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Independent Final Evaluation

Identification, assessment and prioritization
of pollution “hot spots” and transfer of
environmentally sound technologies (TEST)
in the Cambodian Section of the Mekong
river basin

UNIDO project number: TF/CMB/10/002/A02 - SAP ID 104083



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO EVALUATION GROUP

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The views and opinions of the evaluators do not necessarily reflect the views of the Government of the Kingdom of Cambodia, the Korean International Cooperation Agency and of UNIDO.

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We hope that the findings, conclusions and recommendations will contribute to the continuous improvement and the mobilization of funds for similar projects in other countries.

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Abbreviations and acronyms

CP	Cleaner Production
CSR	Corporate Social Responsibility (ISO 26000)
EMA	Environmental Management Accounting (ISO 14051)
EMS	Environmental Management System (ISO 14001)
GEF	Global Environment Facility
GoC	The Government of the Kingdom of Cambodia
HUO	Head of UNIDO Operations (in Cambodia)
IFC	International Finance Corporation (under the World Bank Group)
ILCC	Industrial Laboratory Center of Cambodia
ILO	International Labour Organization
KOICA	Korea International Cooperation Agency
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
MIME	Ministry of Industry, Mines and Energy (of Cambodia)
OVI	Objectively Verifiable Indicators
RBM	Result-Based Management
RECP	Resource Efficient and Cleaner Production
TEST	Transfer of environmentally sound technologies
SMEs	Small- and Medium-Sized Enterprises
UNEG	United Nations Evaluation Group
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
VNCPC	Vietnam Cleaner Production Center

Glossary of evaluation related terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the development objectives of an intervention were or are expected to be achieved.
Efficiency	A measure of how economically inputs (through activities) are converted into outputs.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intervention	An external action to assist a national effort to achieve specific development goals.
Lessons learned	Generalizations based on evaluation experiences that abstract from specific to broader circumstances.
Log frame (logical framework approach)	Management tool used to guide the planning, implementation and evaluation of an intervention. System based on MBO (management by objectives) also called RBM (results based management) principles.
Outcomes	The achieved or likely effects of an intervention's outputs.
Outputs	The products in terms of physical and human capacities that result from an intervention.
Relevance	The extent to which the objectives of an intervention are consistent with the requirements of the end-users, government and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.

Executive Summary

1. Background, purpose and methodology of this evaluation

This report covers the independent final evaluation of the UNIDO project “Identification, assessment and prioritization of pollution “hot spots” and transfer of environmentally sound technologies (TEST) in the Cambodian section of the Mekong river basin”, funded by the Korean International Cooperation Agency (KOICA).

The Project was implemented in cooperation with the Ministry of Industry, Mines and Energy (MIME) of Cambodia. Fully funded by the Korea International Cooperation Agency (KOICA) with a budget of US\$ 900,000, it ended on 30 June 2013. Its overall objective was to reduce the industrial discharge into river systems and improve the water quality of the Mekong River.

The approach combined two methodologies developed by UNIDO: Firstly, the “Hot-Spot methodology” assesses and prioritizes major polluting sites that are discharging industrial effluents into a river basin. Secondly, the implementation of the TEST integrated approach in selected enterprises aimed at the improvement of the environmental performance in prioritized hot-spots while increasing their competitiveness through “technological and knowledge transfers”.

The evaluation was commissioned by UNIDO and guided by the Terms of Reference (ToRs) included in Annex 1 and the UNIDO Evaluation Policy. While maintaining independence, the evaluators applied a participatory approach, taking the views of all stakeholders into account and seeking alignment on main conclusions and recommendations.

The methodological mix included semi-structured interviews at all beneficiary companies, focal-group interviews, individual interviews and an in-depth review of project documents and reports. Overall, findings were consistent and clear. Comments received from key stakeholders were taken into consideration in establishing this final report.

The evaluation was carried out by an independent evaluation team: Mr. Daniel P. Keller, international senior evaluation consultant and Mr. Somith Sok, national evaluation consultant. The evaluation field mission took place between 26 May 2013 and 31 May 2013.

2. Main conclusions

High relevance of objectives and quality of UNIDO’s service delivery led to tangible results

The Project’s objectives were fully aligned with national and international priorities, including the MDGs. Both MIME as the direct counterpart and companies benefitting from TEST services confirmed that they received the appropriate type of support in the right way. High quality of service delivery resulted in significant resource and cost savings at participating companies. The preventive approach to reducing industrial pollution was successful. The implementation of totally 380 “RECP-options” at nine beneficiary companies resulted in approximately 400,000 m³ of water savings and 5 million Kwh of electricity savings annually. Furthermore, US\$ 200,000 in private investments into clean technology was generated as a follow-up. Key benefits for companies are improved competitiveness and reduced environmental impact of

production. Social benefits of the project in terms of improving labor conditions (including salaries) were less important and TEST did not have any notable impact on product quality.

The combination of the “Hot Spot” and “TEST” methodologies was innovative and offers a potential for replication in other countries

The combination of the “Hot Spot Methodology” with the “TEST Methodology” under the Project addressed a weakness of other “RECP” initiatives, which was to not systematically identifying and focusing on major polluters. The lack of existing data and the short project duration did however not allow for fully exploiting the potential of the TEST methodology, such as identifying the most hazardous water pollutants and tackling them systematically.

Excellent project management was a key success factor

The choice of appropriate staff and the execution modalities contributed significantly to the achievement of results and reflect best practices in project management. Timely delivery of outputs in good quality, responsiveness to the expressed needs of the counterparts resulted in a high satisfaction and ownership of all beneficiaries (government and companies). Highly motivated staff with both managerial and technical skills at both field- and headquarter levels were able to drive the Project forward. Although formally using UNIDO’s traditional full-fledged agency execution mode, the Project was in practice partner-led. Moreover, the Project Manager closely consulted with the project team and the HUU and took their advice in operational decision making into account rather than micro-managing the Project from afar. The way the project was managed at headquarter and country level is best practice and a role model for UNIDO interventions with strong capacity building elements.

Buyers’ requirements of exporters and cost savings leading to higher competitiveness are the key motivation for companies to engage in environmentally friendly production

In the absence of strictly enforced environmental norms, achieving cost savings seems to be the key - if not only - motivation for domestic companies to apply the TEST methodology. In addition, for companies selling into multi-national supply chains in the garment sector, compliance with environmental and social standards of their buyers is a strong driving force to engage into environmentally friendly production. This implies that UNIDO needs to closely work with key international buyers and prioritize “TEST” support that leads in significant cost savings for companies.

Sustainability of results requires additional support and a strengthening the enforcement of environmental norms through incentives and strong sanctions

The Project Document does not include a sustainability strategy. Important elements of support that are essential to ensure continuation of benefits were however added during implementation, including limited support to enforcement of environmental norms (measuring equipment), the Green Industry Award as an incentive for companies to continue their efforts towards sustainable production and some input to policy making. The TEST approach is part of the GoC’s industrial strategy. While

MIME is committed to continue applying the TEST methodology through an own follow-up project targeting the ice industry, further UNIDO support would allow the GoC to scale up and consolidate results at a much faster pace than with its own limited resources. While the Green Industry Award, which yet has to be “institutionalized”, is a good way to raise awareness, stronger measures are needed to make “green production” financially attractive for companies. Besides monetary incentives (e.g. through favorable tax policies), there is also significant room for strengthening the enforcement of environmental norms.

Not sufficiently addressed is the problem of institutionalizing service provision to companies. Expertise remains scarce unless core elements of the TEST and Hot Spot methodology are mainstreamed into the curriculum of technical students. Both are crucial for the long-term sustainability of project results. UNIDO may explore the option to transform the existing “CP Office” under MIME into a public service provider to be hosted by an appropriate counterpart institution, similar to the model of the Vietnam Cleaner Production Center (VNCPC) under the Hanoi University of Technology.

The Project offered good value for money

An analysis of financial reports shows that transaction costs were relatively low and a high percentage of expenditures directly benefitted the key target groups. The extensive use of local expertise not only reduced cost, but also allowed for additional capacity building at beneficiary institutions.

Gender

The Project did neither have any gender-related objectives, nor was reporting on results disaggregated according to genders.

3. Recommendations

A. Recommendations to UNIDO

Project specific recommendations

- (1) Submit a proposal for a follow-up phase to KOICA and MIME for continuing UNIDO support in addressing pollution in the Mekong River Basin in Cambodia, while at the same time strengthening the competitiveness of local industries along the following lines:
 - a. Provide assistance to MIME in the on-going process of formulation of policies and laws relating to environmentally friendly and resource efficient production;
 - b. Upscale the application of the TEST methodology in other geographical areas and for other industrial sectors, prioritizing those where a major impact on pollution reduction can be achieved, based on additional “Hot Spot” Assessments where needed;
 - c. Continue awareness raising and advocacy efforts targeting the government, enterprises, consumers and international buyers;

- d. Assist the GoC to establish incentives for environmentally friendly production and to develop and enforce environmentally friendly norms;
- e. Institutionalize the “Green Industry Award”;
- f. Provide support to integrate the TEST methodology into the curricula of technical students through cooperation with an appropriate university, e.g. the Institute of Technology of Cambodia;

General recommendations to UNIDO relating to Cambodia

- (2) In working with companies that supply to multi-national supply chains, UNIDO should closely involve their buyers to leverage on the influence they can exercise on enrolling companies to comply with environmental and social standards.
- (3) In order to enhance long-term sustainability of results at company level, ensure access of companies to “TEST-services” through cooperation with an appropriate partner institution that is able and willing to provide support to companies on a commercial basis. At the same time, the problem of overlapping service provision by the “Cleaner Production Office” supported by UNIDO and the “TEST Project”, both hosted by MIME should be addressed. One way would be to transfer the “Cleaner Production Office” into an appropriate host institution and to develop it into a service provider. Lessons learned from UNIDO’s “RECP network”, in particular the Vietnam Cleaner Production Centre should be taken into account.

General recommendations to UNIDO

- (4) Based on a systematic assessment, UNIDO should for each country take a decision on whether the TEST or the RECP approach is more effective in reaching specific development objectives and then apply one methodology consistently.
- (5) Technical, managerial, entrepreneurial and interpersonal skills should be equally weighted in selecting project staff at headquarter and field levels.
- (6) Consider combining the Hot Spot methodology with the “RECP” methodology in countries where the TEST approach is not applied.

B. Recommendations to KOICA

- (1) Consider funding a follow-up phase along the recommendation A.1 above.
- (2) Consider cooperating with UNIDO in replicating the Hot Spot/TEST approach in other countries in the region, in particular in Lao PDR. New projects need to take the specific country context into account.

C. Recommendations to MIME

- (1) Respond favourably to a proposal for a follow-up phase along recommendation A.1
- (2) Strengthen the enforcement of environmental norms, both at the pre- and post-licencing stage and consider establishing a system of monetary incentives (e.g. tax deductions) for investment in “clean technology”.

4. Lessons learned

The “Joint-Execution Modality” UNIDO applied in practice, is a suitable management model for technical capacity building projects. Its key feature, “joint decision making”, allows both UNIDO and counterparts to focus on their particular strengths, thus jointly contributing to the achievement of objectives. Joint responsibility in turn fosters joint accountability. Important characteristics of the management approach used were: efficient management that capitalized on locally available resources

(project office, UNIDO Head of Operations, experts), UNIDOs efforts to keep transaction costs comparatively low, responsiveness to changed needs of partners and joint-decision making on strategic issues within and outside the steering committee. This type of Joint-execution is a good way to respond to the “alignment objectives” of the Paris Declaration without compromising on aid effectiveness.

Staff selection is a crucial success factor for achieving results. The identification and selection of the right staff, at both headquarter and project levels, was a crucial success factor. Besides interpersonal skills in a multicultural context, staff involved into the implementation of technical cooperation projects should have an entrepreneurial spirit, managerial skills and the ability to acquire technical competencies. In contrast, a relevant university degree and the number of years working within the UN-system seem to be much less important. UNIDO might revisit the selection criteria currently used to select its staff.

