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UNIDO EVALUATION GROUP

Independent UNIDO Country Evaluation

REPUBLIC OF ZAMBIA



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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Independent

UNIDO Country Evaluation

Republic of Zambia

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna, 2013

Distr. GENERAL
ODG/EVA/12/R.19
October 2013

Original: English

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Map No. 3731 Rev. 4 UNITED NATIONS
January 2004

Department of Peacekeeping Operations
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Acknowledgements

The evaluation team would like to acknowledge and thank all partners, counterparts and UNIDO staff who contributed to this evaluation.

A sincere note of gratitude is extended to UNDSS, the UN Designated Official, the Diplomatic Police, the Kasama District police, and the UNDP Country Office in Lusaka for all the support provided to the evaluation team following a tragic road accident during the evaluation mission in Zambia.

Abbreviations and acronyms

BDS	Business Development Services
CEC	Copperbelt Energy Corporation
CP	Country Programme
CTA	Chief technical advisor
DAC	Development Assistance Committee (OECD)
DaO	UN's "Delivering as One" initiative
DFID	Department for International Development (UK)
EAC	East Africa Community
EIF	Enhanced Integrated Framework (Aid for Trade - WTO)
EIU	Economist Intelligence Unit
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	German Gesellschaft für Internationale Zusammenarbeit
GoZ	Government of Zambia
HCFC	Hydro chlorofluorocarbons
HIV	Human Immunodeficiency Virus
HQ	Headquarters
HUO	Head of UNIDO Operations
IC-SHP	International Centre for Small Hydro Power
ICT	Information and Communication Technology
IMF	International Monetary Fund
ISO	International Standards Organization
IT	Information Technology
LDC	Least Developed Country
LLDC	Land-Locked Least Developed Country
MB	Methyl Bromides
MCTI	Ministry of Commerce, Trade and Industry
MDGs	Millennium Development Goals
MOU	Memorandum of Understanding
MP	Montreal Protocol
MSMEs	Micro, Small and Medium Enterprises
MTR	Mid-Term Review
MW	Megawatts
NGO	Non-Governmental Organization

NORAD	Norwegian Agency for Development
NRA	Non-Resident Agency (of the UN)
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PD	Project Document
POPs	Persistent Organic Pollutants
PPP	Public-private partnership
PSD	Private sector development
PTC	Programme Development and Technical Cooperation Division (UNIDO)
RC	Resident Coordinator (UN)
RCO	Resident Coordinator's Office (UN)
RE	Rural Energy
RO	Regional Office (UNIDO)
SHP	Small Hydro Power
SMEs	Small and medium enterprises
SMTQ	Standards, metrology and testing and quality
SNDP	Sixth National Development Plan
SPS	Sanitary and Phyto-Sanitary
SPX	Partnership Exchange Programme
SSC	South-South Cooperation
TBT	Technical Barriers to Trade
TCB	Trade Capacity-Building
TF	Trust Fund
ToR	Terms of Reference
ToT	Training of Trainers
UN	United Nations
UNCT	UN Country Team
UNCTAD	United Nations Conference on Trade and Development
UNDAF	UN Development Assistance Framework
UNDG	United Nations Development Group
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEG	United Nations Evaluation Group
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNRC	United Nations Resident Coordinator
UR	UNIDO Representative

US$	United States dollars
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization
ZAM	Zambia Association of Manufacturers
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation Limited

Glossary of evaluation-related terms

Term	Definition
Baseline	The situation prior to an intervention, against which progress can be assessed.
Conclusions	Conclusions point out the factors of success and failure of the evaluated intervention, with special attention paid to the intended and unintended results and impacts, and more generally to any other strength or weakness. A conclusion draws on data collection and analyses undertaken, through a transparent chain of arguments.
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.
Indicator	Quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor.
Institutional development impact	The extent to which an intervention improves or weakens the ability of a country or region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources, for example through: (a) better definition, stability, transparency, enforceability and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Such impacts can include intended and unintended effects of an action.
Lessons learned	Generalizations based on evaluation experiences with projects, programmes, or policies that abstract from the specific circumstances to broader situations. Frequently, lessons highlight strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact.
LogFrame	Management tool used to improve the design of interventions, most often at the project level. It involves identifying strategic elements (inputs, outputs, outcomes, impact) and their causal relationships, indicators, and the assumptions or risks that may influence success and

Term	Definition
	failure. It thus facilitates planning, execution and evaluation of a development intervention. Related term: results based management.
Outcome	The likely or achieved short-term and medium-term effects of an intervention's outputs. Related terms: result, outputs, impacts, effect.
Outputs	The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
Recommendations	Proposals aimed at enhancing the effectiveness, quality, or efficiency of a development intervention; at redesigning the objectives; and/or at the reallocation of resources. Recommendations should be linked to conclusions.
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs global priorities and partners' and donors' policies. Note: Retrospectively, the question of relevance often becomes a question as to whether the objectives of an intervention or its design are still appropriate given changed circumstances.
Results	The output, outcome or impact (intended or unintended, positive and/or negative) of a development intervention. Related terms: outcome, effect, impacts.
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 a development intervention after major development assistance has been completed. The probability of continued long term benefits. The resilience to risk of the net benefit flows over time.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.

