to join this upgrading programme, because they do not want to open their books, especially if the State is supporting the programme.

The economic activity of Morocco is concentrated in the area of Casablanca and Rabat. However, the government has started promoting investment incentives to develop the growth of business in other regions of the country. Urbanisation has constantly increased and 55% of the population is now living in urban areas. It was 35% in 1971 and 51% in 1994.

The mining sector consists mainly of phosphates, which are exploited in largest part by the Office Cherifien des Phosphates (OCP). It is state owned and it is the largest industrial concern of the country. Morocco holds around three quarters of the world’s reserves of phosphates and it is the third largest world’s producer of phosphates.

Generally, in Morocco many companies suffer of low productivity, relatively high labour costs, poor management and low investment for technological upgrading. The food processing industry is exporting to Europe, particularly the fish sector. It should be noted that more than 50% of the total production of canned sardines goes to Europe, supplying one quarter of the entire EU market. The textile sector has been for years the leading industrial export sector, but recently has faced difficulties due to the competition of the south-east Asian companies, which are more efficient and whose costs are lower. This sector is a typical transformation industry, importing semi-finished inputs and with the Moroccan industries making only the assembly of clothing. However, the production of clothing has reduced and hundred of enterprises have closed down with a loss of thousand of jobs. Entrepreneurs fear that with the end of the authorized quotas to the EU, following the expiration of the multifibre agreement foreseen for 2005, several other factories will be closed down. As we have already mentioned, the chemical industry is mainly based on the processing of phosphate rocks into phosphoric acid and fertilisers. This sector is completely State owned through the OCP. The tourism is the main source of foreign currency. A part of the Moroccans resident abroad (who are over one million) and are returning for holidays, France, Germany, Spain, Italy and United States are the most important markets for the foreign tourists. Unfortunately this sector is subject to political crisis, which are affecting the bookings, like for instance after the 11 September 2001.

## **2.8 National legislation on the environment**

The industrialized zones, like the urban zones, which are around them, are the most affected by the atmospheric pollution. The emissions of SO<sub>2</sub> coming from the industrial units producing sulphuric acid have a very bad and dangerous impact, due to their proximity, on the town of Safi, el Jadida and Casablanca. To answer to this increasing environmental degradation, the Moroccan authorities have elaborated in the past some specific legislation regarding the

environment. However, in spite of the numerous existing laws and regulations, there were several gaps, which made the legislation unsuitable for an effective protection of the Moroccan environment. The majority of the texts were outdated and surpassed and did not correspond to the actual economic and social situation in Morocco, as well as to the actual environmental approach. These gaps and the antiquity of the laws, explain the poor enforcement of the rules on the protection of the environment. In order to find a remedy for this worsening situation, the state secretariat responsible for the environment has elaborated in recent years some new texts, which are a basic support for the national strategy regarding the protection of the environment and the sustainable development. These new legislative texts, some of them still in the draft format, concern:

- The protection of the water. This law, nr.10-95, aims at establishing a national policy on the water considering the evolution of the resources and the national needs. It is aimed at the generalization of the access to the water, the reduction of the disparities between town and country side, in order to assure the hydraulic system and safety on all the territory of Morocco. The purpose of this law is to regulate and manage the water resources of the hydraulic basins.
- The management of the waste and its disposal. An ad hoc project of law is under preparation for the application to all the waste: domestic, industrial, medical and hazardous. The objective is to protect the health and the environment, through the organization of the transport, the disposal and the public information.
- The protection of the atmosphere. Also in this case a project of law is under preparation to prevent the pollution generated from mobile and fixed sources.
- The impact on the environment. A study has been realized to allow to the public administrators concerned and the population to assess periodically the repercussions on the environment of the establishment of new industrial conglomerates.
- The project of a framework law for the protection of the environment, in order to introduce the instruments of prevention as well as the juridical means to enforce the protection. This project takes into account the recommendations of the international conferences concerning the sustainable development.

## **2.9 The concept of the Cleaner Production and the institutional role of the Centre (CMPP)**

The purpose of the Centre is to build in Morocco the national capacities to promote and assure in the national industry the understanding of the concept of Cleaner Production. The aim is to divulgate the respect for the environment, improving at the same time the competitiveness and the efficiency of the enterprises. The government is aware that the answer of the industry to respect the environment is difficult, implying high costs for the operations and requiring major investments, which as a consequence are reducing the competitiveness. According to the concept of CP, these preventive measures should allow the enterprises, mainly the exporting ones, to better respond to the exigencies of the international clients, having consequently competitive advantages on the other international competitors.

The adoption by the industry of the CP concept will produce important solutions towards the industrial development environmentally sustainable.

The Cleaner Production concept is the application of a strategy to the production process, the products and the services to increase the eco-efficiency and reduce the risks for the population and the environment.

The Moroccan Cleaner Production Centre has been established to train the enterprises to respond to these needs.

The programme is based on the experience acquired by UNIDO in the sector, establishing the world network of the cleaner production Centres. The Centre should play a coordinator role for:

- Organizing demonstration programmes, through in-plant assessments.
- Arranging campaigns of sensitisation.
- Organizing programmes of technical training.
- Promoting investment projects in technologies involving cleaner production.
- Providing specialised technical advice to the national authorities on the most suitable legislation to be adopted, assuring the best source of updated information on the cleaner production technologies.

The Centre is developing its action through the following activities:

- In the production process, through an improved conservation of the raw materials, saving of energy and reduction of the toxicity and danger of the raw materials utilized. Moreover, it is also aimed at the reduction, during the production, of the quantity and the toxicity of all emissions and, generally, of the waste.
- In the case of products, reducing the negative effects during their life cycle, from production until the disposal.
- In the case of services, paying attention to the environmental situation from the concept till the putting into effect of the services.

The cleaner production concept requires change of attitudes, a responsible environmental management system and the appropriate assessment of the technological options available. Putting into effect the CP concept will improve not only the environmental performances of the enterprises, but also their financial results. In fact, the adoption of cleaner production measures often requires insignificant financial investments, while when important investments are needed the economies obtained, thanks to the option applied, give a rapid financial return on the investment.

The introduction of the CP in Morocco is a priority, mainly because the investment of high capitals in CP has not yet been done. Therefore, the moment is favourable and any delay in the application of the CP measures will cause the establishment of a technological basis that utilizes a high quantity of natural resources. This could increase the negative impact of the industries on the environment, through the higher exploitation of the resources and the increase of the waste, delaying the development of Morocco and augmenting the costs of the raw materials and of the energy.

To satisfy this need, UNIDO and the Government of Morocco decided to establish the CMPP. The development of the services offered by the CMPP is planned in a business plan based on a five-year duration with the intention to answer, in the most efficient and adequate way, to the needs of the Moroccan industrial market.



### **3. PROJECT IMPLEMENTATION**

#### **3.1 Overall organization and project management**

The CMPP is designed as a non-profit association according to Moroccan law. It is hosted in the premises of the Confédération Générale des Entreprises du Maroc (CGEM).

The highest organ of the Centre is the General Assembly, constituted by the ensemble of the members of the CGEM. Each member has a number of voting rights proportional to its contributions to the CMPP, with a maximum of 5 votes. The General Assembly meets twice per year and takes decisions on issues submitted by the Board.

The Board is the governing body of the Centre at the strategic level, and has 23 members including its president. In particular, the Board has the responsibility to promote the CMPP within the country, to approve the contract of the director of the CMPP and to assure the proper execution of the strategic decisions made at the operational level by the director.

An Executive Committee (EC) is installed to “ensure the concerted co-operation among all partners at national and international level” (see Project document p. 14). The EC is composed of the president of the Board (acting as president of the EC at the same time), the Ministry of Industry, as well as UNIDO and seco. No formal decision-making power is given to the EC<sup>1</sup>.

The director of CMPP is responsible for the execution of all the activities of the Centre according to the business plan and the yearly plans of activities, which have to be approved by the Board. The director’s salary is paid by UNIDO. The director is assisted by “two or three technical coordinators, paid by revenues of the CMPP” (Project document p. 14)<sup>2</sup>. Actually and in practice, the staff of the Centre is presently composed of the director, a deputy director and a technical director. The first two posts are paid by UNIDO, while the technical director is “theoretically” delegated by the Ministry of Industry and in principle belonging to the staff of said Ministry<sup>3</sup>.

The CMPP is supported by a Swiss Reference Centre, in all main tasks such as in plant assessments, training, policy advice, technology transfer, elaboration of the annual programs etc.

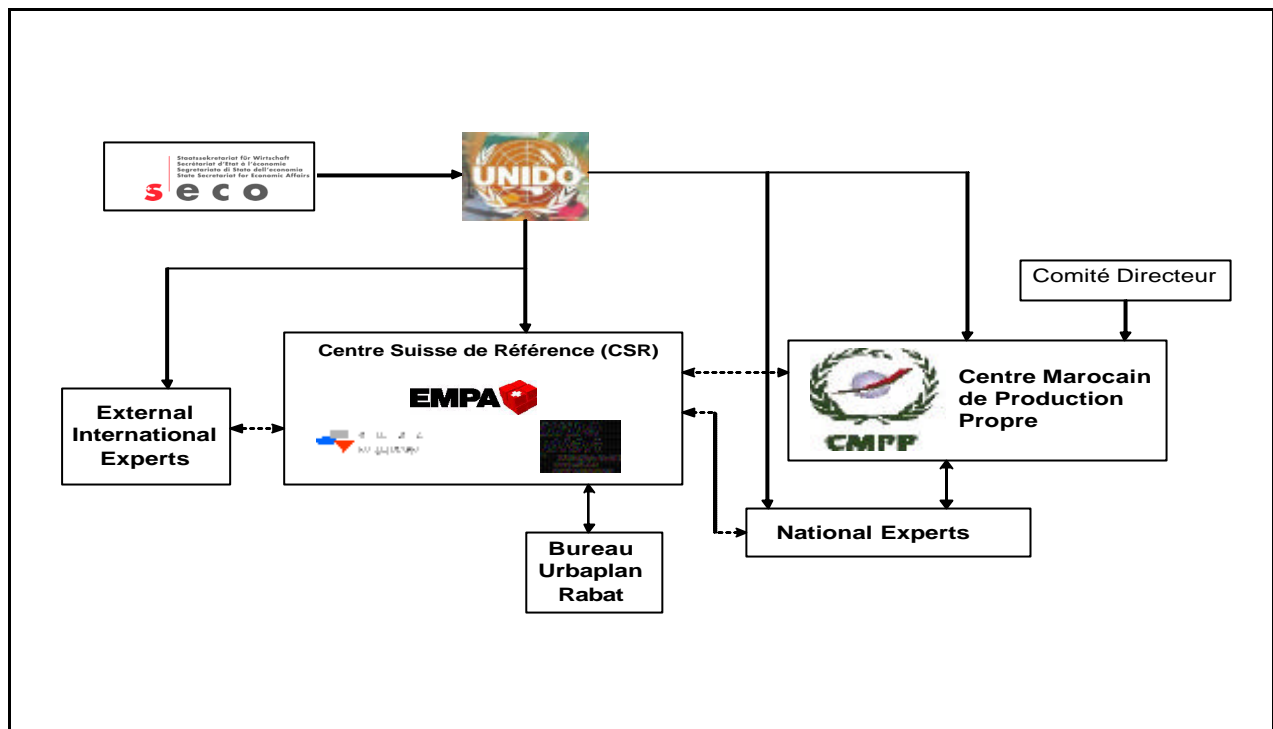
The following figure shows the organizational chart of the project design:

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<sup>1</sup> Formally this is due to the requirement of the Moroccan law that no foreigners can be members of a governing body of an association such as CMPP. In practice the EC meets more frequently (about 4 times per year) than the Board (twice per year), therefore, it turns out to be logical to delegate some decision making power to the EC. A corresponding revision of the Statute of the CMPP is under way, in order to declare the foreign members of the EC (UNIDO and seco) as non-voting observing members.

<sup>2</sup> According to the Business plan the director and an engineer will compose the centre’s staff”.

<sup>3</sup> Actually the delegation and the payment of the salary of the technical director have never been realized, even though the technical director has been working and acting in the Centre for more than two years.



### 3.2 Project strategy

The strategy of the project is to address environmental problems in industry not by taking measures at the end of the pipe, an approach which generally leads to significant additional costs for the enterprise and which often environmentally is not optimal in the long run. Rather, the approach is to take into consideration the total process from the acquisition of raw materials, through all stages of the production processes up to the management, reutilizing or recycling any by-products and “wastes” from these processes. In this sense the project intends to reinforce the approach of the project DIED (Développement industriel écologiquement durable), which the Ministry of Industry launched already in 1995 in cooperation with UNIDO.

The approach of introducing cleaner production is not that of technology transfer only; rather the transfer and the further development of know-how within the country are crucial for the success of the concept.

The “project CMPP” aims at introducing and extending the application of the CP-concept in the country by building the necessary professional capacity, and by establishing the “Centre de Production Plus Propre” (CMPP). This Centre is to be linked to a network of national and international professionals in industrial consulting, as well as to other national centres for Cleaner Production established in many other countries in Africa and in other continents. The main task of the Centre is to train and assist entrepreneurs on how to find the best solutions for their industrial production problems.

The project document of 1999 foresees the support financed by the Swiss Government for a maximum of five years and programs the activities into two phases. After the first phase of three years this in-depth evaluation was scheduled to analyze the progress and propose corrective actions for the second phase. The expectation is that the Centre will be autonomous and financially self sustainable after five years.

It is important to stress that the Centre is not meant to become a consulting agency itself, but rather a catalytic agent assisting the building-up of national capacities in the consulting sector

and within industry, as well as providing information for the access to adequate credit lines for CP investments.

### **3.3 Development objective and immediate objectives**

The general objective of the program is to improve the eco-efficiency<sup>4</sup>, enhancing at the same time the economic performance and thus the competitiveness of the enterprises concerned.

The project document foresees two immediate objectives for the first phase of three years, with a total of 12 operational results expected (see project document, chapter 3).

#### **Immediate objective 1: Establish the CMPP** (Four outputs are foreseen)

- Establish the Board (Conseil d'administration) and the General Assembly.
- Prepare the Statutes for the official (juridical) status of the Centre.
- Adopt the initial version of the business plan.
- Select and contract the (Swiss) Reference Centre.

#### **Immediate objective 2: First operational phase** (Eight outputs are foreseen)

- Starting the operational activities of the CMPP.
- Complete a number of demonstration projects for investments in cleaner technologies in selected enterprises.
- Submit a number of CP investment projects to national, regional or international institutions.
- CMPP capable of accessing and disseminating specific information on CP technologies and expertise.
- Policy advise: prepare and present two reports to the concerned authorities<sup>5</sup>.
- Introduction of CP concepts into the study programs of major Moroccan Universities
- Annual activity report of the CMPP, distributed to the main actors of CP issues.
- Media coverage (press, radio, TV) on the activities and the progress of the CMPP.

### **3.4 Swiss Reference Centre (SRC)**

The project document foresees that the CMPP be supported by the services of a "Swiss Reference Center". Out of several Swiss candidatures proposed by seco, a delegation composed of Morocco, UNIDO and seco representatives selected in February 2000, among several candidatures, the Swiss Consortium EMPA-Bob Partners- Urbaplan. UNIDO has informed the selected SRC with a letter dated 5 May 2000, which included the description of the responsibilities and Terms of Reference (see Annex IV).

The scope of these terms of reference is very comprehensive, but the description of tasks is in rather general (non-operational) terms. In appendix III of the project document the role and responsibility of the SRC is summarized as follows:

*"Missions:*

*surveiller les programmes de démonstrations: conseiller le CMPP sur toutes autres questions*

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<sup>4</sup> This entails both, the reduction of pollution and the reduction of flows and use of natural resources.

<sup>5</sup> 1<sup>st</sup>: Report on the implementation constraints for the adoption of CP approaches, submitted to national authorities;

2<sup>nd</sup>: Conceptual Proposals on how CP investments can be financed and submitted to financial institutions and regional/ national authorities.

*relatives à la mise en œuvre du projet, notamment les évaluations sur site, la formation, les conseils en matière de politique, le transfert de technologies ainsi que la promotion des investissements en PPP.*

*Efforts demandés:*

*expertise technique et stratégique internationale en matière de PPP ».*

However, the accompanying letter to these TORs, dated 5 May 2000, mentions at the same time that no framework contract for the SRC was foreseen by UNIDO to cover the tasks requested, but that individual contracts would be made on a case-by-case basis<sup>6</sup>. As a consequence the SRC offered services only upon specific requests, mainly providing international experts for assistance in executing in plant assessments (IPA) in co-operation with national experts, but also for other tasks such as the elaboration of a Manual on the Introduction of Cleaner Production in the Moroccan Industry and the realization of a video<sup>7</sup>.

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<sup>6</sup> While the letter states that based on the positive experience a framework contract could be discussed after 12 months, UNIDO never implemented such a contract for the whole period of 37 months up to February 2003. It seems that there is a common agreement that this was a major factor for the unsatisfactory implementation of the services expected from the CSR in the project document.

<sup>7</sup> According to the SRC, the terms of reference for this video were also too vague and general, without clear ideas on specific objectives and on target groups. After a preparatory work made by the SRC, UNIDO cancelled the task again, postponing it to phase II.

## **4. RESULTS AND ACHIEVEMENTS OF THE PROJECT**

### **4.1 Production of outputs**

#### ***4.1.1 Interdependence among the outputs***

In pursuing its objectives, the Centre is carrying out activities in six areas, according to the project document:

1. Awareness Raising.
2. Training.
3. In Plant Assessments.
4. Assistance for financial services and technology transfer.
5. Dissemination of Information.

A sequential logic and interdependence exists among these activities, they can be considered as a system. Each of the activities can be carried out effectively only after the “preceding” activities have been operated for some time and have shown their effects to some degree. For example, demand for training and for in-plant assessments cannot really develop before awareness raising (and promotion of the CP concept and of the Centre) has had its effect. On the other hand, financial services only make sense once concrete proposals for process improvements with major investments have been identified and approved by the firms.

This also implies that one should expect a shift in the focus of activities over the years. During the first years the focus will have to be on awareness raising and trainings, before capacities and demand for in-plant assessments have developed enough for intensification of these activities. Policy advice is somewhat more independent of this logic. The demand for these services depends more on the present status of environmental legislation and pending projects of the government.

Table 1, on page 39, shows the overview of the outputs generated by CMPP during the years 2001 and 2002<sup>8</sup>, as reported by CMPP to the evaluation team and reportedly approved by UNIDO<sup>9</sup>. It must be kept in mind that these “output”-indicators express only the level of activities in figures. However, a number like “589 person-days of training provided” may have a limited significance in terms of what the impact of this “output may have been. This reservation must, as always, be kept in mind with all quantitative indicators.

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<sup>8</sup> No data has been made available for 2000.