The combination of the Hot Spot and TEST approach for a first project phase in the field of “resource efficient and clean production” is innovative and allows for systematically focusing on the major polluters within a country, in order to achieve a maximum impact.

Figure 1: Key strengths and weaknesses of the Project

Key strengths	Key weaknesses
<ul style="list-style-type: none"> • The Project resulted in well documented, significant environmental, economic and some limited social benefits at target companies. • High degree of ownership of MIME, evidenced by integrating key elements of “TEST” in Cambodia’s industrial development strategies and a follow-up project funded with government resources that will apply the TEST methodology in the ice making industry. • Excellent project management during implementation in all regards, including close involvement of counterparts, responsiveness, timely delivery and good quality of outputs, recruitment of the right project staff, empowering them, appropriate use of local expertise, monitoring of outputs, using facilitating role of HUO. • Project created favorable conditions for up-scaling through expanding support to other regions in Cambodia. High potential for replication in other countries. 	<ul style="list-style-type: none"> • Logical framework does not include clear, objectively verifiable indicators (OVIs). Only environmental objectives were defined (although support also aimed at social/economic outcomes). • Limited budget and time did at this stage not yet allow to fully exploiting the potential of the “Hot Spot” Methodology as a tool to specifically address the most critical pollutants. • No clear “exit strategy” articulated at the design stage (yet developed during implementation). • Enforcement of environmental norms, which is besides awareness rising and support to companies a third important pillar for reducing environmental impact, only marginally covered. • Problem of ensuring continuing support to companies through business development service providers not addressed. • UNIDO delivers largely identical support through two initiatives with the same counterpart, once branded as “TEST”, once as “CP”. Coordination limited to some exchange of expertise.

Background, objectives and methodology

1. Background and objectives of the evaluation

This report covers the independent final evaluation of the UNIDO project “Identification, assessment and prioritization of pollution “hot spots” and transfer of environmentally sound technologies (TEST) in the Cambodian section of the Mekong river basin” (Project TF/CMB/10/002– SAP 104083), funded by the Korean International Cooperation Agency (KOICA), subsequently referred to as “the Project”.

The work was undertaken on behalf of UNIDO on the basis of the Terms of Reference (ToRs) attached in Annex 1, the UNIDO Evaluation Policy¹ and the UNEG Evaluation Norms and Standards² by a team of one international³ and one national evaluator.⁴ Both evaluators were selected by UNIDO based on a competitive assessment. They had not been involved in the preparation and/or implementation of the Project⁵.

The field mission took place between 26 May 2013 and 31 May 2013. A de-briefing with UNIDO and KOICA on 17 June 2013 allowed for factual verification of preliminary key findings and conclusions and an in-depth discussion of recommendations.

The purpose of this evaluation was⁶:

- An assessment of the relevance, effectiveness, efficiency and impact of the Project and the potential sustainability of its results by providing an analysis of project objectives, delivery and completion of project outputs/activities, and outcome/impact based on selected indicators.
- Although gender dimensions were not specifically described in the project document, the evaluators were also requested to assess aspects of “gender mainstreaming”, following UNIDO’s guidelines that were provided in Annex 2 of the ToRs.

¹ Available from www.unido.org

² United Nations Evaluation Group (UNEG), Norms for Evaluations in the UN System, April 29, 2005

³ Daniel P. Keller, Director, Swiss Consulting Co. Ltd, Hanoi - Vietnam

⁴ Somith Sok, National Evaluator

⁵ This principle is underlined in the UNIDO Evaluation Policy: “For independent evaluations, the members of an evaluation team must not have been directly responsible for the policy-setting, design or overall management of the subject of evaluation (nor expect to be so in the near future)”.

⁶ According to the ToRs dated 25 February 2013, amended by the evaluator based on the briefing meeting with the Project Manager and the Evaluation Group on 5 May 2013

- An assessment from an environmental perspective whether (a) gains to the individual companies were measured and reported upon, (b) priority was given to preventive approaches wherever possible, and (c) social and/or economic effects of environmental interventions were taken into considerations and/or measured;
- Provide recommendations to enhance similar on-going or future projects (in particular a possible follow-up phase).

2. Project description and intervention logic

The majority of Cambodia's population of around 15 million depends mostly on farming and fishing for their livelihood. The integrity of the Mekong river basin's ecology is thus vital to their social, cultural and economic well-being. The rapid economic and industrial development of Cambodia coupled with growing population pressures degrades the environment. Most industries are located along the Mekong River or its two main tributaries, the Tonle Sap and Tonle Bassac. Due to poor production patterns and lax enforcement of environmental norms, Cambodian industries represent a growing threat to the environment, through excessive raw material use, untreated and wastewater air emissions.

To reduce the environmental footprint of Cambodian industries, UNIDO has been implementing the "Hot-Spot" and "Transfer of Environmentally Sound Technologies (TEST)" methodological approaches in Phnom Penh and its surrounding Kandal province since January 2011. The Project ended on 30 June 2013.

Implemented in cooperation with the Ministry of Industry, Mines and Energy (MIME) of Cambodia, the Project was fully funded by the Korea International Cooperation Agency (KOICA) with a budget of US\$ 900,000. Its overall objective was to reduce the industrial discharge into river systems and improve the water quality of the Mekong River.

The Project combined two methodologies developed by UNIDO:

Firstly, the "Hot-Spot methodology" assesses and prioritizes major polluting sites that are discharging industrial effluents into a river basin. The Hot-Spot component of the project was implemented in 2011. The training of national consultants took place in May 2011 and the field survey and assessment phase lasted until September 2011. More than 500 factories were screened, out of which 44 were assessed based on the following four categories, (a) water quality and human health, (b) biodiversity, (c) pollution control, and (d) socio-economy. Fifteen companies were then prioritized for TEST implementation. Work undertaken resulted in a report that was subsequently shared with MIME.

Secondly, the implementation of the TEST integrated approach in selected enterprises aimed at the improvement of the environmental performance in prioritized hot-spots while increasing their competitiveness through "technological and knowledge transfers". It should be highlighted that *UNIDO's support consisted in advice on rather than funding for technological upgrading.*

Through implementation of the TEST approach in a total of nine companies, UNIDO introduced a number of new "management tools": Environmental

Management Accounting - EMA (ISO 14051), Environmental Management System – EMS (ISO 14001) and Corporate Social Responsibility – CSR (ISO 26000). These tools, which are part of an “integrated methodology”, address the strategic and management level of companies, were complemented by the application of “Resource Efficient and Cleaner Production (RECP)” at the production level (see figure 2), which is essentially a preventive approach to reducing pollution at its source.

Figure 2: Resource Efficient and Cleaner Production (RECP) briefly explained

<p>RECP aims at changing processes, products and services to increase efficiency and reduce risks to humans and the environment. Those changes combine:</p> <ol style="list-style-type: none">1. Good housekeeping: prevents leaks and spills and aims to achieve proper, standardized operation and maintenance procedures and practices;2. Input material change: replacement of hazardous or non-renewable inputs by less hazardous or renewable materials or by materials with a longer service life-time;3. Improvement of process control: modification of working procedures, machine operation and process record keeping. The objective is to operate processes at higher efficiency and with lower rates of waste and emission generation;4. Equipment modification: modification of the production equipment that lead to higher efficiency and lower rates of waste and emission generation;5. Technology change: replacement of the technology, processing sequence and/or synthesis pathway in order to minimize the rates of waste and emission generation during production;6. On-Site recovery/reuse: reuse of the wasted materials in the same process or for another useful application within the company;7. Production of useful by-products: transformation of previously discarded wastes into materials that can be reused or recycled for another application outside the company; and8. Product modification: modification of product characteristics in order to minimize the environmental impacts of the product during or after its use (disposal) or to minimize the environmental impacts of its production.

The combination of the “TEST” service package aimed at triggering a cycle of continuous improvement by developing relevant capacities to ensure that sustainable industrial development principals are mainstreamed at production, management and strategic levels.

The Project further conducted awareness raising seminars in several provinces with the aim to disseminate good practices and raise awareness.

Additional activities were added in the course of implementation with the purpose of (a) awareness raising on the TEST methodology (enterprises and government officials), (b) incentives for environmentally friendly production and (c) strengthening enforcement, and (d) mainstreaming “green industry practices” into industrial policies. Those included support for the establishment of a “Green Industry Award”, advocacy for and support to policy making, a study visit to Korea to familiarize participants with modern technology, and some testing equipment.

The core capacity building tool applied was develop the capacity of the MIME for targeting major industrial polluters through training and joint implementation of the Hot-Spot methodology and demonstration of the benefits of the TEST approach.

At the time of the field mission, support to the Green Industry Award and some provincial awareness seminars had not yet been completed.

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3. Methodology and evaluation approach

In keeping with the UNIDO evaluation policy and while maintaining independence, the evaluation was carried out based on a participatory approach, seeking the views of all parties. The following main evaluation criteria were used for assessing whether the Project has provided the right type of support in the right way:

- **Relevance:** The extent to which project objectives were consistent with beneficiaries' requirements, member countries' needs, global priorities and policies.
- **Efficiency:** How economically resources/inputs (e.g. funds, expertise, time) were converted into results⁷ - i.e. "value for money", including an assessment of quality of service delivery and synergies achieved with other similar programmes.
- **Effectiveness:** The extent to which objectives were achieved, or are expected to be achieved, taking into account their relative importance (e.g. significance of results for companies in terms of environmental or financial performance). The evaluation further explored possible unplanned/unexpected negative/positive outcomes.
- **Sustainability:** An assessment of the likelihood that project benefits will continue after the assistance has been completed.

Different evaluation tools were combined to ensure an evidence-based qualitative and quantitative assessment. Particular emphasis was given to cross-validation (triangulation) of data and an assessment of plausibility of the results obtained. The methodological mix included desk studies, literature review, semi-structured individual interviews, semi-structured interviews of focal groups and direct observation.

Recognizing the important role of enterprises in reducing environmental pollution, a particular emphasis was given to fact finding at the enterprise level. In-depth surveys at all nine companies that have completed the TEST programme and personal observation at enterprises were used to *validate and complement quantitative data* compiled by the Project on outcomes of UNIDO's services. The enterprise survey also provided the factual basis to assess relevance of TEST services for enterprises. Furthermore, the evaluators obtained *qualitative data*,

⁷ This is an economic term which is used to assess the extent to which aid uses the least costly resources possible in order to achieve the desired results. This generally requires comparing alternative approaches to achieving the same outputs, to see whether the most efficient process has been adopted.

including on companies' motivation and general satisfaction of using TEST services, additional benefits of changes observed at the enterprise level and external constraints of implementing TEST recommendations. Through the survey, the evaluators also assessed the relative importance of external contributions to the changes observed (e.g. CSR programmes requested by buyers and other donor funded initiatives).

The evaluators mainly applied deductive reasoning, i.e. based their conclusions and recommendations on evaluation findings.

The main evaluative steps undertaken and evaluation tools applied were:

- Desk study of documents provided by the Project;
- Draft inception report, including stakeholder analysis, matrix of key evaluation questions and questionnaires for enterprise interviews
- Briefing with Project Manager and the Evaluation Group
- Field mission in Cambodia (27 – 31 May 2013)
- De-briefing in the field with the project team and the official counterpart
- Establishing slides (for UNIDO and KOICA separate slideshows), 12 June 2013
- Interview and de-briefing with the Donor (KOICA) by conference call, 17 June 2013
- De-briefing UNIDO Headquarters (in Vienna), 17 June 2013
- Establishing a draft evaluation report and circulating it for comments (15 July 2013)
- Establishing this final evaluation report (23 July 2013).

Whenever possible, while maintaining independence, the evaluators attempted to obtain alignment of key stakeholders on their key conclusions and recommendations. Enrolment of key stakeholders in the evaluation process enhances chances that recommendations are subsequently implemented. Overall, factual information obtained has been comprehensive, consistent and clear. Comments received by UNIDO, MIME and KOICA during the de-briefings were full taken into account in this report. The key evaluation results presented below received endorsement by key stakeholders.

4. Limitations

Key limitation was that the delivery of most of the key outputs has just been completed or was still on-going. At the time this evaluation was conducted (last week of May 2013), many promising developments were about to take place (e.g. policy formulation, the establishment of a “Green Industry Award”, and the preparation of a follow-up project funded by the GoC. It was therefore too early to provide an assessment of impact and potential sustainability. The evaluators therefore assessed the likelihood of sustainability and possible impact. Assuming that the results at

II

Findings and assessment

enterprise level are significant, the evaluators therefore specifically looked at what is needed to achieve a broader impact and to sustain it (“theory of change”). This required exploring on-project related constraints to implementing environmental measures.

The project did not include gender objectives and therefore did also not collect data on “gender mainstreaming”. In order to address this limitation, the evaluators attempted to gather some data ex post, which was rather challenging.

As TEST is for the first time applied in Cambodia and includes elements that were not part of the traditional CP methodology, it will not be possible to validate data against a reference group of companies that benefitted from similar services from “competitors”⁸.

Nevertheless, despite these limitations, the evaluators were able to collect sufficient factual information to provide a well-founded assessment.

1. Project preparation

The Project was timely and a good response to a clearly defined, urgent and important development challenge: addressing the problem of industrial pollution in one specific geographical area (Mekong basin) where pollution potentially causes the most severe impact on the environment and the livelihood of the local population.

The combination of the “Hot Spot” and the TEST methodology is innovative and an effective approach to systematically tackle (a) the larger polluters and (b) emissions that cause the most severe environmental impact. While TEST applies largely the same tools as the traditional “CP” or “RECP” methodology (see figure 2 above), the different elements are now systematically introduced in the form of clearly distinctive modules. While CSR, EMA and EMS target the strategic level of the companies, RECP focuses more on the operational level.

The project document, which underwent UNIDO’s approval process in less than one month in order to quickly respond to a request of KOICA, leaves some room for improvement. No proper framework for Result-Based Monitoring was developed. Missing are in particular specific targets that are linked to Objectively Verifiable Indicators (OVIs) as a basis to assess planned against achieved results. Furthermore,

⁸ The IFC also provided “environmental assessments” under the Mekong Project Development Facility (MPDF), but those were merely quick screenings. The CP Center has applied UNIDO’s traditional “RECP-approach” plus some derivations of this methodology. The last evaluation of the CP Centre was done in 2008 by the international evaluator.

the project document does not include a budget that presents the different in a matrix form according to budget lines and different outcomes.

A clear management structure with detailed responsibilities that match competencies to decide was not defined, but developed ad hoc during implementation. The excellent management at operational and strategic levels (see II.3) was a result of the good performance of the project team and the good cooperation of MIME rather than of a sound project preparation.

While the project duration of two years and the budget of US\$ 900,000 were commensurate to achieve the expected outcome (“capacities of counterparts”), they were too limited to really achieve a broader environmental impact in Cambodia. Although not mentioned in the project document, the Project was of pilot nature with an implicit need for sustained follow-up.

An exit or sustainability strategy beyond capacity building was only developed during the Project, by adding additional elements aiming at ensuring the continuation of benefits beyond initial support, such as for instance the “Green Industry Award” and efforts to mainstream the TEST approach into government policies.

It should be highlighted that the above mentioned shortcomings in project preparation did neither affect project implementation nor the operational and financial monitoring of results.

2. Relevance

The assessment of relevance looks at the extent to which the objectives of the projects were consistent with the requirements of the end-users, the GoC, international priorities and donor policies.

A. Relevance of objectives to Cambodia’s environmental problems in general

All stakeholders interviewed agreed that industrial pollution is a significant threat for the environment in Cambodia, compared with other forms of pollution. The “Hot Spot Report” produced by the Project⁹ confirmed that industrial pollution is a major source of pollution of rivers, air and soil. The different elements of the “TEST methodology” are obviously an effective tool to reduce environmental pollution at the source (preventive approach). The potential of the TEST methodology to reduce Greenhouse Gases and global warming was highlighted by several stakeholders as well. Stakeholder interviews however also concluded that industrial pollution is only one of numerous threats to Cambodia’s environment. Other environmental threats mentioned were: deforestation, pollution caused by agriculture and aquaculture. A major source of pollution is reportedly the excessive use of fertilizer, chemicals, and agricultural waste. As a “point source” form of pollution with a high concentration rate, industrial pollution is easily recognizable, while other types of pollution (traffic, agriculture, fisheries, household waste) are “non-point type of pollution sources” and

⁹ See detailed assessment in the “Hot Spot Report”: Ministry of Industry, Mines and Energy/UNIDO, Identification, Assessment and Prioritization of Pollution “Hot Spots” in the Cambodian Section of the Mekong River Basin, National Report, 2012.

thus more difficult to be noticed. Ranking the relative importance of different types of pollutions in Cambodia would require further extensive research.

While project objectives are of high on-going relevance to the improvement of Cambodia's environmental performance, tackling industrial pollution addresses only one of several threats to the environment and needs to be combined with other measures.

B. Relevance of objectives to international priorities

The project is highly relevant to addressing the global challenges of industrial pollution and high industrial resource use – issues that several Multilateral Environmental Agreements (MEAs) aim to mitigate. It is of particular relevance to the “Green Industry Initiative” (Manila Declaration) endorsed by the GoC. A reduction of material, energy and pollution intensity per unit of industrial output reduces the overall ecological footprints (carbon, water, etc.), while at the same time improving productivity and competitiveness through cost savings. All of this is essential for the ultimate goal of decoupling economic growth from increased resource use and further environmental degradation, which also affects the livelihood of the population in terms of health, income and wellbeing. The objectives of implementing the TEST methodology address productivity, environmental and social imperatives in parallel.

By doing so, the Project's objectives directly contribute to Millennium Development Goal (MDG) 7 (environmental sustainability)¹⁰. More indirectly, project objectives *potentially* also contribute to MDG 1 (eradicating extreme hunger and poverty). More productive and competitive industries are more likely to create jobs and pay higher salaries, which in Cambodia are important as supplementary incomes for rural workers. A competitive industry potentially contributes to the creation of employment, higher salaries and increases of tax revenues, which both have a direct link to poverty reduction.

Beyond this, river pollution affects the livelihoods of many more people living along the Mekong River. The relevance of reducing industrial pollution to MDG 1 also extends to the people's health and wellbeing, thus to broader aim to reduce “multidimensional” poverty. Medical cost to cure health damage caused by pollution puts a significant burden on people and the state. The cost for curing environmentally related diseases further limits the purchasing power of the poor and impacts their ability to earn a living. This indicates that the relevance of the “TEST” methodology goes beyond merely environmental and competitiveness aspects and also contributes more indirectly to poverty reduction.¹¹

Furthermore, some objectives of the TEST methodology (in particular the CSR component) are also relevant to MDG 3 (promote gender equality and empower women), as most of the target companies (garment sector) employ a large percentage of female workers.

¹⁰ Including target 7A “integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources” and target 7B, “reduce biodiversity loss” (although the “Hot Spot Report” was not conclusive on possible relevance of the Project to protecting biodiversity).

¹¹ See also UNIDO, Desk review, What has UNIDO done to reduce poverty – Evidence from UNIDO evaluations 2008 and 2009, 2010

C. Policy relevance and relevance for MIME

Policy relevance was high. The Project aligned well with different national industrial development policies, in particular with the sustainability objectives of the Cambodian Industrial Policy (2013 – 2018) and the National Strategic Plan on Green Growth (2013 – 2030 approved by the Council of Ministers on 1 March 2013, which also established a “National Council of Green Growth”.¹²

The Project fully met the needs of MIME in regards to capacity building of staff and demonstrating good practices on tackling industrial pollution as a policy input. It should be noted that MIME was primarily looking for capacity building in (a) policy making and (b) awareness rising as opposed to service provision.

D. Relevance for beneficiary companies

The enterprise survey concluded that the Project was of high relevance to companies that directly benefitted from it. All companies confirmed that support provided was well tailored to company needs. Remarkably, in all companies, productivity and competitiveness benefits of implementing TEST were seen as significantly more important than improving their environmental track record (see also assessment of effectiveness in section II.3 below).

For *domestic* companies selling products in Cambodia, environmental benefits were not a key reason to participate in the programme.

For *exporting* companies selling to multi-national supply chains (garment sector, including laundry) however, environmental benefits were important as far as their improved environmental performance addressed concerns of their international buyers.

E. Relevance in regards to UNIDO’s core mandate

The project objectives are obviously fully in line with UNIDO’s core mandate to promote sustainable industrial development in developing countries. Moreover, they are also relevant to UNIDO’s core objectives to promote the integration of developing countries in global trade through fostering competitiveness and environmental sustainability of industries.

F. Relevance to the UN-Framework in Cambodia

The Project has been fully aligned with the core objectives of the UN-Programme in Cambodia reflected in the UNDAF framework¹³, in particular to its Outcome 1 “By 2015, more people living in Cambodia benefit from, and participate in, increasingly equitable, green, diversified economic growth”. Under this objective, the UN committed to provide “technical assistance will be provided to both the public and private sector to promote clean and environmentally friendly technologies and to reduce GHG emissions while promoting a low-carbon development agenda and improving resource productivity”.

¹² Only a provisional “Executive Summary” in English was available for study on site

¹³ See United Nations Development Assistance Framework, 2011-2015, 26 January 2010

G. Relevance to KOICA

The Project is of high relevance and of strategic importance to KOICA. It has a high future potential to capitalize on Korea's experience in "greening its" industry through advanced technology. KOICA emphasized on the needs to ensure a close involvement of its large industry players and benefit from the capacities available in Korea, including the Korea Technology Transfer Center (KTTC).

3. Effectiveness

Effectiveness looks at the extent to which the development objectives of an intervention were or are expected to be achieved.

The overall objective of the Project was "to reduce the industrial discharge into river systems and improve the water quality of the Mekong River through implementation of the TEST methodology at selected enterprises representing pollution hot-spots. Through training and joint-implementation of the "Hot Spot Methodology", the Project aimed at strengthening the capacities of MIME to target major industrial polluters. Piloting the TEST methodology at selected enterprises aimed at demonstrating good practices in preventing negative social and environmental impact from industrial activities. Finally, the Project aimed at disseminating lessons learned on sustainable industrial production.

The quality of project outputs is assessed in section II.4 (efficiency) below.

A. Project outputs

Output 1: Mekong river pollution hot spots identified, assessed and prioritized

The Project conducted a baseline study on quality of water in Mekong river basin and the quality of water intake and wastewater of some companies in Phnom Penh and Kandal.

In order to do so, 11 samples from the Cambodian section of Mekong river basin and 10 samples from five companies were tested against 30 parameters. In addition to a brief introduction on the Hot Spot methodology for 13 government officials, five national experts from MIME were extensively trained on Hot Spot methodology. Subsequently, the Hot Spot Methodology was implemented. Based on a screening of around 500 enterprises, 44 companies were selected for a detailed evaluation and among those, 15 were pre-selected for the implementation of the TEST methodology (output 2). Key deliverable was a "Hot Spot" Report¹⁴ that identified major pollutants and their environmental and social effects.

Output 2: TEST training delivered

¹⁴ Hot Spot Report": Ministry of Industry, Mines and Energy/UNIDO, Identification, Assessment and Prioritization of Pollution "Hot Spots" in the Cambodian Section of the Mekong River Basin, National Report, 2012.

Following an initial awareness raising seminar, which introduced 70 people to the TEST methodology, 27 specialists (19 from enterprises and 8 from MIME) received training in implementing the TEST methodology.