<sup>9</sup> As the evaluation team noted during the preparation of its final report there exist differences between the performance indicators as reported in tables by CMPP during the mission, and the official copies of the progress reports available at UNIDO. For example, the indicator B.1 (Number of In Plant assessments) given by CMP was 13 for 2001, while in the official report the number cited was zero; and indicators E.1 and E.2 (financial sustainability) planned for 2002 were given by CMPP as 0.2- 0.25; and .025-0.30 respectively; while the official copy turned out to show 0.4 and 0.5 respectively.

## Outputs achieved

The following data stems from documents handed over to the evaluation team during its mission in Morocco.

Activity	Indicator	Outputs 2001			Output 2002			Comment
		Planned	Realized	%	Planned	Realized	%	
1. Awareness Raising	n.a.	n.a.	n.a	-	n.a	n.a	-	
2. Training	A.1. Number of persons trained	n.a.	100	-	300	265	88	
	A.2. Number of person-days	n.a.	300	-	600	589	98	
3. In Plant Assessments	B.1. Full Assessment		13		6	11	180	All assessments started have been completed only in 2002, although with delays (in the official performance report 2001, copy available at seco, indicator B.1 is given as 0, and 0%).
	B.2. Number of options identified		43		40	86	215	
	B.3. Number of options executed, or being executed.		4		5	15	300	
	B.4. Quick Scans		5		8	5	63	
4. Assistance for financial services and technology transfer	C.1. Number of projects defined for investments (Applications for investments credits prepared)		3		5	4	80	
5. Dissemination of Information	D.1. Number of Information distributed (issues of Bulletins etc)		200		540	450	83	
6. Policy Advice	None available	n.a			n.a			

*Table 1 Outputs in the six areas of activities as reported to the evaluation team by the CMPP.*

## Awareness Raising:

No quantitative data in the form of performance indicators has been made available on this activity. The “performance reports” of 2001 and 2002 mention these outputs:

1.	A national seminar on CP, each in 2001 (350 participants) and 2002 (200 participants) The second seminar was mainly dedicated to the presentation of the results of various In plant assessments.
2.	Two regional workshops (in Agadir with 80, and in El Jadida with 120 participants) were used to promote the services of the CMPP to entrepreneurs of the concerned regions.
3.	The “jeudis du CMPP” (every fourth Thursday 20 to 22 hrs. of each month) were introduced as a sort of round table with industrialists, with Keynote presentations of CP-Topics. They had a frequency of 20 to 30 participants. These events are considered as an innovative idea, and they seem to have found lasting interest, even though participants had to pay a fee of 20 Euro.
4.	CMPP news: Both yearly reports mention this tool. In 2001, it was issued monthly with a distribution of 3000 <sup>1</sup> .
5.	Meetings with industrialists: CMPP has participated in “several” of gatherings organised by sectoral associations. CMPP has used these occasions to present the CMPP and its program.

Table 2      *Outputs reported under the task area awareness raising.*

## Training

The table on performance indicators (Table 1) uses the two indicators number of persons trained and number of person-days of training. On both counts the report shows that around 90% of the planned targets had been accomplished. The trainings were addressed at three target groups: Staff of the CMPP itself, national experts, entrepreneurs and their staff. No evidence has been found that an effort is being made to develop the concept of “Training of Trainers”, which is considered to be indispensable if significant extension effects are to be achieved.

The evaluation team has no evidence that any University has been involved in any of the training (or awareness raising) activities.

## In Plant Assessments

The performance reports in Table 1 reports that 13 IPAs have been “accomplished” in 2001, and 6 in 2002, that is a total of 19<sup>2</sup>. Only in five cases per year a Quick-scan have been done<sup>3</sup>.

The sectoral distribution of the enterprises assisted with IPAs is shown in Table 3:

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<sup>1</sup> Which in itself does not indicate the number of readers, nor its impact.

<sup>2</sup> However, detailed information was only given to the evaluation team on 17 IPAs, furthermore some 4 of the 19 enterprises assisted were assisted under the integrated program, through contracts by the ministry of industry.

<sup>3</sup> It remained unclear whether these are cases where after the Quick scan a full IPA was executed, or whether these are separate cases.

Sector	Number of enterprises assisted	Approx. Number of employees		Max. size	Min. size
		Permanent	Seasonal	(incl. seasonal)	
Agro-and food industries	7	1,240	4,200	3,300	135
Textile	2	870	2,400	2,600	570
Glass	2	1,300	0	700	600
Steel foundry	1	600	0	600	600
Chemical/ Parachemical industry	4	1,250	28	900	50
TOTAL (approx.)	17	5,200	6,600		

*Table 3 Overview of the characteristics of the enterprises assisted by the CMPP (Data reported by CMPP).*

It must be mentioned that all of the 19 have been completed only in 2001, due to unplanned delays in the completion of the reports of these IPAs<sup>4</sup>. In nine of the IPAs, international experts have cooperated with a national expert. All IPA studies have been “accompanied” by a staff member of CMPP<sup>5</sup>, in general the technical director.

The number of options identified to improve the production processes was reported to be 86 in 2002, which is more than twice the planned number; also the number of options implemented or being implemented in 2002 is given as three times what had been planned. However, no consolidated information is available yet on either the environmental impacts achieved through these measures, nor on the level of investments made and on related repayment periods of these investments<sup>6</sup>.

The criteria used for the selection of the sectors have remained unclear to the evaluation team. On the one hand the director of CMPP maintained that a study had been done at the beginning of the project to identify sub-sectors and enterprises according to clear and transparent criteria. On the other hand, this study could not be made available to the evaluation team, and the SRC on their part mentioned seemed to have been under the impression that the selection of sub-sectors was not based on clear criteria, but rather was driven by opportunity<sup>7</sup>.

The size of the enterprises assisted varies in the range of medium to large (several hundreds and up to the two- to three thousands). Only one enterprise was really a small one<sup>8</sup>.

### **Financial advice for CP-investments and technology transfer**

According to Table 1, three projects for investment and financing were prepared in 2001, and four in 2002 (Proposals were mainly prepared for submission to FODEP). This corresponds to some 80% of what was planned in the yearly plans. No consolidated data on the total volume of these projects, or on the question of whether any technology transfer- or its character- is associated with these projects is available to the evaluators.

<sup>4</sup> Practically all final reports of IPAs have been submitted by the experts to CMPP (and CMPP to the concerned enterprises) in September of 2002, a few weeks before the presentations at the nationals seminar. It seems that the scheduling of this seminar has put some pressure on the finalisation of the reports.

<sup>5</sup> CMPP in effect being the agency “issuing” the contracts to the experts and being responsible for the liaison between experts and the enterprise. Formally it is UNIDO which has been giving (approving) each individual contract of national and international experts.

<sup>6</sup> CMPP’s table on performance indicators 2002 mentions: “*Actuellement les experts nationaux et le staff du centre finalisent un document qui reprends tous les impacts des audits réalisés sur l’entreprise. Sa publication est prévue au plus tard le 15 mars 2003.*” This report has not been made available to the evaluation team.

<sup>7</sup> The evaluation team is of the opinion that „demand driven“ choices are acceptable fort he beginning of the project; but that after one year the selection should be done according to rational criteria.

<sup>8</sup> Unfortunately it was exactly this single small enterprise (metal surface treatment), which was not a proper choice because it is located in the midst of a residential area with intensive nuisances. This factory should close down at the present site and be relocated. Assistance for any CP investments is not adequate at the present site.



## **Dissemination of Information**

No quantitative indicators are available. The progress reports of 2001 and 2002 give only vague information, mentioning that CMPP “has become an indispensable and valid source of information on CP and for environmental management, with industrial firms, administration, investors and diplomatic representatives creating the demand. The report 2001 mentions that an information system with an Intranet component supporting the CMPP, and a documentation centre<sup>9</sup> at the seat of CMPP will be established and made available to permanent staff and national experts. The evaluation team has not found any significant evidence of either component.

## **Policy Advice**

No quantitative indicator is available. The progress reports 2001 and 2002 mention that CMPP had been present in “All inter-ministerial committees which relate to the protection of the environment, and that the CMPP cooperates actively in studies preparing laws on the management of wastes, on environmental impact studies and on air pollution”. The evaluation team has not been in the position to verify the extent or the effect of this engagement.

## **4.2 Impact of the activities**

Impacts are indirect effects which are occurring and evolving as a result of the outputs of the project; for example, improvements of the natural environment, or in competitiveness of an enterprise as a result of the CP measures and investments. Obviously, these are more difficult to identify and measure than inputs and direct outputs. One reason is the confounding factor problem: The difficulty to separate out impacts which are due to the project from those due to other, external factors such as economic development in general.

Therefore the significance of quantitative impact indicators must be interpreted with caution.

### **Environmental and economic impacts at enterprise level**

CMPP’s system of indicators (according to the related yearly progress reports 2001, 2002) defines a category “G: Impact au niveau de l’entreprise”. However, up to now for this category no data has been reported for the specific indicators such as “Water Consumption”, “Energy Consumption” or “Emissions of SO<sub>2</sub>, or NO<sub>x</sub> into the atmosphere”. Therefore the Evaluation team cannot judge these impacts, even though based on the interviews with industry it can be assumed that some positive effects have taken place, environmentally as well as economically at the level of the enterprises. No specific information is as yet available<sup>10</sup>.

The performance report 2001 states under the category G: impact au niveau de l’entreprise:

*“Nous pouvons donner des plannings de performance en juin 2002 pour le deuxième semestre 2002»*

et le rapport des indicateurs 2002:

*»Actuellement les experts nationaux et le staff du centre finalisent un document qui reprends tous les impacts des audits réalisés sur l’entreprise. Sa publication est prévue au plus tard le 15 mars 2003».*

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<sup>9</sup> With classic instruments (such as books and reports), as well as electronic documentation.

<sup>10</sup> One should, however, expect that the experts work out theoretical estimates of effects (economic and environmental) of their proposals during the IPA process. As a matter of fact, some expert reports do contain such estimates. It is a matter of compiling these estimates for the semester reported, as foreseen in the project document. Empirical data will become available only after the implementation, during monitoring and follow up activities.

### At policy level

The evaluation team has no concrete evidence of the impacts of CMPPs activities in policy advice, except for its involvement in various environmental committees as stated in the progress reports. No evidence has been found of the elaboration of the two reports to be submitted to national authorities and financial institutions as called for in output 2.5 of the project document.

### Institution building

The annual reports 2001 and 2002 contain two indicators under group:

- F.1 Number of persons trained by CMPP, who during the year have completed at least one CP training module in an institution or who have completed at least one full assessment.
- F.2 No. of policy changes that have been /are being implemented, to which the CMPP contributed. (“Nombre des textes traités avec la contribution du Centre”).

The progress reported by CMPP is as follows:

	2001		2002	
	Planned	Achieved	Planned	Achieved
F.1	0	3	0	6
F.2	0	3	3	3

Table 4 Performance indicators on policy advice activities by CMPP.

Indicator F.1 is rather an output indicator for training, with only weak causality with institutional impact.

Indicator F.2 can have a relevance to institution building if the contributions referred to are in fact relevant to environmental legislation introduced. The evaluation team has encountered evidence of related details.

However, the evaluation team has noted a relatively high degree of recognition of the CMPP in industry as a “neutral and objective“ institution to give advice to enterprises. This positive image that the evaluation team sensed on the basis of its contacts (interviews and the survey conducted) does in fact exist and it is considered as a relatively reliable and positive institutional impact of establishing the CP concept in the Moroccan industry. CGEM and its various sectoral associations play a crucial role in this context.

### Sustainability

The indicator system describes sustainability as the financial sustainability of the CMPP, i.e. its capacity to generate income of its own from the sale of its services and from project resources from sources independent of the CP project financed by seco. Two indicators are used:

- E.1 Ratio between operational (income generated by the CMPP<sup>11</sup>) and/(operational expenses of CMPP).
- E.2 Ration between (Operational Income and national income) and / (operational expenses of CMPP).

	2001			2002		
	Plan	Achieved	%	Plan	Achieved	%
E.1	0.1-0.2%	0.12	60%-120%	0.2-0.25	n.a.	n.a.
E.2	0.3	0.25	83%	.025-0.3	n.a.	n.a.

*Table 5 Performance Indicators used for financial sustainability, as reported by the CMPP to the mission.*

During the second year (2001), targets for E.1 and E.2 have more or less been reached. For the third year (2002) no monitoring data has been made available to the mission by CMPP. However, there have been indications that significant income has been generated from cooperation with the Ministry of Industry and several Aid Agencies such as GTZ, AFD and others (see Table 5).

#### **4.3 Achievement of purpose**

The project document of 1999 foresees that:

“At the end of the 5 year project period sufficient national capacity in the application of services of CP will exist in Morocco such that a sustainable application of this concept at large scale in industry will be guaranteed”. This is a challenging goal and statement of purpose.

After three years of project duration it can be said that the CP concept has been effectively promoted in industry (within the CGEM community) to a significant degree. This is hoped to be the focal point for the further radiation and extension, in terms of enterprises, sectors and regions. Also, significant progress has been made in capacity building through trainings of consultants and – to a lesser degree- staff in industry.

Unfortunately, universities, a crucial actor group for the sustainable application and dissemination of CP, have not been involved so far in the capacity building process. Also the concept of training trainers must be more systematically developed if the extension process is to be efficient and effective, using the limited available resources optimally. The process of establishing CMPP, as a recognized institution for CP know-how has been well started, an important precondition for sustainability in the sense of the purpose declared.

In terms of physical application in industry, the process can be said to have only started during the last two years. A systematic follow-up and extension program is needed to ensure and monitor further progress, utilizing the growing volume of know-how capacity.

#### **4.4 Factors influencing success and constraints**

Based on the evaluator’s analysis, Table 6 shows a summary of the major factors influencing success and constraints of the project. Two groups of factors have to be distinguished: external and internal.

External are those over which the project has no (or very limited) control.

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<sup>11</sup> Apart from the project support from UNIDO/seco.

The internal, have to be considered when implementing the recommendations of the evaluation.

See the following Table 6:

	<b>Project External Factors</b>	<b>Project Internal Factors</b>
<b>Positive Influence</b>	<ul style="list-style-type: none"> <li>• Pressure on Moroccan enterprises from their Clients in the EU which require minimal environmental standards in production.</li> <li>• Increasing competition on international markets.</li> <li>• Asymmetric regulation of international trade at the level of WTO, to the disadvantage of developing countries.</li> <li>• Facilitated access to adequate credit lines for CP investments.</li> <li>• The availability of sufficient capacities in high quality CP Know-how in the consulting sector, in Universities and in Industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Proximity to, and good relations with industry.</li> <li>• Common team spirit and commitment as a team of the CMPP staff.</li> <li>• Commitment of all members of the Board in meeting their obligations and in promoting CP and CMPP.</li> <li>• Clarity in the TORs for requests for international expertise.</li> <li>• Good French language capability of international experts.</li> <li>• Good networking with international expertise and CPCs in other countries with similar socio-economic conditions.</li> <li>• Clear command and simple communication lines.</li> <li>• Liberal delegation of responsibilities, with only strategic monitoring.</li> </ul>
<b>Negative Influence</b>	<ul style="list-style-type: none"> <li>• Environmental legal framework lacking elements of incentives for environmental protection and good management practices in the use of natural resources.</li> </ul>	<ul style="list-style-type: none"> <li>• The free distribution of CMPP's services to industrial firms, for example for In Plant Assessment work.</li> <li>• Lack of sense of partnership between CMPP and CSR, between national and international partner experts.</li> <li>• Lack of a long-term framework contract for the support services by CSR.</li> <li>• Overlapping of strategic with operational and Micromanagement activities of the project.</li> </ul>

*Table 6 Summary of the major factors influencing success and constraints of the project.*

## 5. FINDINGS AND CONCLUSIONS

### 5.1 Project Design, Structure and Management

1. The embedment of the CMPP within the framework of CGEM is the most appropriate solution to pursue the objectives given to CMPP. The proximity of CMPP and industry is an essential precondition for the success of the project, aiming at introducing Cleaner Production in the Moroccan industry. The active support of the Ministry of Industry, being the Ministry responsible of the project, contributes to the sustainability of the CMPP. However, it is felt that some members of the Board should more actively promote the concept of CP and the Centre.
2. The overall organizational structure of the project: “seco-UNIDO-CMPP and the SRC as a support agent” is complex and potentially complicated. If such a structure, with many key actors<sup>12</sup> and a correspondingly high number of communication lines, is chosen, it entails very high challenges in terms of management skill and quality, at the strategic as well as at the operational level. Communication channels must be kept simple: redundancies and overlapping in responsibilities must be avoided. More decision-making power and related responsibilities should be delegated. Strategic management should strictly remain strategic, and not be mixed with micromanagement at the operational level. The evaluation team concludes that in the project these principles have not been followed. Too many responsibilities at the operational level are tied to approval by UNIDO. Often the absences at the HQs of the UNIDO project manager<sup>13</sup> slow down the decision making process and impair the project efficiency and effectiveness. To conclude, the weak monitoring is due to a combination of bureaucratic rules, individual management styles and to the frequent change of project managers (three times in three years).
3. The quality of communication between the CMPP<sup>14</sup> and the SRC has not developed to a degree that is necessary for an effective partnership and an efficient use of the resource of the SRC, as it has been conceived in the project document. It is evident that the lack of a framework contract allowing the SRC to fulfill its tasks is a major factor for the deficiencies in the implementation of the project. In this vacuum of communication, fundamental differences in the perception of what is an optimal division of roles and of communication styles between UNIDO, CMPP, seco and SRC have hampered a smooth and effective cooperation between these “partners”. The SRC considers its role as not only providing technical experts, upon isolated requests unilaterally formulated, but rather as a partner to support and strengthen the CMPP in the planning and execution of its activities. While, on the other hand, the Moroccan partner, in particular the director of the CMPP, in his role as the national owner, appears to perceive the role of the SRC as unnecessary intervention into his own affairs, claiming more autonomous authority in the overall management. Seco, in turn, pursues the aim of a sustainable partnership between the SRC, its national counterparts in industry and at the CMPP. The idea is to develop self-sustainable activities beyond the financial support of the Swiss Government. Finally, UNIDO tries to fulfill its role of “executing agency for seco” by tightly keeping the project under control. This leads to the tendency of intervention not only at the strategic level, but often also at “micromanagement” level in order to keep control over the project.
4. The responsibilities of the Board and of the Executive Committee are not distributed in a way, which is supportive of an efficient guidance of the CMPP directorate. The Executive Committee, which is closer to the operational level of the CMPP, should obtain more

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<sup>12</sup> UNIDO, seco, Board, Executive Committee, CMPP, SRC, Ministry of Industry.

<sup>13</sup> These absences are due to official travels.

<sup>14</sup> As well as the communication between UNIDO and SRC, CMPP.

decision-making responsibilities. Many members of the Board must assume more responsibility in the active support the CMPP and must pay their member dues.