Output 3: TEST integrated approach introduced at the demonstration enterprises

The intention was to introduce and pilot the “TEST” approach in selected demonstration enterprises. The TEST includes the combination of a number of management tools that aim at enhancing the environmental, financial and “social” performance of companies. Tools introduced included EMA (ISO 14051), EMS (ISO 14001) and CSR (ISO 26000). These tools address the strategic and management level of a company and were complemented by the introduction of Resource Efficiency and Cleaner Production (RECP) at the production level.

UNIDO’s aim was to trigger a cycle of continuous improvements towards sustainable industrial production through mainstreaming these tools at the operational and strategic management levels. Outputs reported by the Project¹⁵ were selectively validated through personal observation during on-site visits and interviews by the evaluators.

Unlike the name “TEST” might imply, *the Project did not transfer or fund new technology.*

- (a) **“RECP” assessment:** A “RECP assessment” was carried out in 11 companies (two pulp & paper processing factories, three enterprises in the food & beverage sector, four garments manufacturers, and one paint producing company). For each company, an assessment report was prepared that included recommendations to improve the production processes. Two companies subsequently decided not to follow the programme, mainly due to concerns about disclosing production data.
- (b) **EMA:** The Project provided training in EMA and conducted an EMA assessment and implementation in a total of nine companies. An assessment report with finding and recommendation was prepared for each beneficiary company.
- (c) **EMS:** Following a training workshop, the Project looked into the potential of implementing EMS in eight companies, which is documented in assessment reports.
- (d) **CSR:** A one day “rapid” CSR assessment was conducted in eight companies, which resulted in specific reports with recommendations. Contrary to the annual report for 2012, no evidence for support to CSR implementation was found (e.g. establishing a strategy). One company was not covered due to its small size.
- (e) **Support to the implementation of “RECP” options:** nine target companies, all of them visited by the evaluation team, received advice and hands-on support

¹⁵ Annual progress reports 2011 and 2012 and technical reports (see detailed list in Annex 2)

in implementing the recommended RECP options. This included a training session on “Safe operation and maintenance of boiler” as well as an assessment of the wastewater treatment plant.

Output 4: Lessons learned during the Project disseminated

The Project established “case studies” summarizing the key results achieved for nine enterprises (see detailed list in Annex 2). During the visit of the evaluation team, a number of “awareness raising seminars” in other provinces were under preparation.

Additional, originally not planned outputs:

- **Procurement of laboratory equipment:** With the aim to assist MIME in enforcing environmental norms, the Industrial Laboratory Center of Cambodia (ILCC) received a set of portable laboratory equipment including one spectrophotometer, a multi-meter, and a number of heavy metal test-kits. The evaluators received confirmation that the equipment was available, but were not able to check this through personal observation.
- **Development of Cambodian Green Industry:** A proposal for a Cambodian Green Industry award was developed and launched in June 2013 (after the field visit).
- **A study tour to Republic of Korea** with on-site visits to companies was organized for 14 participants (nine from the companies, three from the Project, and two from General Department of Industry), most of whom were interviewed during the field mission.

B. Outcomes

(a) “Hot Spot Report”

The Hot Spot Report was mainly used to identify major polluters to be targeted by the Project. Within the short time available and considering the very limited data on industrial pollution available in Cambodia, it was not possible to fully exploit the potential the Hot Spot methodology. In more advanced countries, where more data on pollution is already available, it would for instance also be possible to identify specific pollutants that generate the severest environmental impact and assess their hazard to the population or the eco-system, e.g. on biodiversity. This would allow for fine-tuning support in prioritizing the mitigation of those substances while implementing TEST. Due to concerns about confidentiality of data, the hot spot report was not widely publicized and even not widely distributed within Cambodian government agencies. For MIME, the key benefit of the Hot Spot Report was to use it as a leverage to lobby for its policies for integrating “sustainable production” into the GoC’s industrial policies through presenting an objective, scientific evidence base.

Resource savings at company levels

The Project reported that the implementation of totally 380 “RECP-options” at nine beneficiary companies resulted in approximately 400,000 m³ of water savings and 5

million Kwh of electricity savings annually. Furthermore, US\$ 200,000 in private investments into clean technology was generated as a follow-up. In validating these figures through in-depth interviews with beneficiary companies, the evaluators noted some, both negative and positive, discrepancies between the resource savings reported by the Project and those beneficiary companies reported during in-depth interviews. Not all companies seem to account for resource use in the same way. One company visited for instance accounted for water savings, but not the energy savings achieved through reducing the use of the water pumps. Furthermore, the evaluators noted that one company was in the process to purchase eight new boiling tanks that will lead to significant additional energy savings (not recommended by the Project), which reportedly cost around US\$ 100,000. Management confirmed that their decision to buy new boiling tanks was influenced by the “RECP” support. Thus, relating future resource savings would (at least partially) also be attributable to the Project. In contrast, some other (not reported) additional investments the evaluators observed at beneficiary companies would not be directly attributable to the Project, as they were driven by other factors (e.g. enlargement of production at one carton producer and internal “continuous improvement programme” at one bottling company).

Analysis of implementation of RECP options: Interviews with companies further revealed that the percentage of implemented versus recommended “RECP options” was generally high, in particular regarding low-cost options. All companies reported that they had implemented “most of the “RECP options” recommended”, which indicates that Project rightly paid attention to the feasibility of recommendations.

Type of RECP options implemented: good housekeeping, improvement of process control, and technology change were the most important changes made. Less important were replacement of input material (chemicals) and on-site recovery/reuse. Only two non-exporting out of nine companies reported product or process modification and production of useful by-products. The key reason might be the selection of industries. For garment companies catering to multi-national supply chains or a bottling company that is a licensee of a large international beverage group, it is nearly impossible to modify products or production processes.

Motivational factors to engaging into the TEST Programme: According to the company interviews, the motivating factor to engage into “RECP” is clearly the increase of productivity through cost savings. Environmental awareness still plays a marginal role. Higher competitiveness through productivity improvements are thus the “key selling point” for implementing “TEST”. For companies selling to international buyers, environmental concerns of clients are another important motivating factor. Three companies reported that their buyers were specifically asking for evidence of an environmental management system.

Financial aspects: None of the companies reported challenges in accessing investment capital for technological upgrading, which contrasts with the situation in other countries, for instance Vietnam, where donors have established financial

facilities that fund investments into Green Technology¹⁶. Generally, pay-back periods of investments made are in average less than a year, which indicates a high efficiency of investments made.

Relative importance of resource savings at company level: Resource savings (energy and water) as a percentage of total resource use vary significantly among companies. The considerable difference among companies of the same sector indicates that in most cases, the potential for resource savings depends on the “baseline”. As most companies were not willing to disclose their financial figures in detail to the Project and the evaluators, it was not possible to assess the relative importance of cost savings to total production cost and thus the overall impact on competitiveness of each company.

(b) Other outcomes at company level

Labour conditions: Improvements of labour conditions observed generated by project outputs were rather limited. The modification of the boiling tank system of one food producer significantly reduced the heat workers are exposed to. Two companies reported that due to productivity improvements, they were able to pay higher salaries to workers. All other companies did not report any social impact of the TEST methodology. The improvement of working conditions in all of the exporting companies is clearly driven by compliance with buyers’ requirements.

Generally, the implementation of some of the concepts introduced by the TEST methodology (in particular CSR policies) would require commitment of the General Management or even the Board level. While the top management of the smaller, local companies was closely involved into project activities, this was not the case in the larger, foreign-invested businesses, where the General Managers are not present in Cambodia and mainly focusing on sales. This might also be an explanation of why the Project was successful in generating positive changes at the production level, but encountered challenges in implementing more strategic concepts, such as CSR.

(c) Unexpected outcomes at the policy level

The Project was successful to enrol MIME in mainstreaming the “TEST approach” into its industrial development policies, which is a remarkable unplanned outcome. Applying TEST across Cambodia’s industrial fabric is now an official policy. This is an excellent example of linking the demonstration of good practices to the policy level, which used to be a weakness of several other UNIDO projects that focused more on technical than policy issues. The close involvement of MIME into the Project’s implementation (Hot Spot Assessment and the implementation of TEST at enterprises) was instrumental. The fact that MIME is currently preparing a nationally funded “TEST Project” focusing on household ice producers shows the GoC’s commitment to translate the policy into specific actions.

¹⁶ E.g. the “Green Credit Trust Fund” funded by the Government of Switzerland and implemented in cooperation with the Vietnam Cleaner Production Centre and local banks.

4. Efficiency

This section looks at how economically inputs were converted into outputs.

Generally, the Project made economic use of resources. Examples are that cars were rented when needed rather than purchased and the Project's focus on targeted practical capacity building rather than generic awareness rising.

The financial analysis provides evidence that a large percentage of budget resources were translated into activities that led to tangible benefits of high relevance to beneficiaries with relatively moderate transaction costs.

The Project made extensive use of local expertise (34.2% of the cost) versus only 22.6% for international consultants. The cost for equipment procurement was low (4.8%), which is typical for projects with a strong capacity building focus.

Last but not least, it should also be mentioned that project preparation was entirely funded by UNIDO's internal resources and not accounted for by the project.

A. Financial implementation

Figure 3: Expenditures according to outputs and UN budget lines (unofficial figures)

Expenditures by budget lines/type of input (agency support cost), status: 14 May 2013		Hot Spot Component	Test Component	Dissemination	Total	In percent of total budget
1100	International Experts/Consultants	61,800.00	65,524.80	34,569.00	161,893.80	22.6%
1500	Travel of project staff	5,998.60	28,393.57	13,297.48	47,689.65	6.7%
1600	Other Personnel Costs	22,636.58	23,721.36	7,871.60	54,229.54	7.6%
1700	National Experts/Consultants	55,555.82	140,426.18	48,584.44	244,566.44	34.2%
2100	Subcontracts	38,407.35	19,427.49	567.63	58,402.47	8.2%
3000	Trainings/Fellowships/Study Tours	20,998.64	55,500.30	17,978.39	94,477.33	13.2%
4500	Equipment	21,256.18	1,108.38	12,193.52	34,558.08	4.8%
5100	Sundries	8,156.51	5,885.68	4,970.00	19,012.19	2.7%
	Total	234,809.68	339,987.75	140,032.06	714,829.49	100%
	In % of total budget spent (rounded)	32.8%	47.6%	19.6%	100%	

Source: Figures reported by the Project Manager on 14 May 2013 (analysis by evaluators), official figures were only available until the end of 2012

B. Quality of outputs

Generally, all outputs were delivered timely and in good quality. MIME highlighted the importance of the skill transfer to its staff and to managers at beneficiary companies.

Company interviews evidenced a high satisfaction rate of all companies that benefitted from TEST support. Both training and hands-on support at company level received excellent marks. All companies stated that they would be highly interested in receiving additional assistance through UNIDO. While some of the concepts the Project introduced (CSR, EMA, EMS) were considered as useful, they are not directly applicable to smaller companies. On the other hand, for some of the larger companies that already received certification according to different environmental and social standards, the training did not really add much value.

Among the different trainings, all companies considered the one-day CSR module as rather generic and short. Furthermore, there might be a need to tailor support more specifically to the size and priorities of businesses. One small business for instance proudly informed the evaluators that they are considering obtaining ISO14000 certification, resulting in costs that would by far outweigh the benefits for a small company selling to the domestic market.

While the study visit to Korea was considered as useful, participants from the garment sector would have appreciated a visit to a peer company to familiarize themselves with industry-specific best practices.