5. The roles and responsibilities of the project authorities as defined in the project document have not been fully implemented, both in the statute of the CMPP and in practice. The Executive Committee has neither statutory existence nor any formal responsibilities as a decision making body<sup>15</sup>.
6. The staff members of the CMPP are dedicated and competent professionals. However, more synergies and effectiveness could be realized if the staff develops more team cooperation.
7. The human resources of the Centre are insufficient in relation to the scope and volume of the tasks to be done.

In particular, the human resources available to the CMPP up to now, are insufficient to meet a growing demand for in plant assessments from all parts of the country, or to establish the “Regional Antennas”, which are necessary to extend the services to all the regions of the country.

8. The technical director of the CMPP has been waiting for two years for the effective delegation by the Ministry of Industry to the CMPP staff. During all this period she has not received any salary. The original promises made to her, that these problems would be solved, so far did not materialize. Nevertheless, up to now, she has worked and acted as a full and competent member of the CMPP and has assumed official responsibilities *vis à vis* the enterprises and other external actors.
9. The co-operation between the CMPP and the Ministry of Industry has been very good and has allowed the subcontracting of a number of studies and activities to the Centre, contributing to the generation of the own resources of the CMPP. Among other things the Centre has been subcontracted to execute In Plant Assessments of industries in the framework of the “Integrated Programme of UNIDO in Morocco”<sup>16</sup>.
10. The tasks foreseen for the SRC, as planned in the business plan<sup>17</sup>, are too broad in relation to the proposed resources and are too vague to allow an efficient and effective use of the services of international specialists.
11. The lack of a framework contract between UNIDO and the SRC, as well as the lack of clarity in the TORs prepared by CMPP for individual requests to the SRC, has been an important factor for these deficiencies. Various proposals for the involvement of the SRC into CP projects are examined and assessed in Annex VIII.
12. The international experts recruited by the SRC have not always met the expectations of the industrial clients or of the CMPP. Sometimes in terms of French language capabilities or in terms of specific know-how and experience in the industrial processes concerned to complement the know-how profile of the national consultant selected by CMPP/ UNIDO.
13. The procedures for the execution of the in plant assessments, as they are outlined in a manual<sup>18</sup> worked out by the SRC and CMPP have not been followed. This has weakened the efficiency and has led to delays of many months in reporting the results to the enterprises.

## **5.2 Relevance, objectives, outputs**

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<sup>15</sup> As a non-profit organization, the CMPP can invoice its services, but must prove through its accounts that no profits are made.

<sup>16</sup> However, the congruity of these subcontracts with the mission and objectives of Cleaner Production has not been obvious in all cases.

<sup>17</sup> And as reformulated in the Minutes of the strategic project meeting of all partners on August 15<sup>th</sup> 2002 in Berne.

<sup>18</sup> Introduction et application du concept de production plus propre: Projets de démonstration au Maroc dans les secteurs agroalimentaire, chimie-parachimie, textile et métallurgie CMPP and CRS, (not dated).

1. The evaluation team concludes that the project is relevant for the industrial context in Morocco. The economic, industrial and technological structure of the country, as well as the observed level of interest and demand for the Centre's services supports this conclusion.
2. The activities of the Centre and its concept have created interest and demand in the environmental sector in Morocco, both at public and private level.  
The development objective for the establishment of the Centre is to reduce the pollution of the environment produced in the country by the industry, especially in the small and medium enterprises. This objective is more and more actual. The Centre now has a well-established institutional position and the industries are requesting its services to benefit of gains of productivity and competitiveness.
3. A national capacity of expertise in the cleaner production is being built up, by focussing the attention of the actors in the sector on the increase of the productivity as a consequence of the adoption of CP measures. Thus, the project has contributed to the development objective even in the absence of a strong legislative framework. It shows that if the entrepreneurs recognise the economic benefit of introducing CP measures. The appropriate legislation framework is of secondary importance.
4. Industries, which export their products, especially to Europe, experience a pressure on the part of their major clients to meet environmental (and social) production standards of the international markets. This market-based mechanism is one of the most effective incentives to foster the demand for CP services in the Moroccan industry.
5. The Ministry of Industry, national sponsor and warrantor of the project, has a very good cooperation with the project. The Ministry has been subcontracting to the CMPP several projects regarding: environmental activities under the Montreal Protocol, the upgrading for improved competitiveness in the Moroccan industry, the financial preparation of environmental projects involving cleaner technology and promoted by the GTZ, some studies on environmental situations, etc.
6. The project started officially in January 2000 and the first year was utilized to establish its operational structure. Two immediate objectives were foreseen for the first phase of three years (see chapter 4).
7. The first one has been realised, except for the cooperation with the SRC, which still has to be well defined in an appropriate framework agreement to be prepared by UNIDO.
8. Regarding the second one, which was programming 39 activities for the realisation of eight outputs, not everything has been fully achieved.
  - **Output one:** the organization of the Centre, the training of the director and the work plan has been realized.
  - **Output two:** execution of a number of In Plan Assessments. Out of 40 applicants, twelve national experts with environmental experience have been selected and trained. The first demonstration programmes, through in-plant assessments in selected enterprises have been initially planned in three industrial sectors: textile, chemical and food (fishery). Later the metallurgical sector was added. The companies have been selected with the support of the sectoral federations and of the Board of the Centre.

An objective was also to cover different geographical parts of the country.

Initially the demonstration projects were planned on ten companies per year, two per sectors. Globally, over two years (2001 and 2002) sixteen companies have been selected to participate in the programme.

The duration foreseen for a demonstration project was of six months, with the participation of a national expert accompanied by a Swiss expert with experience in the CP measures to be put into practice. Unfortunately, the duration foreseen has not been respected and the delivery of the reports was made nearly one year after the

starting of the assessments.

During the last year the Centre has assisted some more companies in the framework of the Integrated Programme of UNIDO. In this context it was also foreseen to organize some seminars of sensitisation and to prepare some specific manuals on CP. In these years 265 persons have been trained (including the staff of the Centre, training of trainers and of industrialists), several seminars/workshops were organized, among them can be mentioned: the second national seminar on CP, in October 2002, with the participation of 200 persons, two regional workshops in Agadir and El Jadida and the Thursday round-tables organized every fourth Thursday of the month in the premises of CGEM. A manual on the Introduction of Cleaner Production in the Moroccan Industry has been elaborated in cooperation with the SRC.

- **Output three:** assistance to some enterprises to prepare investment projects in CP to be presented to national and international financing institutions. Two projects have been completely prepared and two should be finalized at beginning 2003. Three of these projects will be presented for financing to FODEP (Funds for Industrial Depollution) and one to the Swiss Green Credit line. The CMPP intends to reinforce this activity to play an intermediary role towards the FODEP.  
The cooperation with the other components of the Integrated Programme of UNIDO, of which the Centre is also an important component, is going on particularly with the Investment Promotion Unit, regarding joint investment projects for transfer of technology, license agreements and industrial patents.
- **Output four:** diffusion of technical information. According to CMPP, 450 requests of information have been delivered. This represents 80% of the expected planned results. The Centre is linked to the UNIDO and other international database on cleaner production.
- **Output five:** Advise on environmental policies. Two reports were foreseen in the project document. The evaluation mission has not seen these reports. The Secretary General of the Ministry of Environment stated to the evaluation team that the Centre has not directly participated to the legislation on the environment, but through the organization of seminars has contributed to the sensitization of the persons of the public administration sector involved in the problems of the environment.
- **Output six:** awareness rising in the universities of the country.  
The evaluation team could not any find evidence that such activities have been performed.
- **Output seven:** prepare the annual report on the activities performed by the Centre. Annual reports and work programs have been prepared and submitted as required to UNIDO.
- **Output eight:** organizing workshops for briefing the media on the concept of cleaner production. A lot of activity along this line has been done to assure adequate press and audio-visual coverage on the occasion of the preparation of the national seminar last October 2002.

The CMPP has skill-fully developed projects of co-operation with several other technical co-operation agencies, both national and international, already during its first three years of activities (USAID, GTZ, KfW, AFD etc.). This has contributed to the generation of own resources of the CMPP and to the prospects of the Centre to become financially self-sufficient after the initial five years of financing through Swiss Government support.



### **5.3 Sustainability and achievement of purpose**

1. After three years of project duration it can be said that the CP concept has been promoted in industry (within the CGEM community) to a significant degree and has acquired a positive image in industry. This is the basis for a further extension regarding enterprises, industrial sectors and regions. A significant progress has also been made in capacity building through trainings of consultants and, to a lesser degree, staff in industry.
2. Good progress seems to have been made in terms of financial sustainability of the Centre through the generation of income from other sources than those of the CP project of UNIDO/seco.

Thus, there are indications that the project, despite many difficulties, has made progress toward achieving its purpose and financial sustainability.

## **6. RECOMMENDATIONS**

### **6.1 To the CMPP**

1. Establish the functions of the staff and the delegations of authority in accordance to its statute. Well-defined duties are the prerequisite for the efficient planning and execution of activities.
2. When requesting services of the SRC, the CMPP should always formulate clear and specific ToRs. This is particularly important when major inputs such as missions of international experts are requested. The ToRs must be made available in due time. The profiles of required expertise should be defined and made available at the beginning of the year in connection with the yearly programme of the in plant assessments foreseen.
3. The staff of the CMPP should act as a team. The development of a common team spirit based on personal trust and confidence is indispensable. This will enhance further the efficiency of their operation and the credibility of the CMPP.
4. The director of the CMPP should delegate more responsibility to his staff. In his absence signatures for urgent matters, and the corresponding responsibilities, must be delegated.
5. The CMPP should intensify its cooperation and communication with the SRC, working toward an effective partnership where CMPP can profit from the potential of the SRC support. The existence of a framework contract between UNIDO and SRC shall facilitate this partnership enabling SRC to respond more flexibly to ad hoc demands of the CMPP for technical support.
6. The CMPP must urgently start co-operating with the Moroccan Universities in training and dissemination of the CP concept, as it is called for in Objective 2.6 of the business plan.
7. The CMPP should open a bank account under its name in order to put on this account the funds coming from the own resources of the Centre, the dues of the members of the Board and the payments made by other donors for the services rendered. This account should not include the funds received from UNIDO, which should be deposited on another account.
8. Based on the experience of the first phase, the services given by the Centre to industry have to be charged for. This will lead to more ownership of the enterprises for CP activities and more interest for the quality of the service and for deadlines for the completion of the assessment reports by the experts.
9. Considering the good perspectives of the Centre, the staff of CMPP should be reinforced by recruiting one or two qualified engineers to assist the enterprises in conducting environmental assessments and to follow-up the application of the CP measures proposed.
10. In the mid-term reinforcing the staff of the Centre shall allow the CMPP to establish regional “antennas” or offices, which are requested by the entrepreneurs, especially in the south of the country.
11. The CMPP should, however, avoid developing into a CP consulting agency. Rather, it should become a development agent and focal point for the CP market, as impartial broker between enterprises and consulting companies.
12. The Centre shall solve immediately the problem concerned the contractual status of the Technical Director, who so far is not yet employed by the Ministry (therefore not assigned to the project) and without salary or contractual arrangement with the Centre itself.
13. The training activity should not be addressed mainly to large enterprises. Small and medium enterprises should be the main target. The same applies to the in plant assessments.
14. When an in-plant assessment is committed and paid, the customer expects the final report to be submitted within the deadlines agreed upon, generally within six to nine months maximum. Therefore the CMPP should do its utmost to keep deadlines. The delivery of the technical report 15 months after the first visit it is not acceptable. The final report

should be personally delivered by the consultants and presented to the entrepreneur, asking for comments. The report should not be sent by e-mail only. After the report is delivered and accepted, the CMPP, in coordination with the national consultant, should make the necessary follow-up in the enterprise to monitor how the recommendations have been implemented.

15. The hotel sector should be included among the assisted areas. This sector is strategic for the tourism in Morocco, particularly in zones, which have scarcity of water.
16. The CMPP in its promotion of the CP concept should point out that it is not linked to the national public administration. The private entrepreneurs show reservations when State institutions are involved in the in-plant assessments.
17. The Centre should assure that its information bulletin (now published once every three months) for the next year it should be sent in hard copy and in electronic format, when possible, to all the parties concerned.
18. The planned training courses and awareness raising seminars should be announced in the bulletin at least six months in advance. The industrialists are busy persons and need to plan their programs with adequate advance notice.
19. Industrial companies in the country have problems in providing precise budgets and reports on the utilization of energy and water. The Centre should make a strong effort to persuade the companies on the need to establish an efficient monitoring system of water and energy consumption, harmful substances and other relevant economic and environmental data.
20. It is recommended that before an in-plant assessment is started, the company assisted be consulted regarding the expertise needed from the national and the international experts. Careful attention has to be paid to the selection of the appropriate expert, considering the knowledge of the language, the technical capabilities, the experience and the timing of the availability.

## **6.2 To the Board**

1. The Board should ensure that all its members honor their commitments for the support and the promotion of the CMPP. In particular each member should pay its contributions as foreseen in chapter 11 of the business plan.
2. The Board should include among the members of the Executive Committee of the Centre, representatives of at least one non-governmental organization, a university and a financial institution. UNIDO should strongly support this recommendation.
3. In agreement with UNIDO the Board should review the business plan of the Centre, focusing on the present needs and perspectives. Operations able to generate gains for the sustainability of the CMPP should be promoted.

## **6.3 To the SRC**

1. The SRC must react promptly to the requests of the CMPP for services of international consultants<sup>1</sup>. The CVs and qualifications of these consultants should correspond well to the qualifications required by the Moroccan enterprise and their curricula should be sent to the CMPP well in advance. Open questions should be solved directly between CMPP, enterprise and SRC, with copy to UNIDO.
2. The knowledge and experience of the international expert must complement that of his/her national counterpart and of the involved staff of the CMPP. In general, the international expert is the technical specialist with experience of the specific technical processes in the

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<sup>28</sup> In cases where TORs are believed not to be sufficiently clear, open questions should be submitted to CMPP promptly and in writing with copy to UNIDO.

particular industrial sector. However, there can be cases where the demand is rather for a broader interdisciplinary expertise. In any case, it is recommended that the SRC respond precisely to the specific TORs submitted by the CMPP and the concerned enterprise.

3. In cases where the profile sought is not found within SRC, the SRC must have easy access to a comprehensive database<sup>2</sup> for international expertise in order to recruit an expert with the required qualifications. In any case, the SRC should assure the availability of qualified experts in accordance to the requests of CMPP and based on a yearly programme prepared at the beginning of the year, with the indications of the specific sub-sectors to be addressed.
4. The CMPP should have the competence to propose to the SRC highly qualified Moroccan specialists as substitute for a foreign expert, in special cases where equally qualified Moroccan expertise is available. Such recommendations should be made at the beginning of the year when issuing the list of planned in plant assessments.
5. It is important that the international expert masters the French language to a degree that allows easy communication with the counterparts at the CMPP and within the enterprise. These are pre-conditions for the good implementation of the work.
6. The distribution of responsibilities between the national and international expert must be clearly laid down in their ToRs. It is necessary that their tasks be performed following the standards of their profession and that the contract (including the delivery of the final report) be fulfilled accordingly within agreed deadlines. Possible modifications in work schedules and deadlines must be timely communicated to the concerned partners.
7. It is recommended that the international experts have knowledge of the local managerial and cultural situation of the country, in order to apply the most appropriate solution to the problem of the firm. Sometimes it will not be possible to apply in Morocco the same standards as in Switzerland.
8. The Swiss consortium of companies representing the SRC should assure more continuity in the personnel working with the CMPP. The CMPP expressed its perplexity to the evaluation team regarding the fact that the initial SRC team working with the CMPP, had been changed because several persons in the consortium have withdrawn their participation. In the perception of CMPP this also contributed to the difficulty of establishing a working partnership with the SRC.

#### **6.4 To UNIDO**

1. UNIDO should assure a continuity of the personnel managing the project. In case of non-avoidable changes, careful handing over procedures should be made, avoiding loss of “institutional memory of the project”. Changing too often the project manager is not a good practice for the monitoring of the project and the implementation of the activities.
2. UNIDO project management should avoid delays in management decisions important for its partners, CMPP and SRC, concerning the efficient execution of the project (approval of contracts, of minutes of meetings, implementation of the decisions taken, comments on reports which need the approval of UNIDO, etc). Changes in the foreseen schedules should be communicated in due time to the parties concerned, in order to avoid unnecessary investments and cost (e.g. the video to be produced by the SRC).
3. The selection of international experts to work with the Moroccan counterparts should be the responsibility of the SRC and the CMPP, in the framework of their cooperation agreement, with copy to UNIDO. UNIDO has the right to refuse the nomination within a specified deadline, if valid reason exists and it is explained.

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<sup>2</sup> For example SRC should have direct access to UNIDO’s own data bank for international expertise in the concerned sectors.

4. UNIDO should not be involved at the level of micromanagement of the center, but delegate operational matters to the partners, i.e. SRC and CMPP. The submission of a panel of three persons for the selection of the international expert responsible for the in-plant assessment should be waived. The choice has to be decided between the SRC and CMPP, in the framework of the cooperation agreement. Contacts between these partners should not go through UNIDO, but should be direct, with copy to UNIDO. Afterwards UNIDO will issue the contract to the national expert.
5. UNIDO should decide, after consultations with the CMPP and the SRC, how to use the CP Manual prepared by the SRC.
6. The administrative monitoring of the project should be closer. It has been brought to the attention of the evaluation mission the case of a national expert who has not yet been paid, although he completed his work one and half years ago and he had sent several requests to the project manager. This case has been presented to the project personnel administration of UNIDO to finally settle the matter in accordance to the Director-General's Administrative Instruction, No. 9 "New Management Framework".
7. Some industrialists have found that the second national seminar was too generic. As executing agency for the project, UNIDO should monitor and give guidance also for the technical contents of the seminars and workshops. More seminars and similar actions are recommended also in other regions of the country.
8. UNIDO should conclude a framework contract with the SRC, as it has been done with other cleaner production centres. Having a defined contract, the SRC will be more responsible for answering promptly to all the requests of expertise of the CMPP and of the enterprises. Consequently the SRC will have a more concrete and direct involvement in the execution of the activities.
9. UNIDO has to streamline and simplify the operational and decision-making procedures, as well as the channels of communication between the parties.
10. It is up to UNIDO to provide all the information (technical and financial) needed for the good management of the Centre. At the same time, however, it is mandatory that UNIDO receive from the Centre periodical reports presenting the financial status and the progress of the actions undertaken.
11. The comments on the draft preliminary version of the in-plant assessments should be requested at the same time to all the involved parties (UNIDO, enterprise concerned and CMPP), with a precise deadline for the submission of comments.
12. It is recommended that UNIDO request an independent financial audit of the accounts of the Centre, both for the funds transferred from the HQs and the own resources of the Centre. It is a normal and good practice for projects of this kind. The CMPP is a project executed by UNIDO, who has the obligation towards the Donor to assure the proper administration of the funds. The evaluation team has received from the Centre a statement with the funds granted, but without indication of the expenditures made over the last three years. The CMPP has not sent the statement of accounts to UNIDO, but it has also to be noted that apparently never UNIDO has requested it. Presently the account of the CMPP is at the Wafa Bank, keeping in one single account the funds transferred from UNIDO and the own resources generated by the Centre.
13. It is recommended that the project manager keeps periodically informed the CMPP and also on the status of the accounts. The CMPP claims that an update of the general financial situation of the funds of the project was given to the management of the Centre, only at the time of the visit of the project manager on the occasion of the evaluation mission.
14. A draft of a paper indicating precisely the duties of each staff member of the Centre has been given to the evaluation team. It is recommended that this document be finalized and made official through the project manager at HQs.