C. Project management and implementation

Overall, project management was *highly satisfactory*, although the project document did not define a specific management structure and the framework of result-based monitoring in project design was rather weak. The following key principles that were applied could serve as examples for other UNIDO projects:

- The project was *strategically* clearly partner-led, which led to a high degree of relevance and to a take-up of the good practices demonstrated through the “Hot Spot” and TEST methodology. MIME was closely involved into implementation, regularly consulted and expressed needs were taken into consideration.
- UNIDO selected the right staff. The Project Manager in Vienna and the local project team seem to combine both managerial and technical skills. The local staff was empowered rather than micro-managed from afar. The excellent team was one of the key factors that allowed UNIDO to consistently deliver on commitments and to respond timely to the evolving needs of counterparts (e.g. adding a study visit to familiarize participants with state-of-the-art technology in Korea, measuring equipment for MIME and the Green Company Award, and policy advice). The UNIDO Head of Operations (UHO) in Phnom Penh was regularly consulted. The Project capitalized on this experience by taking his advice on strategic and operational matters seriously into account.
- Local experts, including MIME staff, worked hand in hand with international experts, which ensured capacity building at all levels of counterparts and also contributed to MIME’s ownership. This contrasts with a number of other projects

in Cambodia known to the evaluators, which are perceived as to be fully operated by donor agencies.

- Results at output and outcome level were regularly monitored, documented and disseminated.
- In addition to UNIDO's requirements to report expenditures according to UN budget lines, the Project established a result-based financial report, presenting expenditures as a matrix, linking them both to UN budget lines and outcomes.
- Particularly remarkable in the Cambodian context, where enterprises have received abundant donor support of sometimes rather mixed quality, is the trust fostered with companies by "speaking their language". This is also evidenced by the willingness of most companies to share detailed information with the project staff and the evaluators, even on rather sensitive topics, such as corruption.

Appointment of the right project personnel and consistent application of good project management practices were a key success factor for efficiently achieving results.

D. Synergies with other donor interventions

Synergies with other UNIDO projects in Cambodia were rather limited. Examples include some "staff exchanges" with the CP Office within MIME, which is operated by UNIDO. Otherwise, the evaluators found no evidence that UNIDO was able to capitalize on the significant potential between the Project and other UNIDO interventions in the field of environment, including the Project "Reducing Greenhouse Gas Emissions through Improved Energy Efficiency in the Industrial Sectors in Cambodia"¹⁷. The CP Office, funded by Switzerland, had apparently even not received a copy of the "Hot Spot Report", reportedly because they had not asked for it. The Project did not have any contact with the UNIDO project in the field of SMTQ executed by the TCB branch in cooperation with MIME.

On the other hand, the use of expertise of the Vietnam Cleaner Production Center to deliver the module on EMS is a good example of promoting South-to-South Cooperation. Moreover, the Project seems to have been in close contact with the ILO "Better Factory Programme" (with some shared objectives). Some material was reportedly exchanged as well. Last but not least, some synergies were achieved with the EU-funded CSR Project implemented by UNIDO in Vietnam (expertise for the CSR module).

5. Sustainability

This section looks at the likelihood of continued benefits beyond the end of the project.

¹⁷ Funded by the Global Environment Facility (Green Environment Fund) implemented by UNIDO and executed by the National Cleaner Production Office under MIME. The objective of this project is to improve the energy efficiency of Cambodia's industrial sectors, leading to reduced global environmental impact from Green House Gas emissions and enhanced competitiveness for the industrial sector in a country with an energy deficit. Source: programme description obtained from the HUO.

A. Policy level

The application of the TEST methodology has been mainstreamed into national industrial development policies. MIME seems to be committed to continue supporting the implementation of the TEST methodology at enterprises. However, without a follow-up phase, this is likely to take considerable time, considering the limited national resources available.

B. Benefits at company level

All nine companies visited by the evaluators have established dedicated teams that expressed a strong commitment to continuous improvement in applying principles of sustainable production. The fact that some companies have recently invested into new equipment (as an own initiative, independent from recommendations provided by the Project) provides additional evidence of a strong commitment, which is essential to ensure continuation of benefits. Nevertheless, it seems questionable whether they will really be able to bring their businesses to a different level without further external support, e.g. through specialized consultants. Availability of consulting services and a local expert pool is essential!

C. Sustainability at a broader level

Achieving and maintaining a broader longer term impact will need additional external support, in particular:

- Up-scaling of the TEST Programme to other regions and industries to enhance a positive impact on the water quality of the Mekong River.
- Institutionalizing the “Green Industry Award”: This requires a permanent, transparent and effective governance framework as well as a dedicated budget.
- Additional incentives for companies for investments into environmentally sound technology, such as for instance tax incentives.
- Strengthening the enforcement of environmental norms, including stringent controls at the pre- and post-licensing stage and severe penalties that make polluting practices financially unattractive.
- Institutionalizing training for TEST specialists in order to create a pool of qualified local experts available for the industry and the government.
- The development of service providers, which are able to support the companies in shifting towards sustainable industrial production. In order to avoid conflict of interests, such services should obviously not be provided by MIME as a regulatory and enforcement agency. The “CP Office” under MIME would only be able to fulfill this function if it gradually transformed from a project setting into a service provider, similarly to the VNCPC under the Hanoi University of Technology.
- Strengthening awareness rising among consumers and the broader public to gradually increase public pressure on creating and maintaining a clean environment.
- Stronger lobbying with and involvement of international buyers of Cambodian export products (in particular in the garment sector) who have a strong leverage

on their suppliers and a strong need to maintain their good reputation in their key markets.

Considering the positive developments, follow-up support should be of high priority. As KOICA has expressed a strong interest on continue funding a next phase, work on project preparation should be started as soon as possible.

6. Gender

The project did neither have gender-specific objectives nor did its monitoring/reporting incorporate gender dimensions. No gender analysis was conducted at the design stage. The evaluation also found no indication that gender was considered in the selection of project staff or beneficiaries.

Interviews revealed that that companies covered by the project included a large number of female workers. Female workers in garment companies could potentially benefit from improved labor conditions and employment creation as potential outcomes of the TEST methodology. The assessment of outcomes made above did however not provide evidence for significant benefits for them in terms of employment creation and improved labor conditions as a result of the project. According to the interviews with companies, the improvement of labor conditions is in all companies except one largely driven by the requirements of international buyers.

It was at this stage too early to assess the potential broader socio-economic impact of the Project in general. But it would be interesting to look at the questions on how environmental improvements affect both women and men, for instance by disaggregating pollution impact on the population by genders. This would require extensive further research that exceeds the scope of a project evaluation, but it could be part of the TEST methodology and of an impact assessment.

III

Conclusions and overall rating

1. Conclusions

High relevance of objectives and quality of UNIDO's service delivery led to tangible results

Project objectives were fully aligned with national and international priorities, including the MDGs. Industrial pollution is a significant, although not the only hazard for Cambodia's environment and the Mekong River. The preventive approach to tackle industrial pollution was of high relevance to all beneficiaries. Both MIME as the direct counterpart and companies benefitting from TEST services were highly satisfied with UNIDO's support. High quality of service delivery resulted in significant resource and cost savings at targeted companies. It is at this stage too early to assess the Project's wider benefits on environment and livelihoods of the population at the impact level. Key benefits for companies are improved competitiveness and reduced environmental impact of production. Social benefits of the project in terms of improving labor conditions (including salaries) were less important. The TEST approach did not have any impact on product quality.

Combination of the "Hot Spot" and "TEST" methodologies was innovative

The combination of the "Hot Spot Methodology" with the "TEST Methodology" under the Project addressed a weakness of other "RECP" initiatives, which was not to systematically identify and target major polluters. The lack of existing data and the short project duration did however not allow for fully exploiting the potential of the TEST methodology, such as for instance focusing on the most hazardous water pollutants and tackling them systematically.

The choice of appropriate staff and the execution modalities contributed significantly to the achievement of results and reflect best practices in project management

Excellent project management was a key success factor. Timely delivery of outputs in good quality, responsiveness to the expressed needs of the counterparts resulted in a high satisfaction and ownership of all beneficiaries (government and companies). Highly motivated staff with both managerial and technical skills at both field- and

headquarter levels were able to drive the project forward. Although the Project formally applied UNIDO's traditional full-fledged agency execution mode, it was in practice partner-led. Moreover, the Project Manager closely consulted with the project team and the HUU and took their advice in operational decision making into account rather than micro-managing the colleagues in the field. The way the Project was managed at headquarter and country level is best practice and should serve as a role model for UNIDO! Excellent joint-management led to a high degree of ownership by MIME and beneficiary companies.

Buyers' requirements of exporters and cost savings leading to higher competitiveness are the key motivation for companies to engage in environmentally friendly production

In the absence of strictly enforced environmental norms, achieving cost savings seems to be the key - if not only - motivation for domestic companies to apply the TEST methodology. In addition, for companies selling into multi-national supply chains in the garment sector, compliance with environmental and social standards of their buyers is a strong driving force to engage into environmentally friendly production. This implies that UNIDO needs to closely work with key international buyers and prioritize support that leads in significant cost savings for companies.

Sustainability of results requires additional support and a strengthening the enforcement of environmental norms through incentives and strong sanctions

The Project Document does not include a sustainability strategy. Important elements of support that are essential to ensure continuation of benefits were however added during implementation, including limited support to enforcement of environmental norms (measuring equipment), the Green Industry Award as an incentive for companies to continue their efforts towards sustainable production and some input to policy making. While the TEST approach is part of the GoC's industrial strategy and MIME is committed to continue applying the TEST methodology through an own follow-up project focusing on the ice producing industry, further UNIDO support would allow the government to up-scale and consolidate results at a much faster pace. Sustainability of the Green Industry Award requires institutionalization. While the Green Industry Award is a good way to raise awareness, stronger measures are needed to make "green production" financially attractive for companies. Besides monetary incentives (e.g. through favorable tax policies), there is also significant room for strengthening the enforcement of environmental norms.

The Project has not yet addressed the problem of institutionalizing service provision to companies. Furthermore, expertise remains scarce unless core elements of the TEST- and Hot Spot methodologies" are mainstreamed into the curriculum of technical students. Both are crucial for the long-term sustainability of project results. A possible option to explore would be to transform the existing CP Office under MIME into a public service provider to be hosted by an appropriate counterpart institution, similar to the Vietnam Cleaner Production Center under the Hanoi University of Technology.

Gender

The Project did neither have any gender-related objectives, nor was reporting on results disaggregated according to genders.

2. Overall rating of the Project

Criterion	Evaluators' comments	Evaluators' rating
Relevance	Fully in line with international priorities, national policies and the needs of target enterprises.	Highly satisfactory
Achievement of results		
Effectiveness	Substantial, tangible results achieved at enterprises level; TEST is integrated into Cambodia's industrial development strategy!	Highly satisfactory
Efficiency	Good quality of outputs delivered, reflected by high satisfaction of beneficiaries and counterparts.	Highly satisfactory
Project management		Highly satisfactory
National management	Close involvement and high degree of ownership, reflected by policy take-up and national replication of project.	Highly satisfactory
UNIDO management	Meets good practices in project management; selection of the right staff, good coordination with counterparts and HUU.	Highly satisfactory
Monitoring/self-evaluation	Detailed documentation of results at enterprise level. Report not against logical framework (which was not in line with good practices)	Satisfactory
Synergies	Attempt to capitalize on synergies with other UNIDO projects/partners in Vietnam, partially with the ILO. Cooperation with CP Office within MIME limited.	Satisfactory
Sustainability of outcomes		Moderately unlikely
Outcomes	Results at company and policy levels are likely to be sustained, but not Mekong river pollution on a wider scale without further follow-up	Moderately unlikely
Contextual factors	Policy implementation, legal framework and its enforcement. Without follow-up support service provision to companies not ensured.	Moderately unlikely
UNIDO-specific ratings		Satisfactory
Quality at entry		Moderately satisfactory

IV

Recommendations and lessons learned

Implementation approach		Highly satisfactory
Overall rating		Satisfactory

1. Recommendations

A. Recommendations to UNIDO

Project specific recommendations

- (1) Submit a proposal for a follow-up phase to KOICA and MIME for continuing UNIDO support in addressing pollution in the Mekong River Basin in Cambodia, while at the same time strengthening the competitiveness of local industries along the following lines:
 - a. Provide assistance to MIME in the on-going process of formulation of policies and laws relating to environmentally friendly and resource efficient production;
 - b. Upscale the application of the TEST methodology in other geographical areas and for other industrial sectors, prioritizing those where a major impact on pollution reduction can be achieved, based on additional “Hot Spot” Assessments where needed;
 - c. Continue awareness raising and advocacy efforts targeting the government, enterprises, consumers and international buyers;
 - d. Assist the GoC to establish incentives for environmentally friendly production and to develop and enforce environmentally friendly norms;
 - e. Institutionalize the “Green Industry Award”;
 - f. Provide support to integrate the TEST methodology into the curricula of technical students through cooperation with an appropriate university, e.g. the Institute of Technology of Cambodia.