15. Morocco being a French speaking country, it is recommended that in the future the language of the project be French. Good knowledge of French is imperative for the international staff to perform their task efficiently.
16. UNIDO should look after the recommendations of the evaluation mission, ensuring that, once accepted, they will be implemented as soon as possible. A corresponding report should be submitted to seco at the end of 2003, showing what has been implemented and what is under implementation.
17. UNIDO should update the project document, in line with the recommendations of this evaluation. This revision is to be done in cooperation with seco and the Moroccan partner. In particular the revision should foresee simpler communication – and decision-making procedures.

### **6.5 To seco**

1. The way in which seco accompanies and monitors the project, as well as the criteria according to which it intervenes, are appropriate for the role of a donor who has delegated the strategic management to an executing organization (UNIDO). This policy should be continued.
2. In the future any similar CPC project agreements with UNIDO, seco should assure that the project document foresees the appropriate framework conditions to facilitate the efficient use of all the financial and human resources at the operational level. In particular, a framework-contract for the SRC, as well as adequate delegation of responsibilities to the CMPP and the SRC.
3. In future operations for Cleaner Production Centres with seco, UNIDO should precisely define, already in the Project Document, the division of roles and responsibilities among all the parties involved. The contact person in UNIDO for all the operational matters regarding the implementation of the activities should be the project manager.

## **7. LESSONS LEARNED**

Lessons learned are generalizations, positive or negative, based on evaluation experiences with projects and programs. The lessons are derived from the evaluation and abstract from specific circumstances.

Frequently the lessons highlight strengths or weaknesses in formulation, design and implementation that can affect performance and results. Therefore, the lessons can be retained for improving the quality and effectiveness of the assistance in future projects.

The Evaluation Team derived the following lessons from its mission for evaluating the Cleaner Production Centre in Morocco:

### **7.1 Project concept and design**

1. For projects lasting only 3-5 years it is difficult to achieve sustainable application of CP in industry on a broad basis. Full application of CP can be reached only in the long term. The purpose of establishing CP Centres should be to help in creating a conducive policy framework and a critical mass of awareness and expertise, in order to extend the application of CP throughout industry on sustainable basis.
2. Each project document should include precise indicators for the outputs to be produced, in order to facilitate the monitoring of the achievements.

### **7.2 Implementation and commitment**

1. CP is not only a technological concept, but also an educational one. To be effective it has to be promoted through sound environmental management practices. For its implementation a consistent environmental government policy framework is necessary, which should facilitate preventive actions and financial advice to accompany the actions.
2. Services should not be provided free of charge to the enterprises, except in well-justified exceptional cases, for example really small and motivated enterprises. Enterprises do not develop the necessary ownership when services are given free of charge. As a result the effectiveness of the service suffers.
3. The concept of CP has to be introduced with priority to small and medium enterprises underlining also its economic advantages. The relevance of the environmental objectives and the potential of “cleaner production” in contributing to sustainable development imply that awareness about the advantages of the CP concept has to be fostered.
4. Integration of national counterparts from the beginning of the activities of a Cleaner Production Centre is a precondition to get commitment. The choice of the best-motivated, committed and competent counterparts at public and private level plays an important role for the successful development of the Centre.
5. Carrying out in-plant assessment projects is and should remain one of the major activities of a Cleaner Production Centre. In-plant assessments give the opportunity to monitor the results of the methodology and indications on how to improve it. Following these demonstrations the Government should support the CP concept by establishing an incentive oriented policy framework, which includes assistance for access to proper credit institutions for financing the implementation of appropriate environmental measures in the enterprises.

### **7.3 Monitoring and reporting**

1. When the CP Centres are linked to a network, the executing agency should install instruments so that the CPCs are in a position to be continuously informed about new

technological developments, giving methodological guidance and inquiring about needs and expectations.

2. Periodic and regular monitoring by the executing agency on the activities of the Centre and its resources is crucial for assuring guidance, control and steady development of the network.

#### **7.4 Awareness Raising**

1. The influence of clients in the international export market, requesting certain international environmental and social standards of production, is one of the most effective mechanisms for awareness raising, inducing enterprises to engage in Cleaner Production approaches.
2. Awareness rising in cleaner production has to be followed by training. This is the key precondition for the success of the in-plant assessments. Universities have to be involved in the actions of awareness rising.
3. The cleaner production concept can be sustained if awareness and willingness are present within the management of the enterprise and if the management can transpose the corresponding spirit to the employees.

#### **7.5 Training**

1. To assure more effective extension effects, the training of trainers is important.
2. Training can be effectively combined with in-plant assessments by associating junior assessors or universities students in teams with experienced senior experts.

#### **7.6 Technology transfer and financial assistance**

1. Three years is a minimum time required to implement the technological transfer investments proposed to the enterprises, leading to corresponding environmental and economic effects.
2. While foreign expertise is needed to ensure the correct choice of the technology required, it is necessary that the foreign experts know the country and the local entrepreneurial culture and mentality. For this reason, a good partnership of international and national expert is an appropriate approach. It allows transfer of technical knowledge and assures at the same time that local problems are taken into consideration.
3. Transfer of technology requires genuine willingness for cooperation between the two parties and has to be practiced at entrepreneurial and at the plant level.
4. It is a very important task of a CP Centre to provide integral assistance to the enterprises, from the identification of the needs to the realization of the measures of cleaner production, providing advice for finding access to adequate credit facilities for the investments.



## Annex I

### **Joint In-Depth Evaluation Centre Marocain de Production plus Propre (CMPP)**

#### **Terms of Reference**

## **1. The Project**

### **1.1 Overview of the UNIDO National Cleaner Production Centre (NCPC) Programme**

In 1994, UNIDO along with its partner the United Nations Environment Programme (UNEP) initiated a programme to create a global network of National Cleaner Production Centres (NCPCs). Initially, in the period 1994-95, the programme established eight NCPCs: in Brazil, China, Czech Republic, India, Mexico, Slovakia, Tanzania and Zimbabwe. Since then, it has gone on to establish 11 other NCPCs in various countries: Tunisia in 1996; Hungary and Nicaragua in 1997; Costa Rica, El Salvador and Viet Nam in 1998; Guatemala and Morocco in 1999; Ethiopia, Kenya and Mozambique in 2000. In 2001; UNIDO established a new centre in Lebanon. In 2002, UNIDO has launched a program for the establishment of NCPC in South Africa during the conference of WSSD.

UNIDO will extend the network for the establishment of new centres in Middle East by year 2003 –2005 to have three additional centres in the following countries: Egypt, United Arab Emirates, and Jordan.

UNIDO has gained experience in establishing NCPCs in 24 countries worldwide. UNIDO has defined the specific requirements for the establishment and the organization of the NCPC in Morocco, which has a strong sectoral approach and will concentrate on working in the most industrialized regions of Morocco, Rabat, Casablanca, Marrakech, Agadir, Oujda, and Jadida. The NCPC will serve a coordinating and catalytic role for enhancing the application of UNIDO's holistic cleaner production approach as an efficient tool to improve industry's competitiveness and decrease its negative environmental impact. The NCPC will carry out a set of activities, including in-plant assessment projects, training programmes, CP technology and investment promotion, and policy advice and information dissemination. To ensure sustainable application of the cleaner production concept and to build on already existing national capacities, the Confederation Generale des Enterprises du Maroc host the NCPC.

### **1.2 Overview of the Morocco Cleaner Production Centre**

#### *1.2.1 Historical Background*

The Moroccan Cleaner Production Centre (MCPC) was established in 1999. The project was able to build on cleaner production activities already undertaken in Morocco under a project funded by Switzerland. UNIDO and the Executive Board of the Centre chose the director of the Centre. He was appointed in 2000. Currently, the Centre has five persons as staff: the director, two professionals, and two general services. The Centre is hosted by the "Confederation Generale des Enterprises du Maroc", and receives from this institution free office space and logistical support. The center's legal status under Morocco law is this of an NGO. Since the beginning of its operations, the Centre's activities have been overseen by a Steering Committee.

The Swiss-funded NCPC projects are structured to establish a strong link between the NCPC and an institution in Switzerland that will be its reference Centre. Soon after the project

document was officially signed in December of 1999, the UNIDO project manager started the process of choosing the Swiss institution that would have been the reference centre for Morocco.

Seco provided a list of potential institutions and UNIDO sent out the Terms of Reference to each institution indicated. In February 2000, UNIDO and a group of Moroccans, who were in the Executive Board of the Centre, visited the institutions proposed either as consortium members or as individual bidders. Since the Moroccan counterparts had to feel comfortable with the chosen reference centre, it was recommendable to include them in the choice of the reference centre.

At the end, a consortium headed by EMPA was selected. After the choice had been made, the Chairman of the NCPC's Executive Board (some time in early March 2000,) informed EMPA that its consortium had been chosen. An official sub-contract would have been awarded after the consortium had shown that it could actually deliver what it had stated. In the meantime UNIDO would proceed with individual contracts on Budget Line 11-50. This was explained again to all the members of the consortium selected at the NCPC Directors meeting in May 2000 in Berne.

The first task given to the consortium under contract on BL 11-50 - was a basic training course in Switzerland for the Director and the Deputy Director of the Centre, who had in the meantime been chosen (the Director was chosen through an advertisement in the newspapers followed by interview sessions with the best candidates and a Committee composed of UNIDO staff and members of the Executive Board).

This training course was meant to take place in June or July 2000. However, the training had to be cancelled at the last minute because the Director of the Centre abruptly resigned. This led to a hiatus in all activities as the search started for a new Director. The new Director came on board in September 2000. He and the Deputy-Director took part in the basic training prepared for them by EMPA, and the first annual work plan of the Centre was prepared.

This was discussed and agreed at an Executive Board meeting late in the year. Then, the Centre began discussions with EMPA on how to insert them into the work plan. The project manager took part in January 2001 in a large kick-off seminar for the project, which was followed by a first working mission of EMPA.

The demand for assistance basically starts from the country to UNIDO, then to EMPA and ends in the country. The audits in sugar, textile, fish, chemical and metal industries have been completed and the presentations have been done in a national seminar at the end of June 2002. A new UNIDO project manager was nominated in February 2002.

The project manager, had to clearly define responsibilities of the parties involved (consultants, SRC, UNIDO, etc.) and to get a proper working atmosphere.

Further the project manager had to analyze the reports done by the national consultants, international experts and SRC, to harmonize the activities done, how to benefit from these reports and move from assessments to implementation recommendations, finalizing the activities related to phase one.

The new project manager pointed out the following:

1. There was delay in the implementation of some activities; some reports regarding the audits were not available from both sides (National, International expert and SRC).
2. The National Seminar was postponed several times.
3. The urgent need to improve the centre performance,

4. The Limited numbers of assessments done.
5. Lack of regular communications between Centre and Swiss Reference.
6. Poor quality of CVs was provided by SRC.
7. Lack of Integration of activities.
8. The Problem of the Video/Urbaplan and the essential to have a professional Scriptwriter in charge of preparing the structure, treatment and final script. One thing is to master a subject but another is to write for videos. Also you would need to rely on a professional producer or a production company that will be in charge of filming and editing of the final product. You have to harmonize visuals and text without I have suggested to urban plan to provide a proposal with clear inputs to define the scope and costs for the production of the film.
  - a. Purpose of the film.
  - b. Target audience.
  - c. Concept and topics to cover with specific messages (i.e. introduction/background, situation/problems to be addressed, main players, solution/tools, main message, conclusion, etc.).
  - d. Final product you want to have and format and ways of distribution.
  - e. This will provide information for a "visual treatment" that, in turn, will define locations to be filmed, production team, responsibilities for logistics, filming, production and editing and decide on a cost effective way to produce the final product.

May be the above point 8 can be better summarized as follows:

- The first Subcontract for preparation of a manual on CP was prepared and the manual should be distributed for comments.
- Extension of phase one will be decided after the evaluation.

The above-mentioned remarks have been discussed with SRC to reach a common agreement on the improvement of the centre performance, a better-integrated approach for the services provided and finally a sustainable future.

There is an Executive Committee guiding the activities of the Centre.

### **1.2.2 Purpose, Main Outputs, Budget**

The main purpose of the project is to establish the Morocco Cleaner Production Centre, so as to achieve a critical mass of awareness, expertise and experience in the application of cleaner production in industry.

Initially, the outputs foreseen were the following:

- Output 1: Establishment of the Centre and start of its activities.
- Output 2: Dissemination of Information on cleaner production in the Morocco Republic.
- Output 3: Practical demonstrations (case studies) of the cleaner production approach undertaken.
- Output 4: Training programmes implemented.
- Output 5: Research work on prevention of industrial pollution initiated in selected research institutes.
- Output 6: Presentation of Documentation describing the Morocco experience in cleaner production , along with a waste audit reduction manual.

- Output 7: Increased awareness among key policy-makers and financial institutions of the advantages of applying preventive approaches to industrial pollution in order to facilitate the adoption of appropriate environmental policies.

The budget (for a project period of five years) is US\$ 1.449.790.

### **1.2.3 Present Status**

In December 1999, a letter of agreement was signed with Switzerland and US\$ 313.000 was transferred to UNIDO. An initial tripartite review meeting (composed of a Centre s/m, a representative of the Moroccan Ministry of Environment and of a s/m of UNIDO) was held at the centre at the beginning of 2000.

## **2. THE IN-DEPTH EVALUATION**

### **2.1 Purpose, scope and method**

#### **2.1.1 Purpose**

***This joint independent in-depth evaluation has been requested by seco, who is funding the project.. Its purpose is to enable Switzerland and UNIDO to take well based decisions on the future orientation of the programme and learn lessons for planning future projects of this nature.***

#### **2.1.2 Scope**

An in-depth evaluation is an activity in the project cycle that attempts to determine as systematically and objectively as possible the relevance, efficiency, effectiveness, impact and sustainability of the project. The evaluation will assess the achievements of the project against its objectives, including an examination of the relevance of the objectives and of the project design. It will also assess to what degree the assumptions/risks as identified in the project document held true/occurred and identify other factors that have facilitated or impeded the achievement of the objectives. While a thorough review of the past is in itself very important, the in-depth evaluation is expected to lead to recommendations and lessons learned for the future.

In particular, the in-depth evaluation will pay attention to the following issues on:

#### ***Relevance***

- Is there demand for CP services in the country? If so, in which sectors and how.
- Is the concept of a Centre the best strategy to support the application and dissemination of CP? Which are the options and how it could be improved the system
- The audits performed in selected enterprises and the derived recommendations of improvement, were useful for both, Centre and factories?
- The CMPP has identified and selected a number of industries, which are interested to introduce CP in their production sites. Are these industries, the right selection for introducing CP? What is their impact (social, economic, environment)?

The objectives of the programme are:

- To propose specific options for CP, including an environmental policy and market strategy.
- To suggest a methodological approach for the assessment, technical descriptions of the CP-Options.

- To propose potential technology transfer and a feasibility assessment.
- Is the centre capable to do that? If not, what are the recommendations to achieve the objectives?
- Is the centre complying with Business plan? If not, what could be done to improve the sectoral strategy and the plan of actions for implementing the business plan?
- Is currently the centre capable of resource Mobilization? If not what could be done for improvement.
- How sustainable is the Centre (institutionally, financially and technically)?

### ***Efficiency***

- Have the inputs provided by UNIDO (expertise, training) been of good quality?
- How useful were the two National Seminars.
- Has the Centre benefited from being part of the NCPC programme/network?
- How adequate are the success indicators applied by the Centre?

### ***Effectiveness***

- Which services of the Centre are actually more utilized (information – training- technical advice/CP assessment - policy advice...)?
- To what degree the CP assessors trained by the centre actually conduct CP assessments?
- Which new/additional services are evolving following the assistance given?
- To what degree does the Centre manage to market the CP concept through cooperation with other organizations/consultants/universities...?

### ***Impact***

- To what degree the companies implement the measures resulting from CP assessments
- To what degree the companies continue implementing the CP options after completion of the NCPC intervention?
- What is the economic and environmental impact?
- Is there any evidence of CP in industry outside of direct NCPC interventions at company level?

### ***Sustainability***

- What is the professional and managerial competence to sustain the activities?
- What are the sources of funding, current and potential?
- What arrangements can be made to strengthen the sustainability of the Centre?

## **2.1.3 Method**

The evaluation team will:

- Study basic project documentation provided by UNIDO Headquarters.
- Be briefed by the Office of ADM/EVA of UNIDO on evaluation methodology.
- Interview UNIDO staff that has been involved in the management of the project since the beginning.
- Interview the Director and staff of the centre as well as the chairmen of their respective Steering Committees.
- Study documents available in the centre.
- Visit and interview of persons in the country that received training from the Centre, and companies that were the subjects of in-plant assessments by the Centre.

- Interview other stakeholders and cooperating organizations or beneficiaries, such as ministries, universities, regional or local administrations, funding agencies, consulting companies, etc.

Although the evaluation team should feel free to discuss with the authorities concerned all matters relevant to its assignment, it is not authorized to make any commitment on behalf of UNIDO or of the donor.

## **2.2 Composition of the evaluation team**

A team of three persons will evaluate the centre. A nominee of the donor, a nominee of UNIDO and a person nominated by the Moroccan Authorities. The nominee of the donor will act as the team leader.

The nominees should have the following backgrounds and qualifications:

- The nominee of the donor should have a technical or industrial background and experience in cleaner production or in related fields. Good knowledge of French.
- The nominee of the Government should have good knowledge of the industry-related institutional and policy frameworks of the country;

The nominee of UNIDO should have a good knowledge of project evaluation, NCPC programme and knowledge of French. The members of the evaluation team should not have been directly involved in the design or implementation of the project and will act in their personal capacities

## **2.3 Timetable and reporting**

The evaluation will be carried out during January – February 2003. The mission in Morocco will be carried over seven days, not including travel time.

The team leader will have three days to prepare and finalize the evaluation report.

The report will be written in English.

The evaluation report should follow a standard structure. In order to ensure that the report considers the views of the parties concerned and is properly understood and followed up by them, it is required that the draft conclusions and recommendations of the report be presented to and discussed with the Project Manager, other staff concerned with the NCPC programme and a representative of donor. The report is the product of an independent team of persons acting in their personal capacities. It is up to that team to make use of the comments made by the parties involved and to reflect them in the final report. However, the evaluation team is responsible for reflecting any factual corrections brought to their attention prior to the finalization of the report.

The final joint report is to be submitted in English on a diskette (in Word) to the Evaluation Services Branch of UNIDO by mid April 2003.

## Annex II

### Programme de la mission d'évaluation - du 01 au 10 février 2003 - CMPP - Maroc

#### **Samedi 01 fév. Début de la mission et arrivée des experts internationaux**

Matin

Arrivée à Casablanca des évaluateurs (Transfert de l'Aéroport à l'hôtel Idou Anfa par M. Skalli)

A. M.

#### **Dimanche 2 fév. Préparation du déroulement de la mission**

Matin

Libre

*Pause déjeuner*

A. M.

**14H30** : Réunion au CMPP : évaluateurs, staff CMPP au siège du CMPP

#### **Lundi 3 fév.**

**Réunions avec les institutionnels et réseau d'experts du CMPP**

**08H30** : Réunion avec le Président du CMPP M. Majid Boutaleb au siège du CMPP

**09H30** : Réunion avec le réseau d'experts du CMPP résidents à Casablanca au siège du CMPP

Matin

**10H30** : Réunion avec les représentants de l'institution hôte CGEM à leur siège à Casablanca

*11H30* : Départ pour Rabat

*Pause déjeuner*

**13H00** : Déjeuner à Rabat avec Son Excellence M. Daniel Von Muralt, Ambassadeur de Suisse au Maroc

**15H00** : Réunion avec les réseau d'experts nationaux du CMPP résidents à Rabat

A. M.

**17H00** : Réunion avec les représentants du Secrétariat d'état à l'Environnement à Rabat

**18H00** : Réunion avec les représentants du Programme Intégré de l'ONUDI à Rabat

*19H30* : Retour à Casablanca

#### **Mardi 4 fév.**

**Rencontres avec les entreprises accompagnées par le CMPP région Casa - Rabat**

**10H00** : CPCM - Casablanca

**11H00** : Colorado - Casablanca

*Pause déjeuner*

**14H30** : SEVAM - Casablanca

A. M.

**16H30** : Chimichrom - Casablanca

**18H00** : Réunion avec FENIP

#### **Mercredi 5 fév.**

**Rencontres avec les entreprises accompagnées par le CMPP région Casa - Rabat**

Matin

**09H30** : Filroc - Salé

<i>Pause déjeuner</i>	
	<b>15H30 : Réunion avec les représentants du Ministère de l'Industrie à Rabat</b> <b>16H45 : Départ pour l'aéroport Mohammed V - vol pour Agadir à 17h30</b>
<i>Pause déjeuner</i>	
<b>Jeudi 6 fév.</b>	<b>Rencontres avec les entreprises accompagnées par le CMPP région Agadir</b>
Matin	<b>10H00 : LGMC - Agadir</b>
<i>Pause déjeuner</i>	
A. M.	<b>14H30 : Belma - Agadir</b> <b>16H00 : Réunion avec l'Union régionale de la CGEM, relais du CMPP dans la région</b>
<b>Vendredi 7 fév.</b>	<b>Rencontre avec entreprises et fédérations professionnelles</b>
	<b>06H30 : Retour à Casablanca</b>
Matin	<b>09H00 : Managem - Casablanca</b> <b>10H00 : Sonasid - Casablanca</b> <b>11H00 : Cafés Dubois - Casablanca</b>
<i>Pause déjeuner</i>	
A. M.	<b>14H00 : Réunion avec le staff du Centre</b> 14h30 : Réunion individuelle avec le personnel du CMPP <b>17H30 : Réunion avec quelques membres du Comité Directeur</b>
<b>Samedi 8 fév.</b>	<b>Réunion de synthèse</b>
	<b>06H30 : Arrivée de Mme Azza Morssy (BS)</b>
Matin / A.M.	Réunion de synthèse du comité d'évaluation <b>14H00 : Réunion avec Mme Azza Morssy (BS)</b>
<b>Dimanche 09 fév.</b>	<b>Réunion de Débriefing</b>
Matin	<b>09H00: Réunion de Débriefing au siège du CMPP, experts et staff du centre</b> <b>11H30 : Départ de M. Mauch pour l'aéroport</b>
<b>Lundi 10 fév.</b>	<b>Réunion à l'Ambassade de Suisse et Fin de la mission</b>
<b>Matin</b>	<b>09H00 : réunion de présentation de la synthèse de la mission à son Excellence l'Ambassadeur de Suisse et fin de la mission</b>



**Annex III****List of persons met**

Lieu et date	Nom	Titre et Institution
Vienne Janvier 2003	M.me Azza Morssy	UNIDO Administrateur responsable du projet
“	M.Ned Clarence Smith	UNIDO
“	M.Mohamed Eisa	UNIDO
“	M.me Tezer Ulusay De Groot	UNIDO
Zurich Janvier 2003	M.Martin Fritsch	EMAC, environmental management&communication
“	M.Marcel Gauch	Project Manager EMPA, Swiss Federal Laboratories for Materials Testing and Research
“	M.Heinz Werner Boeni	Program Manager EMPA
“	M.Francois Laurent	Spécialiste en gestion urbaine, URBAPLAN (Développement, urbanisme environnement)
“	M.Hans-Peter Egler	seco Head, Trade and Clean Technology Co-operation
“	M.me Jeanine Kuriger	seco Programme Officer
Casablanca 2.2.03	M. Majid Boutaleb	Président CMPP
“	M. Mourad Skalli	Directeur Général CMPP Centre de Production Propre
“	M.me Asmaa Tazi	Directeur Général adjoint CMPP
“	M.me Meryem Aaziz	Directeur Technique CMPP
“	M.me Samira Amil	Secrétaire du CMPP
Casablanca 3.2.03	M.Khalid Missaoui	Directeur Euro-Symbiose Expert National CMPP
“	M.Abdesselame Hajjani	Directeur Général CHEREX s.a.r.l. Expert National CMPP
“	M.Khalid Abaroudi	Secrétaire Général CGEM Confederation Générale des Entreprises du Maroc
Rabat 3.2.03	Excellence M. Daniel von Muralt	Ambassadeur de Suisse au Maroc
“	M.Claude Duvoisin	Conseiller d’ambassade Ambassade de Suisse
“	M.Mohamed Belhaj Soulami	Expert conseil Clean Tech Expert national CMPP
“	M.Yvan Gravel	Expert conseil Clean Tech
“	M.Driss Zakarya	Consultant E.D.I.C. s.a.r.l. Expert National CMPP
“	M.Ahmed Bouhaouli	Secrétaire Général Dépt.ment Environnement Ministère Aménagement du Territoire, de l’Urbanisme, l’Habitat et Environnement
“	M.me Serena Massimi	Directeur Unité Promotion des Investissements ONUDI au Maroc
Casablanca 4.2.03	M.Khalid Lahlou Mimi	Directeur Général CPCM Compagnie de Produits Chimiques du Maroc
“	M.Farid Berrada	Président Directeur Général Colorado Peintures

“	M.Abdelouafi Digua	Ingénieur Attaché de Direction SEVAM
“	M.El Abbadi	Responsable Système Qualité SEVAM
“	M.Ben Saih Brahim	Directeur Général CHIMICHROM s.a.
“	M.Sentissi El Idrissi Hassan	Président a.i. FENIP et Président COPELIT
“	M.Najib Chaoui	Secrétaire Général FENIP Fédération Nationale des Industries de Transformation et de Valorisation des produits de la Pêche auprès de la CGEM
“	M.M.Fouad Louhah	Directeur Général Union Marée
“	M.El Alaoui	Président Association Exportation Poisson frais
“	M.Abderrafie Megzari	Directeur Général “La Monegasque” Kenitra
Rabat 5.2.03	M.Jean Jacques Dolle	Directeur de Teinture “FILROC” Textile
“	M.Abderrahim Chakour	Chef Division Industries Chimiques et Parachimiques, Ministère de l’Industrie, du Commerce et des Télécommunications
“	M.Taoufiq Moucharraf	Chef du Service Coopération Industrielle, Direction Etudes et Planification Industrielle, Ministère de l’Industrie, du Commerce et des Télécommunications Coordinateur National Programme Intégré de l’ONUDI
“	M.Rachid El Bouazzaoui	Chef du Service Matériaux de Construction, Direction de la Production Industrielle, Ministère de l’Industrie, du Commerce et des Télécommunications
Agadir 6.2.03	M.me Fauzia Bendaria	Responsable qualité LGMC (Les grandes marques et conserveries chériffiennes) Traitement des poissons
“	M.Lahcen El Hamdaoui	Directeur Laboratoire LGMC
“	M.Amin Lambarki	Ingénieur Coordinateur problèmes techniques LGMC
“	M.Arnaud Marty	Directeur Général BELMA (Conserveries de poissons)
“	M.Majid Joundy	Président Directeur Général BELMA Président UNICOP (Union Nationale des Industries de la Conserve de poisson) Président Union Régionale Souss Massa Daraa de la CGEM
Casablanca 6.2.2003	M.Abdelhakim Essalim	MANAGEM Responsable Coordination Qualité Environnement
“	M.Mohamed Aziz Derj	SONASID (Société du Group ONA) Directeur Financier et Support
“	M.M. Faiz	SONASID Responsable Qualité, Sécurité et Environnement, Site Nadour
“	M.Lamtoueq	SONASID Stagière
“	M.Massalia Ousmane	SONASID Responsable qualité SiteJarf
“	M.Amine Moujahid	SONASID Responsable Qualité Site Nadour
“	M.Abdelilah Hjiej	Les Cafes Dubois Directeur technique et de production
“	M.Mouhcine Ayouché	Directeur Délégué CGEM
“	M.Abdelhamid Jbilou	Directeur Délégué APC Association Professionnelle des Cimentiers
“	M.Hassan Hakim	Directeur de l’Institut OCP (Office Cherifien des Phosphates)

## Annex IV

# ORGANISATION DES NATIONS UNIES POUR LE DEVELOPPEMENT INDUSTRIEL

## DESCRIPTION DES SERVICES DE FORMATION, D'INFORMATION ET DE GESTION RELATIVES A LA PRODUCTION PLUS PROPRE, DEMANDES POUR LE CENTRE MAROCAIN DE PRODUCTION PROPRE DE LA PART DU CENTRE DE REFERENCE

### 1. SOMMAIRE DU PROJET

Le gouvernement suisse, le gouvernement marocain et l'Organisation des Nations Unies pour le Développement Industriel (ONUDI) viennent de finaliser un accord sur un projet financé par le gouvernement suisse et géré par l'ONUDI, sur la création du Centre Marocain Production Propre (CMPP). Ce centre se réunira au réseau de 15 Centres Nationaux de Production plus Propre (CNPP) déjà créés depuis 1995 dans le cadre du programme conjoint entre ONUDI et le Programme des Nations Unie pour l'Environnement (PNUE).

Le CMPP fera office de point focal au niveau national, capable de jouer un rôle de catalyseur en matière d'amélioration des performances environnementales et économiques de l'industrie marocaine. Le CMPP travaillera principalement avec les PME/PMI. Par le biais du centre, et de son action en réseau avec d'autres partenaires nationaux impliqués dans une production plus propre, une infrastructure et des alliances nationales seront mises en place. Ceci facilitera la diffusion de la notion de production plus propre.

Les six principales activités du CMPP seront:

*Sensibilisation:* Grâce à des campagnes de sensibilisation (séminaires, conférences, ateliers, réunions individuelles, etc.), le CMPP expliquera aux principaux acteurs impliqués dans la production plus propre ce que c'est et quels en sont les avantages. Les principaux acteurs contactés par le CMPP seront des responsables industriels, des associations commerciales, les gouvernements (aussi bien les ministères de l'environnement que de l'industrie, de l'économie, du travail, voire d'autres ministères), des institutions financières (des banques et d'autres institutions en mesure de souscrire à des investissements en matière de production plus propre), des institutions d'enseignement supérieur (universités et collèges techniques), des ONG impliquées dans des activités concernant l'environnement, etc. Cette activité sera extrêmement intense au commencement de cette première phase opérationnelle, s'amoindrissant par la suite.

*Evaluations sur site:* Un élément important des travaux du CMPP sera les évaluations sur site. Le CMPP aura initialement recours à ces évaluations afin de faire la démonstration pratique de la notion de production plus propre, de la manière dont celle-ci peut s'appliquer à un quelconque secteur industriel du pays, ainsi que des possibilités de tirer profit de la réduction des rejets. Les démonstrations sur site industriel créeront des exemples de mise en œuvre réussie et auront une incidence positive directe sur l'environnement. Dans le temps, l'aspect démonstration des évaluations sur site deviendra moins important, alors que leur importance sous l'angle de l'assistance directe aux clients industriels des CNPP ira croissant.

Formation: L'incidence des évaluations sur site sera à court terme si la formation est négligée et si les sociétés ne saisissent pas le concept ou les avantages de celui-ci et reviennent à la situation antérieure. Par conséquent, la formation du personnel des sociétés qui prennent part aux projets de démonstration sur site est une part importante de ces projets. La formation sera également mise en œuvre dans le cadre d'ateliers et de séminaires destinés à des groupes cibles spécifiques. Le groupe principal sera constitué par l'industrie, mais les organisations de branche, les responsables publics, les instituts de recherche, les institutions financières, les universités et les consultants peuvent également être inclus. De surcroît, des experts nationaux seront formés dans des domaines spécifiques, tels que, par exemple, la promotion des investissements, la politique en matière de production plus propre, la gestion de données, les systèmes de gestion de l'environnement, etc..

Investissements dans les technologies de production plus propre: Le CMPP créera une capacité de base dans la promotion de projets d'investissements en matière de technologies de production plus propre, pour faciliter le transfert de technologies plus propres. Un certain nombre d'experts nationaux sera formé à l'identification de projets d'investissements dans le domaine de la production plus propre, ainsi qu'à l'assistance aux sociétés dans la formulation de leurs demandes d'investissement. Les projets identifiés seront soumis, selon le cas, aux institutions d'investissement nationales (en particulier le Fonds de Dépollution Industrielle - FODEP), régionales et internationales. Les sociétés auront, de la sorte, accès à une aide financière qui leur permettra d'obtenir les investissements requis pour l'introduction de techniques et de technologies de production plus propre. Initialement, cette activité sera liée étroitement aux évaluations sur site.

Diffusion de l'information: Cette composante est cruciale pour la création d'un réseau de production plus propre, à la fois au niveau national et international. Au niveau national, le CMPP apportera une information technique (par exemple, les technologies disponibles pour résoudre les problèmes d'environnement dans le cadre de certains processus), partagera son expérience avec les partenaires intéressés par le biais de la présentation d'études de cas en matière de production plus propre, et assurera la promotion de ses propres activités. Au niveau international, les meilleures des informations recueillies seront partagées avec les autres CNPP à travers le réseau de l'ONUDI. Le centre, comme tous les CNPP, bénéficiera d'un accès Internet, grâce auquel il pourra accéder aux pages d'accueil ONUDI/PNUE, qui comportent des informations sur la production plus propre (études de cas, études sectorielles et technologies), au site du programme CNPP, ainsi qu'au courrier électronique afin de faciliter les débats et les échanges d'information.

Conseils sur les politiques: La production plus propre ne deviendra une pratique industrielle générale que si une réglementation efficace en matière d'environnement existe. Ceci n'implique non seulement des mesures administratives, telles que l'octroi d'autorisations, mais également des mesures économiques, y compris la mise en place de frais d'élimination des déchets et de coûts des services publics tels que l'approvisionnement en eau ou en électricité qui sont réalistes. Des incitations destinées à l'industrie doivent également s'inscrire dans le cadre de cette politique. Sur la base de l'expérience acquise grâce à ses diverses activités, et avec l'assistance d'un groupe de travail, le CMPP préparera divers documents concernant les politiques, démontrant comment la pollution peut être limitée pour un coût raisonnable par une mise en œuvre cohérente des concepts de production plus propre, à soumettre aux preneurs de décision appropriés. Le CMPP fera également office de partenaire de discussion pour les instances locales ou nationales compétentes en matière d'environnement.

Afin de garantir la viabilité financière à long terme du centre, un plan d'affaires a déjà été élaboré. Il comporte une analyse du marché et de la concurrence, une stratégie en matière de service, la structure organisationnelle du centre, des plans de mise en œuvre et financiers, ainsi qu'une stratégie pour la viabilité du CMPP.

Toutes les activités du projet seront entreprises par le personnel national du centre. Ce personnel sera soutenu par un centre de référence suisse, particulièrement pendant les premières années du projet, par des experts nationaux et internationaux, et par l'ONUDI et le PNUE.

Le CMPP sera accueilli par la Confédération Générale des Entreprises du Maroc (CGEM). Afin de guider le travail du centre et d'encourager une coopération nationale fiable, un Conseil d'Administration et une Assemblée Générale, impliquant les principaux détenteurs d'enjeux nationaux et internationaux, ont été créés.

Le Centre sera financé par l'ONUDI pendant cinq ans. Durant toute cette période, et particulièrement pendant les premières trois années, le Centre aura le soutien d'un centre de référence suisse. Les services demandés du centre de référence sont décrits ci-dessous.

## **2. LA PORTEE DES SERVICES DEMANDES DU CENTRE DE REFERENCE**

Le centre de référence devra fournir une assistance au directeur et au personnel du centre et aux experts nationaux choisis par le centre, sur les sujets suivants relatif à la production plus propre:

- la définition et la mise en œuvre de **campagnes nationales de sensibilisation**;
- la définition et la mise en œuvre de **programmes de formation**;
- l'organisation et la mise en œuvre de **programmes de démonstration** entreprises principalement à travers des **évaluations sur site**;
- la diffusion d'**informations techniques**;
- la promotion d'**investissement dans les technologies plus propres**;
- la formulation de conseils sur **législations et politiques**.

En outre, le centre de référence devra fournir (où possible), sur demande du directeur du CMPP, **une assistance technique ad-hoc**.

## **3. ACTIVITES INITIALES A ENTREPRENDRE PAR LE CENTRE DE REFERENCE**

Les activités que le centre de référence devra entreprendre pendant les premiers 18 mois du projet sont décrites ci-dessous. Les activités ultérieures seront définies pendant le projet et dépendront de l'évolution du projet. Les activités nécessitent que le centre de référence effectue des missions au Maroc ainsi que des travaux au siège. Nous estimons que les activités des premiers 18 mois nécessiteront entre 8 et 12 missions au Maroc et 50 et 65 hommes-jours de la part du centre de référence.