General recommendations to UNIDO relating to Cambodia

- (2) In working with companies that supply to multi-national supply chains, UNIDO should closely involve their buyers to leverage on their influence in enrolling companies to comply with environmental and social standards.
- (3) In order to enhance long-term sustainability of results at company level, ensure access of companies to “TEST-services” through cooperation with an appropriate

partner institution that is able and willing to provide support to companies on a commercial basis. At the same time, the problem of overlapping service provision by the “Cleaner Production Office” supported by UNIDO and the “TEST Project”, both hosted by MIME should be addressed. One way would be to transfer the “Cleaner Production Office” into an appropriate host institution and to develop it into a service provider. Lessons learned from UNIDO’s “RECP network”, in particular the VNCPC should be taken into account.

General recommendations to UNIDO

- (4) Based on a systematic assessment, UNIDO should for each country take a decision on whether the TEST or the RECP approach is more effective in reaching specific development objectives and then apply one methodology consistently.
- (5) Technical, managerial, entrepreneurial and interpersonal skills should be equally weighted in selecting project staff at headquarter and field levels.
- (6) Consider combining the Hot Spot methodology with the “RECP” methodology in countries where the TEST approach is not (yet) applied.

B. Recommendations to KOICA

- (1) Consider funding a follow-up phase along the lines suggested in recommendation A.1.
- (2) Consider cooperating with UNIDO in replicating the Hot Spot/TEST approach in other countries in South East Asia, in particular in Lao PDR. New projects need to take the specific country context into account.

C. Recommendations to MIME

- (1) Respond favourably to a proposal for a follow-up phase along the lines suggested in recommendation A.1 above.
- (2) Strengthen the enforcement of environmental norms, both at the pre- and post-licencing stage and consider establishing a system of monetary incentives (e.g. tax deductions) for investment in “clean technology”.

2. Lessons learned

A. On execution modalities

The “Joint-Execution Modality” UNIDO applied in practice, is a suitable management model for technical capacity building projects. Its key feature, “joint decision making”, allows both UNIDO and counterparts to focus on their particular strengths, thus jointly contributing to the achievement of objectives. Joint responsibility in turn fosters joint accountability. Important characteristics of the management approach used were: efficient management that capitalized on locally available resources

(project office, UNIDO Head of Operations, experts), UNIDO's efforts to keep transaction costs comparatively low, responsiveness to changed needs of partners and joint-decision making on strategic issues within an outside the steering committee. This type of Joint-execution is a good way to respond to the "alignment objectives" of the Paris Declaration without compromising on aid effectiveness.

B. Staff selection is a crucial success factor for achieving results

Staff selection is a crucial success factor for achieving results. The identification and selection of the right staff, at both headquarter and project levels, was a crucial success factor. Besides interpersonal skills in a multicultural context, staff involved into the implementation of technical cooperation projects should have an entrepreneurial spirit, managerial skills and the ability to acquire technical competencies. In contrast, a relevant university degree and the number of years working within the UN-system seem to be much less important. UNIDO might revisit the selection criteria currently used to select its staff.

C. Combination of Hot Spot and TEST approach

The combination of the Hot Spot and TEST approach for a first project phase in the field of "resource efficient and clean production" is innovative and allows for systematically focusing on the major polluters within a country, in order to achieve a maximum impact.

Annex 1: Terms of Reference



**UNITED NATIONS INDUSTRIAL DEVELOPMENT
ORGANIZATION**

TERMS OF REFERENCE

**Final Evaluation
of the UNIDO project:**

TF/CMB/10/002/A02 – SAP 104083

**Identification, assessment and prioritization
of pollution “hot spots” and transfer of
environmentally sound technologies (TEST)
in the Cambodian section of the Mekong river
basin**

February 2013

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1 Project background and context

1.1. Project summary

The rapid economic and industrial development coupled with growing population pressure in Cambodia is degrading the environment at an increasing rate. Most Cambodian industries are located along the Tonle Sap and Tonle Bassac, two major tributaries of the Mekong River in Cambodia. The integrity of the Mekong river basin's ecology is vital to the social, cultural and economic well-being of a large part of the population. However, due to out-dated production processes and weak enforcement of environmental regulations, industrial discharges have caused a significant decrease on surface water quality. Based on these observations, UNIDO developed and submitted a concept note to the East Asia Climate Partnership Programme funded by the Korea International Cooperation Agency (KOICA). The project entitled "Identification, assessment and prioritization of pollution "Hot-spots" and transfer of environmentally sound technologies (TEST) in the Cambodian section of the Mekong river basin" was approved by KOICA and the General Department of Industry (GDI) of the Ministry of Industry, Mines and Energy (MIME) of Cambodia as main counterpart in late December 2010.

The project combines two methodologies developed by UNIDO. Firstly, the Hot-Spot method is a tool to assess and prioritize major polluting sites that are discharging industrial effluents into a river basin. Secondly, the TEST integrated approach enables the improvement of the environmental performance in prioritized hot-spots while increasing their competitiveness through technological and knowledge transfers.

Since most of the industries in Cambodia are located in or around Phnom Penh, the project focused mainly on Phnom Penh and the surrounding Kandal Province.

1.2. Project objective

The overall objective of the project is to reduce the industrial discharge into river systems and improve the water quality of the Mekong River through implementation of the TEST methodology at selected enterprises representing pollution hot-spots.

More specifically, the capacity of the Cambodian counterpart for targeting major industrial polluters will be developed through training and joint implementation of the Hot-Spot methodology. In addition, capacity for reducing existing industrial emissions and discharges as well as preventing negative social and environmental impacts from industrial activities will be enhanced through trainings on management systems and strategic tools that comprise the TEST integrated approach. These tools include Environmental Management Accounting (EMA), Environmental Management System (EMS) and Corporate Social Responsibility (CSR). The benefits of the TEST integrated approach will be demonstrated at previously prioritized Hot-Spots.

Finally, the lessons learned during the project will be disseminated.

The logical framework of the project is attached in Annex 1.

1.3 Implementation status

Following the approval of the 2-year USD 900,000 project (including support costs) in December 2010, the Hot-Spot component of the project was implemented in 2011. The training of national consultants took place in May 2011 and the field survey and assessment phase lasted until September 2011. More than 500 factories were screened, out of which 44 were assessed based on the following four categories, (i) water quality and human health, (ii) biodiversity, (iii) pollution control, and (iv) socio-economy. Fifteen companies were then prioritized for TEST implementation.

The second component of the project, TEST implementation started in October 2011 with a general training on the methodology. The Cleaner Production Assessments (CPA) were carried out from January 2012 and specific trainings on the different tools (EMA, EMS and CSR) were delivered during the first 6 months of 2012. Trained national consultants then worked with the demonstration companies until the end of 2012.

In August 2012, the donor approved a 6-month no-cost extension of the project. This time extension allowed a longer implementation period for the integration of TEST tools into the selected companies.

The third component of the project, the dissemination phase, will be carried out from January 2013 until the end of June 2013 when the project will be completed.

1.4 Budget information

The overall budget as in the approved Project Document is presented hereafter:

Output	First Year [USD]	Second Year [USD]	Total [USD]
1. Hot spots assessment	179,460	0	179,460
2. TEST training	137,000	0	137,000
3. TEST application at demo sites	101,750	249,750	351,500
4. Dissemination of results	0	128,500	128,500
Subtotal	418,210	378,250	796,460
Program support costs (13%)	54,367	49,173	103,540
Foreign Fund (Korea)	USD 472,577	USD 427,423	USD 900,000

The following table presents the project's expenses by main cost categories at the end of 2012:

SUMMARY EXPENSES 2011-2012	2011 [USD]	2012 [USD]	Subtotal [USD]
Staff	117,356	205,976	323,332
Subcontract	38,407	19,438	57,845
Travel	28,635	53,168	81,803
Equipment	21,256	1,099	22,355
Meeting/training	20,999	55,473	76,472
Miscellaneous	8,157	5,083	13,240
Subtotal	USD 234,810	USD 340,237	USD 575,046

2 Objective and scope of the evaluation

The purpose of the final evaluation is to enable the Government, donor, counterparts, UNIDO and other stakeholders to:

- Assess the relevance, efficiency, effectiveness, impact, and sustainability of the project by providing an analysis of project objectives, delivery and completion of project outputs/activities, and outcome/impact based on selected indicators. Although gender dimensions were not specifically described in the project document, aspects of gender mainstreaming must also be assessed. Guidance on integrating gender is presented in Annex 2;
- Assess from an environmental perspective whether (i) gains to the individual companies were measured and reported upon, (ii) priority was given to preventive approaches wherever possible, and (iii) social and/or economic effects of environmental interventions were taken into considerations and/or measured; and,
- Enhance similar on-going or future projects by proposing a set of recommendations.

3 Evaluation parameters and key evaluation questions

A rating system associated with the selected evaluation parameters, described in the following sections 3.1 to 3.5, will be presented in the form of a table with each category rated separately and a brief justification for the rating based on findings in the main analysis. An overall rating for the project should also be given. The proposed rating system is specified in Annex 3. The following is a list of guiding questions for the assessment of the different parameters.

3.1 Project design

The extent to which:

- The project had a clear thematically focused development objective and immediate outcome, the attainment of which can be determined by a set of verifiable indicators;
- The project was formulated based on the logical framework approach and was designed to include appropriate output and outcome indicators within a realistic timeframe;
- The outputs as formulated in the project document are relevant and sufficient to achieve the expected outcomes and objectives;
- The project was formulated with participation of the national counterpart and/or target beneficiaries; and,
- The project takes account of and reflects national and local priorities and strategies.

3.2 Effectiveness

Assessment of:

- Outputs produced and how the target beneficiaries use the outputs; and,
- Achievement of outcomes or are these likely to be realized through utilization of outputs.

3.3 Efficiency

The extent to which:

- UNIDO and counterpart inputs have been provided as planned and were adequate to meet requirements; and,
- The quality of UNIDO inputs and services (expertise, training, methodologies, etc.) was as planned and led to the production of outputs.

3.4 Sustainability of project outcome

To capture long term developmental changes (economic, environmental, social) have occurred or are likely to occur as a result of the intervention, the following questions are asked to ensure project sustainability:

- Is the project likely to be replication? If not, what is needed for replication?
- Was any sustainability strategy formulated?
- What is the prospect for technical, organizational and financial sustainability?

3.5 Project management

The extent to which:

- National management and overall field coordination mechanisms of the project have been efficient and effective;

- UNIDO management, coordination, quality control and technical inputs have been efficient and effective;
- Monitoring and self-evaluation were carried out with indicators for outputs, outcomes and objectives and if that information was used for project and adaptive management;
- Synergistic relationships can be identified and beneficial connections established in relation to other UNIDO activities in country or elsewhere.

4 Methodology

The evaluation will be carried out as an independent and in-depth assessment using a participatory approach. UNIDO staff associated with the projects will be kept informed and regularly consulted throughout the evaluation.

The methodology will be based on the following:

1. A desk review of project documents including, but not limited to:
 - The original project document, monitoring reports (such as progress reports), and relevant correspondence;
 - Notes from the meetings of committees involved in the project (e.g. approval and steering committees); and,
 - Other project-related material produced by the project.
2. The evaluation team will use available theory of change (or intervention logic) models for the intervention. The validity of selected theory of change models will be examined through specific questions in interviews and possibly through a survey of stakeholders;
3. Counterfactual information: In those cases where baseline information for relevant indicators is not available the evaluation team will aim at establishing a proxy-baseline through secondary information sources and proxy data;
4. Interviews with project management and technical support including staff and management at UNIDO HQ and in the field and – if necessary - staff associated with the project's financial administration and procurement.
5. Interviews with project partners including Government counterparts, and selected participating companies;
6. On-site observation of results achieved in demonstration projects, including interviews of actual and potential beneficiaries of improved technologies or management tools;
7. Interviews and telephone interviews with intended users for the project outputs and other stakeholders involved with this project will also be conducted. The evaluator shall determine whether to seek additional information and opinions from representatives of any donor agencies or other organizations;

8. Interviews with the relevant UNIDO Country Office and the project's management and PSC members dealing with project activities as necessary; and,
9. Other interviews, surveys or document reviews as deemed necessary by the evaluator and/or UNIDO EVA.

5 Evaluation team, timing and deliverables

5.1 Team

The evaluation team will be composed of one international evaluation consultant acting as team leader and one national evaluation consultant.

UNIDO (ODG/EVA) evaluation group will be responsible for the quality control of the evaluation process and report. The evaluators and the responsible project manager will keep the ODG/EVA informed and share correspondence and draft documents for review.

The evaluation consultants will be contracted by UNIDO. Their tasks are specified in the job descriptions attached to these terms of reference in Annex 4.

Members of the evaluation team must not have been directly involved in the design and/or implementation of the project.

5.2 Timing

The evaluation is scheduled to take place in the period 15 March 2013 to 15 June 2013. The field mission for the evaluation is scheduled for the working week of 1 April 2013.

After the field mission, the evaluation team leader will come to UNIDO HQ for debriefing. The draft evaluation report will be submitted 6 weeks after the debriefing at the latest.

5.3 Deliverables

INCEPTION REPORT

These Terms of Reference provide some information on the evaluation methodology but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with project manager the International Evaluation Consultant will prepare a short inception report that will operationalize the TOR relating evaluation questions to information on what type of and how the evidence/data will be collected (methodology). The Inception Report will focus on the following elements: preliminary project theory model(s); outline of the evaluation mission including interviews and site visits; division of work between the International Evaluation Consultant and National Consultant; and a reporting timetable¹⁸.

EVALUATION REPORT

¹⁸ The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO Evaluation Group.

The evaluation report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report also should include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Evidence, findings, conclusions and recommendations should be presented in a complete and balanced manner. The evaluation report shall be written in English; the Executive Summary shall be written also in English, and follow the outline given in Annex 5.

Review of the Draft Report: Draft reports are shared with the Project Officer for initial review and consultation. They may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. The consultation also seeks agreement on the findings and recommendations. The evaluators will take the comments into consideration in preparing the final version of the report.

Quality Assessment of the Evaluation Report: All evaluations are subject to quality assessments in accordance with the quality criteria established by UNIDO Evaluation Group. The quality assessments are used as a tool for providing structured feedback to the evaluators. The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality (annex 6).

The draft report will be delivered to UNIDO and circulated to UNIDO staff associated with the project, including the UNIDO office on 3 June 2013.

ANNEX 1 – Logical framework

UNIDO - Logical Framework			
Objectives & activities	Indicators	Means of verification	Important assumptions
Development goal/Impact:			
Reduction of pollution discharges into the Mekong river in Cambodia through the transfer of environmentally sound technologies	Reduction in the effective mass of contaminant discharged (to be compared to data collected during the initial phase of the project)	Evaluation survey Laboratory results	
Outcomes:			
Enhanced knowledge of the Cambodian counterparts for reducing industrial discharges through the application of the TEST approach	Innovative approaches implemented at the enterprise level to decrease in the concentration and/or volume of the selected enterprises' discharges and increase of their profitability	Project evaluation report Interviews with enterprise representative	Continual support of the government and enterprises
Outputs:			
1. Mekong river pollution hot spots identified, assessed and prioritized	Enterprises prioritized on the basis of their contaminant discharges	Assessment report of the Mekong river hot spots	The national experts are capable of conducting the assessment
2. TEST training delivered	At least 2 employees (process and finance) per demonstration plant are trained	Training attendance record	Enterprises are willing to train their employees
3. TEST integrated approach introduced at the demonstration enterprises	# of low cost CP modifications performed # of EMS and EMA developed Amount of potential investment in CP	CP assessment reports Project evaluation report	Enterprises are willing to apply the TEST methodology
4. Lessons learned during the project disseminated	Final workshop disseminates the lessons learned and final report is made available	Workshop minutes CP website	

Key activities:

- Identification, assessment and prioritization of pollution hot spots
- Selection of enterprises and preparation of capacity building material
- Introduction of the TEST approach at the demonstration enterprises, including Cleaner Production assessment and development of Environmental Management System (EMS) and Accounting (EMA)
- Assessment of the benefits resulting from the application of the TEST approach
- Dissemination of the project results

ANNEX 2 – Guidance on integrating gender

Guidance on integrating gender in evaluations of UNIDO projects and programmes

I. Introduction

Gender equality is internationally recognized as a goal of development and is fundamental to sustainable growth and poverty reduction. The UNIDO Policy on gender equality and the empowerment of women and its addendum, issued respectively in April 2009 and May 2010 (UNIDO/DGB(M).110 and UNIDO/DGB(M).110/Add.1), provides the overall guidelines for establishing a gender mainstreaming strategy and action plans to guide the process of addressing gender issues in the Organization's industrial development interventions.

According to the UNIDO Policy on gender equality and the empowerment of women:

***Gender equality** refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not suggest that women and men become 'the same' but that women's and men's rights, responsibilities and opportunities do not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. It is therefore not a 'women's issues'. On the contrary, it concerns and should fully engage both men and women and is a precondition for, and an indicator of sustainable people-centred development.*

***Empowerment of women** signifies women gaining power and control over their own lives. It involves awareness-raising, building of self-confidence, expansion of choices, increased access to and control over resources and actions to transform the structures and institutions which reinforce and perpetuate gender discriminations and inequality.*

***Gender parity** signifies equal numbers of men and women at all levels of an institution or organization, particularly at senior and decision-making levels.*

The UNIDO projects/programmes can be divided into two categories: i) those where promotion of gender equality is one of the key aspects of the project/programme; and ii) those where there is limited or no attempted integration of gender.

Evaluation managers/evaluators should select relevant questions depending on the type of interventions.

II. Gender responsive evaluation questions

The questions below will help evaluation managers/evaluators to mainstream gender issues in their evaluations.

1. Design

- Is the project/programme in line with the UNIDO¹⁹ and national policies on gender equality and the empowerment of women?
- Were gender issues identified at the design stage?
- Did the project/programme design adequately consider the gender dimensions in its interventions? If so, how?
- Were adequate resources (e.g., funds, staff time, methodology, experts) allocated to address gender concerns?
- To what extent were the needs and priorities of women, girls, boys and men reflected in the design?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- If the project/programme is people-centred, were target beneficiaries clearly identified and disaggregated by sex, age, race, ethnicity and socio-economic group?
- If the project/programme promotes gender equality and/or women's empowerment, was gender equality reflected in its objective/s? To what extent are output/outcome indicators gender disaggregated?

2. Implementation management

- Did project monitoring and self-evaluation collect and analyze gender disaggregated data? Were decisions and recommendations based on the analyses? If so, how?
- Were gender concerns reflected in the criteria to select beneficiaries? If so, how?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- If the project/programme promotes gender equality and/or women's empowerment, did the project/programme monitor, assess and report on its gender related objective/s?

3. Results

- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision making authority)?

In the case of a project/programme with gender related objective/s, to what extent has the project/programme achieved the objective/s? To what extent has the project/programme reduced gender disparities and enhanced women's empowerment?

¹⁹ Once the gender mainstreaming strategy and action plans to guide the process of addressing gender issues in industrial development interventions are developed, the project/programme should align to the strategy or action plans.

ANNEX 3 – Rating criteria

Criterion	Evaluator's summary comments	Evaluator's rating
Attainment of project objectives and results (overall rating)		
Relevance		
Effectiveness		
Efficiency		
Sustainability of Project outcomes (overall rating)		
Economic dimension		
Social dimension		
Environmental dimension		
Project management		
National management		
UNIDO management		
Monitoring and self-evaluation		
Synergies		
UNIDO specific ratings		
Quality at entry		
Implementation approach		
Overall Rating		

RATING OF PROJECT OBJECTIVES AND RESULTS

- Highly Satisfactory (HS): The project had no shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency;
- Satisfactory (S): The project had minor shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency;
- Moderately Satisfactory (MS): The project had moderate shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency;
- Moderately Unsatisfactory (MU): The project had significant shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency;
- Unsatisfactory (U) The project had major shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency;
- Highly Unsatisfactory (HU): The project had severe shortcomings in the achievement of its objectives, in terms of relevance, effectiveness or efficiency.

Please note: Relevance and effectiveness will be considered as critical criteria. The overall rating of the project for achievement of objectives and results may not be higher than the lowest rating on either of these two criteria. Thus, to have an overall satisfactory rating for

outcomes a project must have at least satisfactory ratings on both relevance and effectiveness.

RATINGS ON SUSTAINABILITY

Sustainability will be understood as the probability of continued long-term outcomes and impacts after the project funding ends. The evaluation will identify and assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits beyond project completion. Some of these factors might be outcomes of the project, i.e. stronger institutional capacities, legal frameworks, socio-economic incentives /or public awareness. Other factors will include contextual circumstances or developments that are not outcomes of the project but that are relevant to the sustainability of outcomes.

On each of the dimensions of sustainability of the project outcomes will be rated as follows.

- Likely (L): There are no risks affecting this dimension of sustainability.
- Moderately Likely (ML): There are moderate risks that affect this dimension of sustainability.
- Moderately Unlikely (MU): There are significant risks that affect this dimension of sustainability
- Unlikely (U): There are severe risks that affect this dimension of sustainability.

All the risk dimensions of sustainability are critical. Therefore, overall rating for sustainability will not be higher than the rating of the dimension with lowest ratings. For example, if a project has an Unlikely rating in either of the dimensions then its overall rating cannot be higher than Unlikely, regardless of whether higher ratings in other dimensions of sustainability produce a higher average.

RATINGS OF PROJECT MANAGEMENT

The Project management will be rated as follows:

- Highly Satisfactory (HS): There were no shortcomings in the project management;
- Satisfactory(S): There were minor shortcomings in the project management;
- Moderately Satisfactory (MS): There were moderate shortcomings in the project management;
- Moderately Unsatisfactory (MU): There were significant shortcomings in the project management; and,
- Unsatisfactory (U): There were major shortcomings in the project management.