Si le personnel du centre de référence n'a pas les expertises requises, particulièrement en ce qui concerne les demandes de la part du Centre pour une expertise sectorielle, le centre devra sous-traiter des experts externes.

### **A. Gestion du Centre**

Le centre de référence devra assister le directeur à initier et à gérer le Centre dans la façon la plus efficace. En particulier, le centre de référence devra:

- a. Evaluer les capacités du nouveau directeur et de son personnel et leur donner une formation de base, prenant les formations déjà entreprises pour d'autres centres comme base;
- b. Assister le directeur dans la préparation d'un plan de travail pour la première année du centre;
- c. Conseiller le directeur sur toutes questions liées à la gestion du centre.

## **B. Sensibilisation**

Le centre de référence collaborera avec le directeur du CMPP dans la définition de campagnes de sensibilisation et assistera dans leur mise en œuvre. En particulier, le centre de référence devra entreprendre les tâches suivantes:

- a. Assister le directeur à définir les acteurs clés sur le thème de la production plus propre au niveau national et à définir une stratégie nationale pour la sensibilisation de ces acteurs sur la production plus propre;
- b. Assister le personnel du CMPP dans la préparation et l'organisation au niveau national d'événements pour la sensibilisation;
- c. En coordination avec le CMPP, organiser des séminaires pour sensibiliser l'industrie au thème de la production plus propre, et y prendre part;
- d. Assister le directeur dans l'élaboration de stratégies de marketing pour les services du CMPP.

## **C. Formation**

Le centre de référence devra:

- a. En coordination avec le CMPP, adapter aux conditions marocaines le matériel de formation générique sur la méthodologie ONUDI/PNUE à utiliser pour entreprendre une évaluation de production plus propre sur site;
- b. Assister le CMPP à choisir les experts nationaux qui prendront part dans les premiers ateliers de formation;
- c. Assister le CMPP à organiser les ateliers de formation et entreprendre la formation elle-même. La formation comprendra l'inclusion des experts nationaux dans les équipes utilisées dans les programmes de démonstration (voire ci-dessous);
- d. Assister le CMPP à organiser les ateliers de formation sur la méthodologie à utiliser pour entreprendre les audits rapides, et entreprendre la formation elle-même (cette formation comprendra la participation du centre de référence dans des audits rapides).

## **D. Programmes de Démonstration**

Le centre de référence devra assister le CMPP à initier les programmes de démonstration. En particulier, le centre devra:

- a. Assister le CMPP à choisir les secteurs ou sous-secteurs industriels ou les zones géographiques sur lesquels les programmes se concentreront et le nombre d'entreprises à essayer d'inclure dans chaque programme;
- b. Préparer un avant-projet d'un manuel sur les évaluations sur site de production plus propre, basé sur le manuel générique ONUDI/PNUE sur le même sujet mais rendu spécifique au contexte marocain;
- c. Assister le CMPP à tenir des séminaires pour les entreprises dans les secteurs/sous-secteurs ou zones choisies (le matériel préparés pour de tels séminaires par autres Centres peut être utilisé après les modifications nécessaires);
- d. Avec le CMPP visiter les sites qui se sont déclarés intéressés à prendre part dans les programmes de démonstration et assister le CMPP à choisir les sites qui prendront effectivement part;
- e. Entreprendre en tant que chef d'équipe les évaluations sur sites pour les entreprises incluses dans le premier programme, utilisant la méthodologie élaborée sous le point b. Assister dans les évaluations sur site du deuxième programme en tant que membre de l'équipe. Assister dans les ultérieurs programmes sur demande du CMPP. Dans chaque cas, à part les

membres du centre de référence les équipes comprendront le personnel du CMPP et des experts nationaux formés précédemment (voir ci-dessus);

- f. Assister le CMPP et les experts nationaux à fournir des informations techniques aux entreprises prenant part dans les programmes;
- g. Prendre part dans deux des ateliers intermédiaires qui se tiennent pendant chaque programme où les entreprises et les équipes revoient ensemble l'état de l'avancement des travaux et discutent les prochaines étapes à entreprendre ;
- h. A la fin de chaque programme auquel le centre de référence prend part prendre part à l'atelier de travail final et assister le CMPP à tenir des séminaires où les résultats des évaluations sont partagés avec le nombre plus élevés d'entreprises dans les secteurs/sous-secteurs/zones couverts par les programmes;
- i. Assister le CMPP à préparer un rapport sur chaque évaluation à laquelle le centre de référence a pris part, suivant un format standard, et à rentrer les résultats des plus intéressantes dans la banque de données ONUDI ;
- j. Finaliser le manuel général sur les évaluations sur site.

### **E. Diffusion d'informations techniques**

Le centre de référence devra assister le CMPP à fournir à ses clients des informations détaillées techniques sur les technologies plus propres ainsi que toutes autres informations techniques sur, ou liées au, thème de la production plus propre. En particulier, le centre de référence devra:

- a. établir des contacts entre le CMPP et des fournisseurs internationaux de technologies plus propre;
- b. former le personnel du Centre sur la sélection des technologies plus propres les plus appropriées.

### **F. Promotion d'investissement dans les technologies plus propres**

Le centre de référence devra fournir au CMPP une assistance dans la création d'une capacité dans le Centre et dans des experts nationaux pour porter aide à ses Clients dans l'obtention des fonds d'investissement dans les technologies plus propre. En particulier, le centre de référence devra:

- a. Assister le CMPP à sélectionner des experts nationaux à former;
- b. Organiser les ateliers de formation pour ces experts et le personnel du Centre sur l'identification de projets acceptables d'investissements en technologies plus propre ainsi que sur la préparation de demandes d'investissements. Entreprendre la formation elle-même;
- c. En collaboration avec le CMPP, mettre au point un format à être utiliser pour les demandes d'investissements en technologies plus propre.
- d. Assister le CMPP à préparer les premières demandes d'investissement.

### **G. Conseils sur la législation et les politiques**

Le centre de référence devra fournir au CMPP une expertise internationale dans le domaine de la législation et les politiques relatives à la production plus propre et plus généralement à la protection de l'environnement. En particulier, le centre de référence devra:

- a. Assister le CMPP à établir et à gérer un groupe de travail sur la législation et les politiques pour la production plus propre;
- b. En coopération avec le CMPP, organiser au niveau national le premier atelier de travail sur la législation et les politiques pour la production plus propre, et y prendre part;
- c. Assister le CMPP à finaliser le rapport du groupe de travail.

## Annex V

### **Evaluation du Centre Marocain pour la Production plus propre (CMPP)**

#### Questionnaire pour les Clients

Nom de l'entreprise	.....		
Année de fondation de l'entreprise	.....		
Genre d'activité	.....		
Nombre d'employés	.....		
	Question	Réponse	
1.	Comment avez-vous appris de l'existence et des services du Centre Marocain de Production Propre ?	? A travers le Centre même ? Ministère ou autres Institutions collègues/ amis/ autre compagnie / presse	
2.	Quand avez-vous appris de l'existence du CMPP ?	Année:..... Mois:.....	
3.	Quel sorte de service avez-vous reçu par le Centre, et , si oui, à quel prix?	Formation du personnel Evaluation technique d'un processus de production Evaluation complète de la compagnie Assistance pour trouver des sources financières	<input type="checkbox"/> Prix:\$..... <input type="checkbox"/> \$..... <input type="checkbox"/> \$..... <input type="checkbox"/> \$.....
4.	Combien de fois et pour combien du temps au total avez vous eu des rencontres de travail avec les consultants du CMPP?	Nr. Rencontres ..... Temps total passé avec les consultants du Centre .....	
5.	Est-ce que avez vous reçu les rapports techniques dans des délais appropriés?	Oui: <input type="checkbox"/> Non: <input type="checkbox"/>	
6.	Comment jugez-vous l'utilité des services reçus par votre entreprise?	- Très utile <input type="checkbox"/> - Satisfaisant <input type="checkbox"/>	- Pas très utile: <input type="checkbox"/> - Inutile: <input type="checkbox"/>
7.	Comment jugez-vous la connaissance professionnelle des consultants du Centre en relation à votre secteur de production?	- Excellente <input type="checkbox"/> - Bonne <input type="checkbox"/>	- Partielle: <input type="checkbox"/> - Insuffisante: <input type="checkbox"/>



8.	Avez-vous l'intention d'utiliser encore les services du Centre, si ces services seraient gratuits, ou seulement s'ils coûteraient un prix modéré ?	Gratuit		Payant	
		Oui: <input type="checkbox"/>	Non: <input type="checkbox"/>	Oui: <input type="checkbox"/>	Non: <input type="checkbox"/>
9.	Quelles genre d'amélioration avez-vous réalisé ou bien planifiez, comme conséquence de conseils reçus par le Centre? (économiser énergie, eau, matériaux, etc.), A quels coûts ? (investissements ou bien dépenses annuels)	Aucune mesure			
		Mesures réalisées			
		Mesures planifiées			
		Investissements	\$ par an: .....	\$ par an : .....	
10.	Dans le cas où vous avez pris des actions basées sur les recommandations des consultants (voir sous point 9); quels sont les bénéfices que vous avez réalisés ?	Monétaires: \$/an..... Autre bénéfiques: .....			
11.	Quels aspects des services du Centre appréciez-vous principalement?:				
12.	Quel aspect des services du Centre vous n'appréciez pas?				
13.	Est-ce que le Centre suit les recommandations faites à votre entreprise après avoir délivré le rapport final?	Oui <input type="checkbox"/>	Non <input type="checkbox"/>		
14.	Y-a-t'il d'autres institutions dans votre région qui offrent des services similaire à ceux du CMPP ?	Oui <input type="checkbox"/>	Non <input type="checkbox"/>		
15.	Recevez vous périodiquement un bulletin avec informations sur les activités du Centre? Quels genre d'informations vous aimeriez recevoir?	Oui <input type="checkbox"/>	Non <input type="checkbox"/>		
16.	Avez vous des recommandations en ce qui concerne le future de l'approche «production plus propre» au Maroc, y, en particulier concernant rôle du centre ? .....				
17.	Avez vous participé, ou quelqu'un de vos employés, à de séminaires organisés par le Centre ? Si oui, quels ?				

## Annex VI

### Valuation of the answers given by the entrepreneurs to the questionnaire

The following conclusions can be drawn by the answers received to the questionnaires:

#### **Question 1-2. How did you know and when the existence of the Centre?**

85% of the enterprises answered, through the promotion made by the Centre or the professional federations.

15% through the Ministry.

#### **Question 3. Which services have you received from the Centre?**

85% in-plant technical assessments

15% information on possible financing sources

23% training of personnel

In the case of training, all the training given by the Centre has been paid by the companies. Some of the companies received more than one service by the Centre, i.e. training and technical assessment, but only the training activities have been paid.

#### **Question 4. How many times did you meet the Centre's consultant?**

The meetings go from a minimum of 3 up to 30, but in one single company.

The average is 4 to 6 meetings with an average duration 4 hours for each meeting.

Some entrepreneurs appreciated the participation of the consultants, but found that the technical experience was limited in relation to the production process sector of the enterprise.

#### **Question 5. After the visit of the consultant, were the technical reports received in the appropriate time?**

30% of the entrepreneurs stated that the report was received too late.

However, it should be noted that among them, one entrepreneur during the interview said to the mission that he did not receive the report, which, at the contrary, the CMPP demonstrated was sent by electronic mail four months before!!!

The evaluation mission is of the opinion that all the technical reports have to be presented and discussed personally by the consultant and not just sent by mail. This point will be reflected in the recommendations to the CMPP.

#### **Question 6. Your appreciation of the services received?**

All entrepreneurs found the services useful.

#### **Question 7. How do you rate the technical knowledge of the consultant?**

61% good, 7% very good,

32% of the enterprises rated as limited the professional and technical knowledge of the consultants, in relation to the specific production process.

No mention it has been made in the answers about the language knowledge of the international consultants, but in some cases it has been reported to the evaluation team that it was not sufficient at working level.

**Question 8. Will you utilize further the services of the Centre?**

78% answered yes, also in case the services have to be paid.

15% answered yes, but only if free of charge.

7% answered do not know yet.

**Question 9. Which improvements did you make or intend to realize, after the advice received by the Centre?**

38% of the companies responded positively and said they had already realized some improvements after the advice received from the CMPP, mainly regarding saving water, energy, raw materials and utilization new equipment.

46% answered that they are planning interventions after the advice of the Centre. In this figure are included also the companies, which have already realized some suggested actions and are planning additional actions.

46% of the companies do not foresee any action.

The above indicates that the Centre has to continue its efforts in awareness rising.

**Question 10. In case you have already taken some actions suggested, which are the benefits you have realized?**

Only 15% answered to this question, indicating some saving regarding the water and the energy. In another case it was reported the improvement of the productivity.

However, it is interesting to note that in no answer is indicated the monetary quantification of the benefits realized.

This answer shows that the interest in introducing measures respectful of the environment are still very low and that the CMPP has to make a larger sensitisation, in order to make evident to the entrepreneurs the economic advantages possible in competitiveness and productivity.

**Question 11. What did you like best of the services of the Centre?**

The services offered have been generally appreciated, particularly:

69% of the enterprises which answered, appreciated the diffusion of information, awareness raising and the possibility to access the information.

46% appreciated the technical assistance received

46% the training received. It has to be noted that all the training given by CMPP was against payment.

15% expressed interest for the financial assistance and advice received from the Centre for realizing investments in cleaner production measures.

**Question 12. What you did not like of the services of the Centre?**

All the entrepreneurs, but one, did not indicate anything. The one who answered that the technical report prepared after the in plant assessment was delivered too late and, in the meantime, the situation in the factory had changed.

**Question 13. Has the Centre made follow up regarding the proposals made for operational changes or investments?**

31% answered yes.

46% answered no.

23% did not answer, because they received by the CMPP only assistance in training of personnel. However, also when only training has been provided, a follow up is necessary to ascertain whether the training given is applied and whether there are further needs.

**Question 14. Do you know other institutions in the country, which offer assistance and services similar of those of CMPP?**

77% answered no.

8% answered do not know.

15% answered yes, but without giving any further indication.

**Question 15. Do you receive periodical information from the CMPP?**

**Which kind of information you would like to receive?**

77% answered no.

23% answered yes.

Since the CMPP is distributing periodically a newsletter to all the enterprises it difficult to understand why only one quarter of the companies say to receive it. One explanation could be that the publication has to be made more attractive for the companies.

The information that the enterprises would like to receive is:

- News on standards and rules on cleaner production and environment.
- Information on seminars and workshop foreseen on environmental related activities.
- News on the activities of the CMPP.
- Information on new available technologies in their field of production.
- Mechanisms of financing for environmental projects.

**Question 16. Suggestions for a better divulgation of the Cleaner Production concept in Morocco and the role of the Centre.**

- More careful choice of consultants for assessing the enterprises in the promotion of the cleaner production concept. The professional knowledge of some consultants is limited in the production process they have to assess.
- More financial advise to SME for investments in CP and related assistance.
- More environmental awareness raising in CP.
- More information in the field of quality and security related to environmental protection
- More continuous direct contact with the enterprises.
- Follow up and development of environment/ecology matters in Morocco.
- Better follow up of the technical recommendations made to the enterprises, after the in plant assessment. Monitoring of the results is imperative after the technical implementation of the measures proposed.
- Provide assistance to the enterprises from the identification of the needs to the realisation of the measures of cleaner production once validated.
- More advertising of the activities of the Centre through media and local associations.

**Question 17. Did you participate in the seminars or workshops organized by the CMPP?**

30% of the enterprises did not answered to this question.

The remaining 70% indicated the participation in the following:

- Seminar on Cleaner Production.
- Seminar on ISO 9001.
- Seminar on ISO 14000.
- Workshop on environmental impact.
- Seminar on strategy for sustainable development.
- Seminar on treatment of industrial waste in Morocco. June 2001.
- Workshop on eco/efficiency software.
- Workshop on environmental management.
- National seminar of CMPP on “Cleaner Production, matter of competitiveness” January 2001.
- Round Table on Renewable energies. March 2001.
- Round Table on Impact of industrial pollution on the water. May 2001.
- Round Table on Analysis of industrial risks. November 2001.
- Seminar on the impact of the industrial waste on the environment. June 2002.
- 2<sup>nd</sup> National Seminar on CP: “SME: which strategy for a sustainable development”. October 2002.

All the above-mentioned events have been indicated by the enterprises in this way, including the dates.

A copy of the questionnaire sent to the companies is in Annex V.

## **Annex VII**

### EVALUATION EN PROFONDEUR INDEPENDANTE ET TRIPARTITE DU PROJET "CENTRE DE PRODUCTION PLUS PROPRE AU MAROC" US/MOR/99/132

#### **Avant Projet du Résumé des Conclusions et Recommandations**

Présenté aux autorités du projet à Casablanca et Rabat le 9 et 10 février 2003

## **I Historique**

- Le programme du Centre Marocain de Production Propre (CMPP) se base sur l'expérience acquise par l'ONUDI, qui est l'Agence d'exécution du projet, qui a été financé avec l'apport du Gouvernement Suisse, en mettant à la disposition du CMPP un Centre Technique de référence suisse, sélectionné par l'ONUDI, seco et une délégation marocaine. Le Centre a démarré ses activités en janvier 2000.
- L'objectif est la mise en fonction d'un organisme pour promouvoir le concept de production propre, réduisant les impacts négatifs sur l'environnement et, en même temps, favorisant la compétitivité et la productivité des entreprises, soit à niveau national que pour améliorer les possibilités d'exportations.
- Le CMPP est le point focal au niveau national pour les problèmes concernant l'amélioration des performances environnementales et économiques de l'industrie dans le pays.
- Le CMPP est hébergé par la Confédération Générale des Entreprises Marocaines (CGEM). Ses activités sont gérées par un Conseil d'Administration et un Comité Directeur.
- Le Centre représente un point de collaboration entre le secteur public et le secteur privé. Son action est facilitée par la confiance dont il bénéficie de la part du secteur privé.
- Le Centre est administré par un conseil d'administration où siègent les secteurs prépondérants de l'économie du Maroc et par un comité directeur émanation de ce conseil. Les pouvoirs de ces deux organes sont définis dans le statut dûment enregistré. La gestion du centre se fait par un staff composé d'un Directeur Général; un directeur général adjoint et un directeur technique.
- Les activités du CMPP ont six objectifs principaux:
  1. sensibilisation générale sur les problèmes reliés à l'environnement,
  2. audits sur site des entreprises,
  3. Formation des cadres administratifs et techniques dans les institutions et les entreprises, par les cadres CMPP préalablement formés pour ce but et faisant appelle aux experts nationaux et internationaux.
  4. promotion d'une production plus propre et accompagnement des entreprises pour le financement des investissements basé sur le transfert de nouvelles technologies
  5. distribution de l'information spécifique et sectorielle requise par les partenaires concernés
  6. Conseil et assistance aux organes impliqués dans la détermination des politiques environnementales au Maroc.

## **II CONCLUSIONS**

- L'objectif du Centre a été bien exprimé par une entreprise assisté par le Centre, comme: "Restituer à la Nature c'est qu'elle nous a donné, mais en plus propre!!!" En plus de cela il faut attirer l'attention des entrepreneurs sur les gains qu'ils pourraient réaliser en termes de

production, car ce résultat peut être obtenu en améliorant en même temps leur compétitivité et productivité.

#### Concernant les objectifs:

- Le Centre a accompli, tel que défini dans le Document du Projet, les objectifs immédiats et sa pertinence dans le contexte industrielle marocain est de plus en plus reconnue.
- La phase initiale opérationnelle des trois premières années a atteint les résultats escomptés et attendus par les partenaires impliqués dans le projet.
- Les activités ébauchées ont été conduites d'une manière satisfaisante. Seulement pour ce qui concerne le nombre de projets d'investissements en technologies plus propres, la mission d'évaluation n'a pas constaté de grands résultats.
- La mission d'évaluation n'a pas constaté une activité d'assistance du CMPP vers les organes qui déterminent les politiques environnementales du pays.

#### Concernant la structure et le dessin du projet:

- Les ressources humaines du Centre ne sont pas suffisantes pour couvrir toutes les tâches prévues. Le directeur technique du Centre n'a pas de contrat et attend depuis deux ans d'être détachée par le Ministère de l'Industrie, mais jusqu'au moment de l'évaluation, elle n'est pas encore dans les effectifs du Ministère. Bien qu'elle signe de lettres et participe à la récolte des données auprès des entreprises, à l'heure actuelle elle n'est pas ni fonctionnaire du ministère, ni du projet
- Le staff du Centre est compétent et dédié au travail accompli.
- Le rôle et les responsabilités telles que définies dans le document du projet et le statut du CMPP n'ont pas été respectés intégralement. Le CMPP est une association à but non lucratif, mais il a facturé ses prestations. Le Comité Directeur n'a aucune existence statutaire.
- La coopération avec le Ministère de l'Industrie (organe de tutelle du projet) est très bonne et a permis la sous-traitance par le CMPP de l'exécution des certaines activités, qui permettent au projet de se procurer de ressources propres.
- Aussi dans le cadre du Programme Intégré de l'ONUDI pour le Maroc, le CMPP est sous-contracté pour exécuter des audits techniques, concernant l'environnement, au sein des entreprises.
- Le rôle et l'utilisation des services du Centre de Référence suisse doivent être défini d'une manière plus spécifique. Souvent le Centre de Référence n'est pas en mesure de fournir l'expérience professionnelle requise.
- L'absence d'un contrat cadre avec le Centre suisse de Référence n'a pas permis d'assister efficacement le CMPP, parfois par l'absence d'un expert parlant la langue française, parfois par le manque d'une expérience spécifique appropriée.
- Les procédures de déroulement des audits des entreprises, précisées dans le document du projet, n'ont pas été suivies, ce qui affecte l'efficacité des différents intervenants.
- Le CMPP ne dispose pas du personnel et les ressources nécessaires pour faire face à la demande croissante des entreprises sur tout le territoire national. Pour plus d'efficacité la création d'antennes régionales serait souhaitable.

#### Concernant la gestion du projet

- Le monitoring du projet, soit administratif que technique, par le siège de l'ONUDI est faible. La langue utilisée devrait être le français, qui est essentielle surtout pour les relations avec les entreprises. La direction du CMPP ne connaît pas la situation financière du projet à l'heure actuelle. Le CMPP ne dispose que d'un seul compte bancaire, dans le quel sont gérées les ressources émanées de l'ONUDI et les ressources propres reçues par le CMPP.

- L'ONUDI n'est pas impliqué dans la sélection des experts nationaux pour les audits d'entreprise. Le rôle de l'ONUDI est de donner le contrat à l'expert national pour accomplir l'audit technique de l'entreprise sélectionnée. La mission d'évaluation a constaté que seulement dans deux cas l'ONUDI a changé la proposition de couple (expert/entreprise) faite par le CMPP.
- En juin 2001 le CMPP a proposé à l'ONUDI 10 entreprises pour les audits de démonstration, avec les noms de cinq experts nationaux choisis pour les accomplir, en fonction d'un expert pour deux audits d'entreprise. Les audits étaient prévus sur une durée de six mois et en même temps le Centre suisse de Référence avait été informé sur les entreprises choisies, avec le but de l'informer sur le genre d'expertise requise et avoir le temps de désigner ses experts.
- Les rapports d'audit technique des entreprises ne sont pas validés techniquement par le siège de l'ONUDI, qui les reçoit pour information. Apparemment les communications entre CMPP et siège de l'ONUDI ne sont pas optimales.
- Les critères pour la sélection des entreprises pour les audits techniques, comme les secteurs d'interventions, ne sont pas bien établis.
- Les communications entre le CMPP, l'ONUDI et le Centre suisse de Référence ne sont pas optimales et de retards dans les réponses pour le choix des experts internationaux et l'élaboration des audits ont été reportés à la mission d'évaluation.
- La sélection des experts suisses dans beaucoup de cas n'as pas été rapide, bien qu'elle ait été établie au début de l'audit, à cause de changements arrivés à l'intérieur de la structure du Centre suisse.
- Le déroulement des rapports d'audit a duré plus d'un an du moment de la visite à l'entreprise et la présentation du rapport final. Délai inacceptable pour l'entreprise.
- La sensibilisation, la formation et la diffusion de l'information dans le pays ont été très satisfaisant, donnant visibilité au rôle du CMPP (Le Centre distribue un bulletin périodique, organise de séminaires et organise des "jeudis d'information").
- La mission a constaté dans certains cas un manque d'intérêt dans certaines entreprises, probablement du au fait que les audits étaient gratuits. Pour faire un exemple une entreprise a communiqué à la mission d'évaluation qu'elle n'avait pas encore reçu le rapport d'audit, quand la mission a pu vérifier que le rapport en question lui avait été envoyé en version électronique il y a déjà quatre mois.

#### Concernant la pérennisation du CMPP

- Les actions de formation et les audits techniques de démonstration ont été gratuits. Toutefois, il y a de bonnes perspectives pour l'autofinancement du Centre dans le future, considérant la situation du pays et les nécessités constatées.
- La mission d'évaluation a constaté une coordination avec d'autres bailleurs de fonds et le Centre est reconnu comme l'acteur de référence impartial dans le pays. Le fait d'être hébergé auprès de la CGEM donne plus de notoriété a son rôle.

### **III. RECOMMANDATIONS**

#### **1. Au CMPP**

- a. Etablir la définition de fonctions du staff, en partant des délégations de pouvoir et conformément au statut du CMPP. Cela permettra que les actions puissent être planifiées à l'avance sur la base des tâches prévues.
- b. Ouvrir un compte bancaire supplémentaire au nom du CMPP réservé aux ressources propres du Centre, résultant des activités de formation, des cotisations et des services



exécutés pour d'autres bailleurs de fonds, et indépendantes de celles octroyées par l'ONUDI.

- c. Se basant sur l'expérience de la première phase, les services fournis doivent être payants, afin que les entreprises soient plus exigeantes sur la qualité et le délai d'exécution des services.
- d. Veiller à la transmission des informations périodiques et aviser les institutions et les personnes concernées de changements survenus
- e. Etant donné les perspectives prometteuses résultant d'un développement des activités de la production plus propre au Maroc; l'équipe du CMPP devrait être renforcée par le recrutement d'ingénieurs qualifiés et capables d'accompagner les entreprises dans l'expression des besoins en production plus propre, la réalisation des diagnostics environnementaux et, enfin, dans la mise en œuvre des recommandations des experts par l'introduction des nouvelles technologies. Ce renforcement permettra à moyen terme de créer des antennes régionales du CMPP.

## **2. Au Comité Directeur (CD)**

- a. Le CD, étant un organe exécutif doit se conformer au statut et porter l'appellation Bureau au lieu de Comité. L'ONUDI et seco y siègeront en qualité d'observateurs.

## **3. Au Conseil d'Administration (CdA)**

- a. Le CdA devrait actualiser le statut du CMPP et- en particulier les responsabilités et les pouvoirs des organes exécutifs pour une meilleure conformité à la réalité et aux finalités du Centre.
- b. Les responsables du CMPP (Conseil d'administration et / ou Comité Directeur) devraient se pencher, en coopération avec l'ONUDI, sur le cas du directeur technique en officialisant son détachement du Ministère de l'Industrie, tout en réglant le problème de sa position, en considérant ses tâches et responsabilités.

## **4. Au Centre de Référence Suisse (CSR)**

- a. Le CSR doit réagir rapidement aux requêtes du CMPP pour les services des consultants internationaux, dont les CV répondant précisément à la qualification exigée par les entreprises marocaines, doivent être envoyés suffisamment à l'avance.
- b. La bonne connaissance et l'expérience de l'expert dans le processus du secteur pour le quel il sera proposé devrait permettre l'établissement d'une complémentarité harmonieuse avec celle de l'expert national et du staff technique de l'entreprise concernée. Pour cela le CSR devrait disposer d'une base des données d'experts internationaux aux quels il pourrait faire appel au cas de non-disponibilité interne. Dans tous les cas le CSR devra garantir la mise à disposition d'experts idoines, selon les demandes du CMPP, qui devra nécessairement établir un programme annuel des sollicitations d'experts.
- c. La maîtrise de la langue française est un élément primordial dans le choix de l'expert proposé, afin de garantir une bonne communication, assurant ainsi la réussite de la mission.
- d. Le CSR et l'expert national doivent faire de telle sorte à ce que leurs engagements respectifs soient exécutés dans les règles de l'art et dans les délais contractuels. Pour cela ils doivent établir avec l'entreprise concernée un plan d'action commun visant la satisfaction du client.

## **5. A l'ONUDI**

- a. L'ONUDI doit conclure un contrat cadre, comme dans le cas d'autres centres de production plus propre, afin que le CSR soit en position de répondre rapidement à toutes les demandes d'expertise du CMPP et des entreprises.
- b. L'ONUDI doit établir clairement les procédures et les canaux de communication avec les différents intervenants.
- c. L'ONUDI doit fournir toutes les informations (techniques et financières) nécessaires à la bonne gestion du Centre, et, en échange il devra recevoir le rapport périodique illustrant les états financiers et la situation des avancements des actions entreprises.
- d. Les commentaires sur les versions préliminaires des rapports des experts sur les audits d'entreprises devraient être sollicités en même temps à tous les partenaires impliqués (Entreprise, ONUDI, experts et CMPP)
- e. L'ONUDI devrait veiller que les recommandations de la mission d'évaluation, une fois acceptées, soient réalisées dans le meilleur délai.

## **6. A seco**

- a. La manière actuelle de seco de contrôler le projet et ses critères d'intervention, sans se mêler dans les affaires opérationnelles, est appropriée avec le rôle d'un bailleur de fonds et doit continuer.

Le rapport de la mission d'évaluation, sur requête de l'ONUDI et de seco, sera rédigé en anglais, comme prévu dans les termes de référence de la mission d'évaluation

La mission d'évaluation profite de cette occasion pour remercier le personnel du projet et toutes les personnes rencontrées pour la coopération donnée au cours de tout le travail d'évaluation. Le professionnalisme et le dévouement du staff du projet ont considérablement aidé la mission d'évaluation pour la préparation du rapport.

Casablanca le 9 février 2003

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## **Annex VIII**

### **Proposals for the design of SRC support**

#### **1. Introduction**

One major problem influencing the effectiveness of the SRC support, and the cooperation between the CMPP and SRC relates to the selection procedures and the institutional design of the involvement of the Swiss Reference Centre to support the establishment of the CP project for two to three years.

The following rough typological analysis and proposal are based on discussions with UNIDO project managers during the debriefing meetings on 10 and 11 March 2003. It is hoped that this will help somewhat in progressing toward future solutions which maximise the advantages and minimise the problems with the involvement of the SRC.

#### **2. The problem of designing the SRC involvement**

The aim of seco in contracting the SRC is to support the CP in its building-up process of national capacity in CP Know-how and methodology. Furthermore a lasting cooperation between national expert capacity of the country itself on the one hand, and Swiss consultants on the other is aimed at. This also should contribute to the transfer of CP technology from Switzerland to the host country where feasible.

Experience with several CPC projects financed by seco in the past have shown that bringing in Swiss CP-expertise and know how into a CPC project in a foreign country is a delicate proposal. Several, partly conflicting criteria, must be satisfied at the same time.

#### **3. Conditions and Criteria to be considered**

Five criteria should be considered when designing the selection procedures and the organisational and contractual arrangements for a “multilateral” CPC, where seco mandates UNIDO with the preparation and the execution of a CP project.

	<b>Criterion</b>	<b>Explanation: The arrangements must be such that:</b>	<b>Solution to meet the criterion</b>
A	Sustained Quality of SRC services	It must be ensured that SRC has incentives for providing high quality and reliable services over the whole period of the project.	A framework contract is given but only after an initial qualification period of 6 to 12 months. However, this must be known by the bidding consultants at the time of the bidding.
B	Flexible response	SRC must be interested and capable to respond flexibly to both, small ad hoc and more comprehensive requests of the CP.	The SRC must dispose of a “discretionary” budget to response to ad hoc requests.
C	Equal access to Experts within SRC and outside SRC	When SRC does not find an expert with the qualifications required for a certain task, then it must be capable and interested in recruiting an expert outside of SRC, in Switzerland or even abroad.	For this, access to corresponding data banks is necessary.
D	“Expensive Foreign expert” perception	From a national standpoint international experts from an industrialized country in Europe are very expensive. Often the question is asked whether it is necessary to bring in a foreign expert for a certain task, or whether he could not be substituted with one or more local experts. An aversion against mobilizing international expertise can develop.	The budget for the SRC support should be separated from the actual CPC budget. The problem can be reduced if seco contracts the SRC rather than UNIDO. However, this could complicate control mechanisms in cases where the SRC does not perform satisfactorily. (the executing agency UNIDO has no contractual control over SRC).
E	Ensure that ownership for the CP Project is with the staff of the CPC and its governing bodies (Exec Committee and/or Board)	The development of such a feeling of ownership can be supported at the beginning of the project if the national actors of the CPC (the director, members of the Board or the supervisory Ministry ) are actively involved in the selection of the SRC.	Involve the national actors in the selection process of the SRC, such as it has been done in the case of CMPP (Morocco).

#### 4. Assessment of Proposals for the SRC involvement

The organisational design of the SRC essentially comprises three elements:

1. the bidding and selection process of a (Swiss) consulting firm,
2. the structure, duration and conditions of the contractual arrangement with the SRC, and
3. the question is who contracts SRC (the donor or the multilateral executing agency).

Based on the above analysis and the experience with several CPC projects the following model is found to provide the most advantages, while at the same time minimising disadvantages:

##### 4.1 Parameter I: The bidding and selection process

Criteria affected: E		
Model	Characteristic	Advantage/ Disadvantage
1. Formal bidding process according to UNIDO's international standards:	Special contract department at UNIDO does the selection. Bids must be submitted in closed envelopes to guarantee neutrality.	<b>Advantage:</b> formally (politically) correct procedure; complete separation of project manager and selection unit at UNIDO. "neutral" procedure (does not necessarily lead to the best selection). <b>Disadvantages:</b> 1. The persons selecting have no personal knowledge of the project or CP problems, nor of the bidding firms. Without special justification, the cheapest offer must be selected) 2. No effective participation of the partner country is possible therefore ownership is low.
2. Limited bidding 2A. UNIDO does the bidding 2B: seco does the bidding	a number of Swiss firms are invited to participate; Partner country can be involved in the selection process.	<b>Advantage:</b> Ownership of the partner country is enhanced. <b>Disadvantages:</b> Process does not formally comply with international bidding rules (which are useful and used for very large contracts).
Assessment:	<b>Model 2B is recommended.</b> Ownership, the knowledge about CP contents and personal knowledge by the selection committee of the firms bidding is considered more important than compliance with the formalities of international bidding. Solution 2B is not subject to complications stemming from procedural rules to which UNIDO is obliged.	

4.2. Parameter II: Design of the contractual arrangement with SRC

<b>Criteria affected: A, B, C</b>		
<b>Model</b>	<b>Characteristic</b>	<b>Advantage/ Disadvantage</b>
1. Contracts for international experts only on a case by case basis (assuming UNIDO contracts SRC)	For each service requested by the CPC a formal contract procedure must be run by UNIDO.	<p><b>Advantage:</b> Tight control over the SRC by UNIDO.</p> <p><b>Disadvantages:</b></p> <ol style="list-style-type: none"> <li>1. Complicated procedures with long decision making procedures and risks for delays.</li> <li>2. SRC receives no compensation for small ad hoc requests from the CPC, cooperation between SRC and CPC is difficult.</li> </ol>
2. Framework contract	Good performance depends on confidence and the assumption that the SRC operates according to long term criteria; has an interest in good performance over the whole period of the project.	<p><b>Advantage:</b></p> <ol style="list-style-type: none"> <li>1. Simple working conditions for SRC and CMPP, also for ad hoc requests. Enhances closer cooperation.</li> </ol> <p><b>Disadvantages:</b></p> <ol style="list-style-type: none"> <li>1. There is a risk of unsatisfactory performance by SRC, if no tight control by UNIDO.</li> </ol>
3. Combination of 1 and 2	During the first 6-12 months on a case by case basis, with a small discretionary budget for ad hoc support of the CPC. After this period a framework contract becomes effective, based on satisfactory performance.	<p>This model combines the advantages of both models 1 and 2, and is to be recommended. It allows UNIDO, SRC and CPC to test cooperation.</p> <p><b>This model is recommended.</b></p>
	<p><b>Criteria C:</b> One tries to ensure that the SRC has an interest, (or is obliged) to recruit expertise outside its own firm or consortium in cases where the best expertise is outside. For this, the contract should foresee that a part of the contract volume must be expended for experts outside the SRC firm. However, this is a rigid rule and the fraction in question should be yearly discussed and fixed on the basis of the industrial sectors foreseen for IPAs. In any case: It is important that the SRC has easy access to a broad database of expertise.</p>	
<b>Assessment: Model 3 is recommended</b>		

### 4.3. Parameter III: Contracting parties: Who is contracting the SRC?

<b>Criteria affected: A</b>		
	<b>Characteristic</b>	<b>Advantage</b>
1. UNIDO	UNIDO is contracting the SRC. The budget for the SRC is included in the UNIDO budget.	<p><b>Advantage:</b> The command line between the executing agency (UNIDO) and the SRC is shorter and more direct.</p> <p><b>Disadvantages:</b> The “expensive foreign expert” perception may develop. The CPC may hesitate to request foreign expertise.</p>
2. seco	seco issues a separate contract with the SRC selected, outside the actual CPC budget.	<p><b>Advantage:</b> The SRC services are delivered under a separate budget. The barriers for the CPC to request foreign expertise assistance does not exist.</p> <p><b>Disadvantages:</b> In case of problems between the executing agency and SRC the contacts are complicated.</p>
	<p><b>Assessment:</b> Solution 2 allows simpler solutions for the recruitment of SRC, but it leaves more responsibility (and probably workload) with seco. It is recommended that UNIDO and the host country are also involved in the selection process (as it has been the case of Morocco).</p>	

## Annex IX: Structure of Workload of CMPP Staff

### Questionnaire:

What is the approximate %-split of your time allocation at present (last 6-12 months approximately):

Type of Activity	Director	Deputy Director	Technical Director
	% of worktime		
(a) Formations	15	25	10
(b) Sensibilisation (Awareness Raising)	10	20	10
(c) Diffusion de l'information	10	10	10
(d) Audits (IPA), visites dans les entreprises, rapports IPA	20	5	40
(e) Conseil politique (Policy advise)	8	10	10
(f) Promotion des investissements et assistance financière (Financial Services advise)	10	5	10
<b>TOTAL for the 6 substantive Task Areas in % of full time job of the director</b>	<b>73</b>	<b>75</b>	<b>90</b>
(g) Voyages (plus que 1 jour)	2	5	1
(h) Administration et Rapports admin.	15	20	4
(i) Appuye aux Visiteurs / Missions	10	5	5
(j) Autre	10		
<b>TOTAL Percent (g) to (j)</b>	<b>37</b>	<b>30</b>	<b>10</b>
<b>TOTAL (a) to (j)</b>	<b>110</b>	<b>100</b>	<b>100</b>

Note: Total (g) to (j) plus Total (a) to (e) may be more than 100%, since some items may overlap.