ANNEX 4 – Job description

JOB DESCRIPTION 1

Post title	International Evaluation Consultant
Duration	34 work days over a 3-month period
Started date	15 March 2013
Duty station	Home based and travel to Vienna and Phnom Penh
Duties	The consultant will evaluate the project according to the Terms of Reference. S/he will act as leader of the evaluation team and will be responsible for preparing the draft and final evaluation report. S/he will perform the following tasks:

Main duties	Duration/ location	Deliverables
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data...); determine key data to collect in the field and prepare key instruments (questionnaires, logic models...) to collect these data through interviews and/or surveys during and prior to the field missions	4 days Home based	List of detailed evaluation questions to be clarified; questionnaires/ interview guide; logic models; list of key data to collect, draft list of stakeholders to interview during the field missions
Briefing with the UNIDO Evaluation Group, project managers and other key stakeholders at HQ	2 days home based (telephone interviews)	Interview notes, detailed evaluation schedule and list of stakeholders to interview during the field missions Division of evaluation tasks with the National Consultant
Conduct field mission	12 days (including travel days)	Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission. Agreement with the National Consultant on the structure and content of the evaluation report and the distribution of writing tasks

Main duties	Duration/ location	Deliverables
Present overall findings and recommendations to the stakeholders at UNIDO HQ (incl. travel)	3 days Vienna	Presentation slides, feedback from stakeholders obtained and discussed
Prepare the evaluation report according to TOR Coordinate the inputs from the National Consultant and combine with her/his own inputs into the draft evaluation report	10 days Home based	Draft evaluation report
Revise the draft project evaluation reports based on comments from UNIDO Evaluation Group and stakeholders and edit the language and form of the final version according to UNIDO standards	3 days Home based	Final evaluation report
TOTAL	34 days	

Qualification:

- Master degree in environment science or related field;
- At least 3 years of experience in technical cooperation for industrial development including environmental management or equivalent;
- Professional experience in Cambodia or in a neighbouring country;
- Experience in conducting evaluations; and,
- Familiarity with the goals and procedures of UN and international organizations.

Absence of Conflict of Interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the project under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultant will not seek assignments with the manager in charge of the project before the completion of her/his contract with the Evaluation Group.

Job Description 2

Post title	National Evaluation Consultant
Duration	32 work days spread over 3 months
Started date	15 March 2013
Duty station	Phnom Penh, Cambodia
Duties	The consultant will evaluate the projects according to the Terms of Reference. S/he will work under the supervision of the leader of the evaluation team and will be responsible for providing substantive inputs to the draft and final evaluation report. S/he will perform the following tasks:

Main duties	Duration/ location	Deliverables
Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data...); in cooperation with Team Leader: determine key data to collect in the field and prepare key instruments (questionnaires, logic models...) to collect these data through interviews and/or surveys during and prior to the field missions	4 days Home based	List of detailed evaluation questions to be clarified; questionnaires/ interview guide; logic models; list of key data to collect, draft list of stakeholders to interview during the field missions
Briefing with the evaluation team leader, UNIDO project managers and other key stakeholders Assist in setting up the evaluation mission agenda, coordinating meetings and site visits	4 days Home based (telephone interviews)	Interview notes, detailed evaluation schedule and list of stakeholders to interview during the field missions
Conduct field mission	10 days	Presentations of the evaluation's initial findings, draft conclusions and recommendations to stakeholders in the country at the end of the mission. Agreement with the International Consultant on the structure and content of the evaluation report and the distribution of writing tasks

Main duties	Duration/ location	Deliverables
Prepare inputs to the evaluation report according to TOR and as agreed with Team Leader	10 days Home based	Draft evaluation report
Revise the draft project evaluation reports based on comments from UNIDO Evaluation Group and stakeholders and edit the language and form of the final version according to UNIDO standards	4 days Home based	Final evaluation report
TOTAL	32 days	

Qualification:

- Master degree in environment science or related field;
- Good knowledge of the context of environmental management in Cambodia;
- Experience in conducting evaluations; and,
- Familiarity with the goals and procedures of UN and international organizations.

Absence of Conflict of Interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the Evaluation Group.

ANNEX 5 – Outline of an evaluation report

Executive summary

- Must provide a synopsis of the evaluation which includes the main evaluation findings and recommendations
- Must present strengths and weaknesses of the project
- Must be self-explanatory and should not exceed 2-3 pages in length

I. Evaluation objectives, methodology and process

- Information on the evaluation: why, when, by whom, etc.
- Scope and objectives of the evaluation, main questions to be addressed
- Information sources and availability of information
- Methodological remarks, limitations encountered and validity of the findings

II. Country and project background

- Brief country context: an overview of the economy, the environment, institutional development, demographic and other data of relevance to the project
- Sector-specific issues of concern to the project²⁰ and important developments during the project implementation period
- Project summary:
 - Fact sheet of the project: including project objectives and structure, donors and counterparts, project timing and duration, project costs and co-financing
 - Brief description including history and previous cooperation
 - Project implementation arrangements and implementation modalities, institutions involved, major changes to project implementation
 - Positioning of the UNIDO project (other initiatives of government, other donors, private sector, etc.)
 - Counterpart organization(s)

III. Project assessment

This is the key chapter of the report and should address all evaluation criteria and questions outlined in the TOR. Assessment must be based on factual evidence collected and analyzed from different sources. The evaluators' assessment can be broken into the following sections:

- A. Design
- B. Relevance
- C. Effectiveness
- D. Efficiency
- E. Sustainability
- F. Project coordination and management

At the end of this chapter, an overall project achievement rating should be developed as required in Annex 3. The overall rating table should be presented here.

²⁰ Explicit and implicit assumptions in the logical framework of the project can provide insights into key-issues of concern (e.g. relevant legislation, enforcement capacities, government initiatives, etc.)

IV. Conclusions, Recommendations and Lessons Learnt

This chapter can be divided into three sections:

A. Conclusions

This section should include a summary of the main evaluation conclusions related to the project's achievements and shortfalls. It is important to avoid providing a summary based on each and every evaluation criterion. The main conclusions should be cross-referenced to relevant sections of the evaluation report.

B. Recommendations

This section should be succinct and contain few key recommendations. They should:

- be based on evaluation findings;
- realistic and feasible within a project context;
- indicate institution(s) responsible for implementation (addressed to a specific officer, group or entity who can act on it) and have a proposed timeline for implementation if possible;
- be commensurate with the available capacities of project team and partners; and,
- take resource requirements into account.

Recommendations should be structured by addressees:

- UNIDO
- Drafting Group
- Counterpart Organizations
- Donor

C. Lessons Learnt

- Lessons learned must be of wider applicability beyond the evaluated project but must be based on findings and conclusions of the evaluation; and,
- For each lessons the context from which they are derived should be briefly stated.

Annexes should include the evaluation TOR, list of interviewees, documents reviewed, a summary of project identification and financial data, and other detailed quantitative information. Dissident views or management responses to the evaluation findings may later be appended in an annex.

ANNEX 6 – Checklist on evaluation report quality

Report quality criteria	UNIDO Evaluation Group Assessment notes	Rating
a. Did the report present an assessment of relevant outcomes and achievement of programme objectives?		
b. Were the report consistent and the evidence complete and convincing?		
c. Did the report present a sound assessment of sustainability of outcomes or did it explain why this is not (yet) possible?		
d. Did the evidence presented support the lessons and recommendations?		
e. Did the report include the actual programme costs (total and per activity)?		
f. Quality of the lessons: Were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
g. Quality of the recommendations: Did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?'). Can they be implemented?		
h. Was the report well written? (Clear language and correct grammar)		
i. Were all evaluation aspects specified in the TOR adequately addressed?		
j. Was the report delivered in a timely manner?		

Rating system for quality of evaluation reports

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1, and unable to assess = 0.

Annex 2: List of Documents

A. Project document and project reports

- Project Document: “Identification, assessment and prioritization of pollution “hot spots” and transfer of environmentally sound technologies (TEST) in the Cambodian section of the Mekong river basin (TF/CMB/10/002)
- Annual Progress Report 2011
- Annual Progress Report 2012
- Financial report as per 14 May 2013 (updated, for informal purposes)

B. Project outputs

Hot Spot Report

- Ministry of Industry, Mines and Energy/UNIDO, Identification, Assessment and Prioritization of Pollution “Hot Spots” in the Cambodian Section of the Mekong River Basin, National Report, 2012.

EMA Reports and Protocols

- EMA Report and Protocol Cambodia Beverage Company Limited
- EMA Report and Protocol New Archid Garment Factory Limited
- EMA Report and Protocol Maestria Cambodia Co., Ltd.
- EMA Report and Protocol Thai Hong Kiet Fish Sauce and Soy Sauce Enterprise
- EMA Report and Protocol Asia Carton Factory Ltd.
- EMA Report and Protocol Mondial Cartons Manufacturing Co., Ltd

CSR Quick Assessment Reports

- CSR quick assessment report Anco Karem Tokta & Pheschak
- CSR quick assessment report Cambodia Beverage Company Limited
- CSR quick assessment report GDM Enterprise
- CSR quick assessment report GDM Laundry
- CSR quick assessment report New Archid Garment Factory Limited
- CSR quick assessment report Taksun Enterprise Co. Ltd.

Report on EMS at beneficiary companies

- Report on Environmental Management Systems at the Companies, prepared by Dr. Tran Van Nhan and M.Sc. Duong Thi Lien, Vietnam Cleaner Production Centre

C. Case studies of beneficiary companies established by the Project

- Case study Anco Karem Tokta & Pheschak (ice cream, fruit Juice)
- Case study GDM Enterprise (garment)
- Case study GDM Laundry (garment)
- Case Study New ARCHID Garment Factory Limited (garment)
- Case study Thai Hong Kiet Fish Sauce and Soy Sauce Enterprise (food processing)
- Case study Cambodia Beverage Company Limited (beverages, bottling for Coca Cola)
- Case study Maestria Cambodia Co., Ltd. Company (paint and coating)
- Case study Mondial Cartons Manufacturing Co., Ltd (carton made of waste paper)
- Case study Tak Sun Enterprise Co., Ltd (garment)

D. Other Documents

- United Nations Development Assistance Framework for Cambodia, 2011-2015, 26 January 2010
- UNIDO, Desk review, What has UNIDO done to reduce poverty – Evidence from UNIDO evaluations 2008 and 2009, 2010
- Cambodian Industrial Policy (2013 – 2018)
- National Strategic Plan on Green Growth (2013 – 2030 approved by the Council of Ministers on 1 March 2013)
- Industrial Energy Efficiency Case Studies in Cambodia, UNEP/UNIDO, 2012

Annex 3: List of persons met

No.	Name	Position	Institution
1	Mr. Chheang Namsang	Marketing Officer	Anco Karen Tokta and Pheaschak
2	Mr. Seng Pov	General Manager	Mondial Carton Manufacturing Co., LDT.
3	Mr. Va Chanmakaravuth	Director	National Cleaner Production Office Cambodia (NCPO) Ministry of Industry, Mines and Energy
4	Mr. Kang Sin	Deputy Project Coordinator	
5	Mr. Nun Sophanna	Deputy Project Coordinator	
6	Dr. Pramod Gupta	Chief Technical Advisor	
7	Mr. Yoo Jee Hyun	Deputy Representative	Korea International Cooperation Agency (KOICA)
8	Mr. Sok Narin	Head of UNIDO Operations in Cambodia	UNIDO
9	Mr. Hak Sok Chea	National Project Coordinator	Project Team
10	Mr. Hoeung Kimsay	Project Assistant	
11	Ms. Hang Leakhena	Technical Coordinator	
12	Ms. Kong Chanthy	Technical Assistant	
13	Ms. Kong Rachana	Programme Assistant	
14	H.E Meng Saktheara	Director General	General Department of Industry, MIME
15	Mr. Thai Hong Kiet	Owner of the Factory	Thai Kiet Soy Sauce and Fish Sauce Factory
16	Mr. Chan Sothea	HR and Compliance Manager	Taksun Enterprise co., Ltd.
17	Mr. Samol Oean	Office of Compliance Supervisor	New Archid Garment Factory Ltd.
18	Mr. Taing Meng	Human Resource and Social Compliance Manager	GDM Enterprise Co., LTD
19	Mr. Sithun	HR. Social Compliance Manager	GDM Laundry Co. Ltd.
20	Mr. Plong Thangrak	Waste Water Manager	Cambodia Beverage Company Limited
21	Mr. Sophal	Plastic Bottle Production Manager	
22	Mr. Makara	Manufacturing and Operational Manager for Best Practices	
23	Mr. By Pitou	Director	General Department of Industry – Department of Industrial Techniques
24	Mr. Chong Bou	Deputy Chief of Industrial Safety Office	Department of Industrial Techniques, MIME
25	Mr. Pok Ranna	Factory Manager	Maestria Cambodia Co., Ltd.