## **Annex X**

### **Definitions of selected Success Indicators**

(This is an excerpt from the paper “notes on the success indicators”), prepared for the centers to be used when establishing the SI- data to be reported to UNIDO)

The indicators used in this evaluation report are mostly drawn from UNIDO's monitoring system. They have been selected to give an impression of the outputs, impacts and institution building effects, which the projects have attained with the inputs available. Indicators showing the activities in awareness rising have been deleted in 2001, with a change in the numbering system of the indicators. They previously were denoted as Indicators of category A. As of 2001 the category A stands for “Training activities”

#### **A.1. – A.2. TRAINING**

The term “training” covers those activities that give people skills to independently undertake CP or CP-related activities (e.g., training on the use of CP assessment methodologies, training on how to perform an energy audit, training on implementation of EMS, training on how to design environmentally friendly products, training on how to prepare a request for investment in CP technology, ...).

- For training to be counted, the Centre must be involved actively in the training, either as a major sponsor, and/or with instructors, and/or with materials.
- Only those courses at least three days long will be counted. It is considered that for any training course to have an impact, it must be at least this long.
- Training can take place both “in the classroom” and “in the field” (e.g. undertaking a CP assessment under the guidance of NCPC staff).
- A training course can be modular, e.g. a training of 9 days can be broken up into three modules of three days each, spread out over a period of time. NOTE: for this kind of training to be counted, the people must participate to the whole training course, and the subject of the training must be the same throughout.

#### **“A.2. No. person-days of training”**

This indicator measures the person-days of training. This values equally a center that prefers to train quickly many persons or another center that prefers long in-depth training for a few people. The calculation is made by multiplying the number of persons trained by the number of days of training given to each person. So:

- 15 people each given a five-day training course equals 75 person-days of training;
- 10 people each given a modular course of a total of 15 days (5 modules of three days each) equals 150 person-days of training;
- In total, this is 225 person-days of training (i.e., do NOT add up the people, then add up separately the days of training, and then multiply the two).

All persons trained, irrespective of institution or background, are counted EXCEPT FOR the Centre staff itself or any other staff that work closely (almost as staff) with the Centre.

***These indicators require each NCPC to keep records of the number of people taking part in each training course and the length of each course.***

## **B.1. – B.4. IN-PLANT CP ASSESSMENTS**

A Centre can undertake many types of in-plant assessments, other than in-plant CP assessments: EMS implementation, in-depth energy-efficiency audits, health & safety assessments, etc. Centres can also get involved in assessments of other types, e.g. appraisals done by the NCPC for financing institutions of applications/projects for investment funding. However, the focus of these indicators is *in-plant cleaner production assessments*.

- In-plant CP assessments can be “full assessments” – defined as requiring 20 man-days or more to complete – or “rapid assessments” – defined as requiring less than 20 man-days to complete.
- The major client for the assessments will be the enterprises but it can also be communities/municipalities.

### **“B.1. No. Full in-plant CP Assessments completed”**

This indicator measures the number of full in-plant CP assessments (20 man-days or more) completed by the NCPC during the year.

- Only those full in-plant CP assessments where the NCPC runs the assessment or has a major role in the assessment are counted.
- Only those full in-plant CP assessments completed in the current year are counted, independent of their starting date. Full assessments that have been started but not terminated are not counted (they will be counted in the year that the assessment is completed). The delivery of the accepted final report is taken as completion date.
- Each project is counted separately. The definition of a project is based upon the NCPC having a contract that clearly defines the tasks of the enterprise/community-municipality on the one hand and the NCPC on the other, and requires a final report. Different full assessments (e.g. in different processes, production lines etc.) can be made in the same enterprise or in the same community/municipality over time or in parallel – they will still be counted individually. However such full assessments are only counted separately if separate contracts and reports exist.

### **“B.4. No. Rapid in-plant CP Assessments completed”**

*This indicator measures the number of rapid in-plant CP assessments (less than 20 man-days) were completed by the NCPC during the year.*

- Only those rapid in-plant CP assessments where the NCPC runs the assessment or has a major role in the assessment are counted.
- *Rapid in-plant CP assessments completed during the current year are counted, independent of their starting date. Rapid assessments that have been started but are not yet completed are not counted (they will be included in the year that the assessment is completed). The delivery of the accepted final report is taken as the finishing date.*
- *Different rapid assessments (e.g. in different processes, production lines etc.) can be made in the same enterprise or in the same community/municipality over time or in parallel. However, only assessments with separate contracts and report are counted.*

## **C: FINANCIAL SERVICES**

### **“C.1. No. applications/projects for investment funding prepared by/with the assistance of the NCPC and submitted to financing institutions, which have been accepted”**

This indicator measures the success of the NCPC in assisting companies to access financing for their CP projects (for example, helping a company obtain financing by preparing well-founded credit documentation).

Only those cases are counted where the services of the NCPC (writing and presenting an application or project document, preparing a report, etc.) have led to a financing institution giving the financing.

- The term “financing institution” is meant to cover any institution or entity or company, national, international or foreign, which could make available the necessary funds for CP investments.

## **E.1. – E.2. FINANCIAL SUSTAINABILITY**

This set of indicators measure the success of the NCPCs in becoming financially sustainable, ready for the time when UNIDO funding will finish. All the indicators compare income of different kinds to the total operational expenses of the NCPC.

- The phrase “total operational expenses of the NCPC” means all costs related to operating an NCPC, **including in-kind contributions from the national stakeholders**, which eventually the NCPC will (might have to) pay for, out of the funds it raises. This includes:
  - salaries of the NCPC staff;
  - rent of the offices;
  - office operating costs (telephone, electricity, office supplies, postage, etc.);
  - expenses for outside services such as laboratories;
  - equipment and furniture;
  - travel costs, excluding those for international training or international study tours of NCPC and related staff, but including the costs to go to the UNIDO Annual Meeting and the UNEP High-Level Seminar;
  - costs of subscriptions;
  - the fees and costs of national experts hired by the Centre;
  - the fees and costs of international experts brought to the country **at the NCPC’s request** for training or technical assistance purposes, excluding the support provided by the international counterpart institutions/reference centres.

- Where costs are **in-kind** (given free to the Centre by a local stakeholder), a reasonable estimate will be made of their cost on the market, in case these will no longer be given free at the end of the project.
- Where the Director does not know a cost, he/she will ask either UNIDO or the local stakeholders, whichever is relevant, for the necessary cost data. If there is doubt about whether a cost should be included or not, the Director should ask UNIDO.

Note: *These indicators are closely linked to the annual financial statements that NCPCs must present to their Executive Boards/Steering Committees.*

### **“E.1. Ratio (operational income / operational expenses of center)”**

This indicator measures what fraction of the total costs for operating an NCPC are being covered by income generated by the sales of the Centre’s services alone. The bigger this ratio is the easier will it be for the Centre to be financially sustainable after UNIDO funds are terminated.

- For operational expenses see the definition above.

- **Operational Income:** All income paid by clients directly for services and received by the center are included. Typical examples are:
  - Fees charged for giving assistance to an enterprise;
  - Fees charged for training;
  - Fees charged for undertaking projects for the national government, local governments, international organizations, or any other such organizations.

The value of time of persons working together with the center (e.g. participants from enterprises working in in-plant assessments) is *not* considered as in-kind income and is *not* valued and included.

**“E.2. Ratio (Operational Income + National income) / operational expenses of center”**

This indicator measures how much of the total costs for operating an NCPC are being covered by income generated by the sales of the Centre’s services, on the one hand, and any other financial support it receives from sources within the country, on the other, *including in-kind contributions from the national stakeholders*. For the Centre to be self-sustainable this ratio will be at least 1 by the end of the UNIDO funding.

- For operational expenses see definition above.
- For operational income see definition above.
- National income includes all contributions to the project from national organizations. Examples are:
  - in-kind contributions, e.g. rent, payment of phone bills, secretarial service, laboratory services – *these must be valued at the market rate*;
  - contributions related to services, e.g. payment of 50% of the bill of an in-plant assessments or payment of 50% of the expenses of a training course.

The distinction in this field between payment for services and national contribution is not always clear-cut. The major point of distinction to use is that:

- an income is considered a *payment for services* if the institution paying the bill is also the major recipient of the service;
- an income is considered a *national contribution* if the payer of the bill is not the major recipient of the service, e.g. if government subsidizes an in-plant assessment the recipient of the service is the enterprise thus the subsidy is considered as national income and not as payment for services.

**F.1. – F.2. INSTITUTIONAL NETWORK**

*This set of indicators looks at how much CP has been implanted in the country and has become part of the country’s institutions. This is extremely important for ensuring the long-term sustainability of the CP concept in the country (whether or not the Centre remains, but normally it will also help the Centre to survive).*

**“F.2. No. policy changes that that have been/are being implemented, to which the NCPC contributed”**

This indicator measures the success of the NCPCs in getting “CP-friendly” changes and additions to the country’s legislative and regulatory texts or other “policy” documents. In the long-term, such changes will be very important for institutionalizing CP.

- There are many ways for NCPCs to bring about such changes. The indicator does not try to measure these different ways but wants to measure the effectiveness of the NCPCs' efforts, so it asks how many policy changes have been implemented during the year, or are in the process of being implemented, to which the NCPC contributed in some substantial way.
- NCPCs will have to keep suitable records showing what the changes in question are and how the NCPC contributed to them.

## G.1. – G.2. IMPACT AT ENTERPRISE LEVEL

*This set of indicators measures the impact that the NCPCs' efforts have had on their main beneficiary, namely industry. They focus on the economic savings the Centres have brought to their industrial clients and the environmental savings they have brought about by modifying enterprises' behavior.*

### G.1.A.– B. FINANCIAL SAVINGS

These two indicators measure in slightly different ways the financial savings that the Centres have brought about through their on-site work with enterprises.

- The indicators focus specifically on the results of the in-plant assessments, and the reports of these assessments should be the major source of data. However, if the Centre can quantify the savings from other on-site work such as rapid assessments or assistance to come into compliance, it can include these. The Centres must keep the necessary records.

#### “G.1.A. Sum of the NPV's for all CP options which were at least partially implemented during the year”

- *Net Present Value (NPV) has been chosen as the measure because (a) it takes into account the costs linked to any necessary investments (inside or outside) that were made and (b) because the result can be summed for all projects.*
- *NPV is defined as the value obtained by discounting, separately for each year, the difference of all cash outflows and inflows accruing throughout the life of a project at a fixed, pre-determined interest rate. To simplify the calculation for the NCPCs the following assumptions are applied:*
  - 1) All investment expenses (I) for a CP option are disbursed during one year (year 0).
  - 2) The NPV is calculated for 10 years in every case.
  - 3) The value of annual cost savings (S) is the same every year (1-10).
  - 4) The standard interest rate is 7% .

Under these assumptions the following simplified formula can be used to calculate NPV:

$$\text{NPV} = 7 \times \text{S} - \text{I}$$

- The calculation is done separately for every CP option that was at least partially implemented during the year. All individual NPVs are then summed up. The result is the measure of the indicator.
- There may be cases where an NCPC is called in to help a company that has been required by the enforcement authorities to comply with environmental standards, to find the least costly

way of reaching compliance. In this case, even the CP approach might still lead to a cost, although less than if a standard end-of-pipe approach was to be adopted. In these cases, NPV will still be used but it will be calculated for two scenarios: the scenario if a standard end-of-pipe solution had been adopted, and the CP scenario actually adopted. The figure to report for this indicator will then be the difference between these two NPVs.

- To make measures comparable, the results will be reported in US dollars. A representative exchange rate for the year will be used. If there have been strong fluctuations in the exchange rate over the year, the Director should consult with UNIDO on how to proceed.

**G.2.1. – 2.5. ENVIRONMENTAL SAVINGS**

*These indicators measure the environmental savings that the Centres have brought about through their on-site work with enterprises.*

- *The indicators focus specifically on the results of the in-plant assessments, and the reports of these assessments should be the major source of data. However, if the Centre can quantify the savings from other on-site work such as rapid assessments, energy audits or assistance to come into compliance, it can include these. The Centres must keep the necessary records.*

**G.2.1.A – B. ENERGY SAVINGS**

*These indicators measure the savings in energy consumption that the Centres have brought about through their in-plant assessments and other on-site work with enterprises.*

**“G.2.1.A. Quantity of energy saved”**

- *The measure for this indicator is done on the basis of every energy-saving CP option that has been at least partially implemented during the year.*
- *The sum of the individual savings of each CP option is the measure of the indicator. To be able to sum the individual savings all results will be turned into kilojoules/yr (KJ/yr). Use the following equivalency table to convert various fuel types into a heating value in KJ.*

		<i>Density (kg/m<sup>3</sup>)</i>	<i>Heating Value (KJ/kg)</i>
<i>Coal</i>			31,000
<i>Brown Coal</i>			17,500
<i>Wood</i>	Green		10,500
	Air dried		15,000
<i>Wood Dust</i>			12,000
<i>Paper</i>			13,500
<i>Oil</i>	Gasoline (Petrol)	725	43,000
	Diesel oil	835	42,500
	Light oil	880	42,500
	Medium oil	920	41,000
	Heavy oil	970	40,000
<i>Natural Gas</i>		0.78	32,000

Use the following table to convert common energy units into KJ

Unit	KJ
1 KW-hr	3,600

1 BTU	1.06
1 Calorie	4.19
1 horsepower	0.746 KJ/sec

#### **“G.2.2.A. Quantity of water saved”**

- *The measure for this indicator is done on the basis of every water-saving CP option that has been at least partially implemented during the year.*

The sum of the individual savings of each CP option is the measure of the indicator. To be able to sum the individual savings all results will be turned into cubic meters per year (m<sup>3</sup>/yr). Use the appended equivalency tables to convert to m<sup>3</sup>.

#### **G.2.3.A – B. WASTE REDUCTION**

*These indicators measure the quantities of solid waste whose generation the Centres have reduced at source through their in-plant assessments and other on-site work with enterprises.*

- *The term “solid waste” covers all those non-product releases that are neither emitted into the atmosphere through chimneys or as fugitive emissions, nor discharged into water bodies or sewers as part of a wastewater stream. It is often solid but can be liquid (e.g., used oil, used solvents).*

NOTE: To minimize the number of indicators, no distinction is made on the basis of the hazard of the wastes (unlike most environmental law). If Centres feel that it is important to them to make this distinction they can create their own indicator.

#### **“G.2.3.A. Quantity of solid waste reduced at source”**

- *The measure for this indicator is done on the basis of every waste-reducing CP option that has been at least partially implemented during the year.*
- *The sum of the individual reductions of each CP option is the measure of the indicator. To be able to sum the individual reductions, all results will be turned into metric tons per year (t/yr). This may create problems in cases where wastes are not weighed but are measured volumetrically (e.g., the number of skips taken off-site). In these cases, the centres will have to use estimates of the density of the waste to estimate the weight.*

#### **G.2.4.A – B. AIR AND WATER POLLUTION REDUCTIONS**

*These indicators measure the quantities of air and water pollutants whose generation the Centres have reduced at source through their in-plant assessments and other on-site work with enterprises.*

*The term “air pollutant” covers all those materials that are emitted into the atmosphere through chimneys or as fugitive emissions, **excluding** carbon dioxide (CO<sub>2</sub>) and the other greenhouse gases - see G.2.5.*

*The term “water pollutant” covers all those materials that are discharged into water bodies or sewers as part of a wastewater stream.*

**“G.2.4.A. Quantity of air pollutants (excl. greenhouse gases) and water pollutants reduced at source”**

- *The measure for this indicator is done on the basis of every CP option that reduces air pollutants (excluding greenhouse gases) or water pollutants at source and that has been at least partially implemented during the year. The results for air pollutants and water pollutants will be summed together, to minimize the number of indicators*
- *The sum of the individual reductions of each CP option is the measure of the indicator. To be able to sum the individual reductions, all results will be turned into metric tons per year (t/yr). Where air or water pollutants are measured in concentration units the Centres will have to obtain flux data, to convert to mass units.*

*Where possible, Centres should avoid using the measures Total Organic Carbon (TOC), Chemical Oxygen Demand (COD) and Biological Oxygen Demand (BOD) since these are not true measures of the quantity of pollutants being released. If Centres must use them, the quantities of these measures will be reported with no correcting factors used.*



## Annex XI

### Documents and Literature referenced

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5. CMPP: Statuts du CMPP (adoptés par l'assemblée constitutive le 19. octobre 2000).
6. CMPP: Proposition de description de poste pour le staff du Centre, 23 janv. 2003.
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8. seco: Memorandum relating to the Minutes of the joint Meeting CMPP/seco/UNIDO in Bern on August 15<sup>th</sup> 2002; dated December 20<sup>th</sup> 2002.
9. SRC (EMPA, emac, urbaplan): Cleaner Production Manual. Introduction of cleaner production in the Moroccan industry, draft, September 2002.
10. EAU GLOBE/emac: L'usine de conservation de poisson BELMA, Pré-Evaluation et Audit Environnemental, Rapport Phase I to IV, (Final Report of the in plan assessment IPA), Octobre 2002  
*(Similar reports have been prepared for all IPAs, in total 16).*