Executive summary

Introduction

This independent country evaluation report is a result of an evaluation of UNIDO's main interventions in Zambia since year 2001. Plans for the development of UNIDO's first Country Programme in Zambia in year 2013 led to the Executive Board's approval of this evaluation as part of the Evaluation Group's 2012/13 Work Programme.

UNIDO's cooperation with the Government of Zambia (GoZ) dates back to 1969. Since then, there has been a portfolio of over 170 projects amounting to around $21 million. Since year 2000, UNIDO has had no Field Office or Desk in Zambia. Country level representation and support is the remit of the Regional Office (RO) in Pretoria, while the UNIDO projects operate out of their various project offices and are managed from UNIDO headquarters with no formal or informal coordination mechanism in place in the country.

UNIDO's current interventions in Zambia fall under two themes of the UN Development Assistance Framework: a) "Sustainable Livelihoods and Food Security"; and b) "Climate Change, Environment and Disaster Risk Reduction and Response".

Over the period covered by the evaluation (2001-12), UNIDO's portfolio in Zambia has consisted of three broad components: renewable energy and environment (comprising 71% of UNIDO's total programme budget for the country), trade capacity building (28%); and support to small and medium enterprises (1%) coupled with a regional cotton sector study.

The total allotment for the period 2001-2012 amounts to $11.4 million with expenditures reaching $10.2 million as of December 2012. The main donors for UNIDO in Zambia have been the Government of Zambia (30% of the total); the Global Environment Facility (34%); Norway (28%); the Montreal Protocol Multilateral Fund (4%); and with the remainder coming largely from UNIDO's programmable resources and South Africa.

Evaluation mission and methodology

The evaluation field mission in Zambia took place over the period 26 November to 10 December 2012 with a team of two consultants (Mr. Simon Taylor, renewable energy expert, and Mr. Nixon Chisonga, evaluation specialist) and a team leader (Mr. Massoud Hedeshi, UNIDO Evaluation Officer). The evaluation was designed as a forward-looking exercise to identify best practices and lessons, and to assess the relevance, efficiency, effectiveness, impact and sustainability of UNIDO's interventions in Zambia.

The evaluation was conducted in compliance with the United Nations Evaluation Group (UNEG) norms and standards. Data collection methods ranged from desk reviews (country reports and national development plans, project and programme documents etc.) to individual interviews, group discussions, project visits and site observation. An objective approach was applied seeking the views of all stakeholders, and validating the data through triangulation of sources, methods, data, and findings.

Limitations on the evaluation field mission were imposed by a tragic road accident that prohibited visits to most renewable energy (RE) and livelihoods project sites, though the RE evaluation findings remain valid. Evaluation of the 'Telecentre' project in particular was not practical. In addition, the evaluation of RE and trade capacity building (TCB) interventions was limited to relevance and efficiency aspects due to in-depth independent project evaluations planned for both projects in mid-2013.

Country background

Zambia has one of the lowest life expectancy and population densities in the world. It is characterised by sharp rural-urban migration and disparities, a predominant 'informal sector', and dependence on copper exports in its economy. After adopting fast-track privatisation policies in the 1990s, Zambia's human development, gross national income and industrial production indices dropped sharply until 2006. The deteriorating trend was reversed due to a combination of debt relief negotiation successes and rising copper prices in international markets. Since then, Zambia has enjoyed strong growth in industrial and agricultural production, with higher foreign investment flows from the Global South and North.

The main challenges facing Zambia's industrial development drive arise from poor transportation and energy infrastructure; high poverty and low vocational skill rates; inadequate job creation; low local linkages with foreign investors in the mining sector; and rudimentary quality assurance systems in production and trade. The Government also faces challenges in securing royalties and taxes from the foreign-dominated mining sector and in combating corruption, both of which were highlighted as priorities by the new Government elected in September 2011.

Zambia's Sixth National Development Plan (SNDP) emphasises the need for expanding the industrial base and value addition through dedicated production zones and public-private partnerships (PPP); investment promotion; and enterprise development with emphasis on agribusiness in the rural sector. The SNDP also highlights the need for rural renewable energy expansion for achieving its economic development goals. As such, the correlation between Zambia's manufacturing development needs and UNIDO's core competencies and services is strong.

Apart from the risk of a sharp fall in the international price of copper (which remains a small risk in the current climate of positive global economic growth), Zambia's prospects are judged as positive by most independent observers and analysts.

Since 1990, Zambia has received an average of $1.2 billion a year in development cooperation support, reaching a peak of almost 140% of government expenditures in 2002. Zambia's reliance on ODA has decreased significantly since, though it still constituted 30% of the central government budget in 2010. Around 7% of Zambia's total OECD-country bilateral ODA is estimated to be allocated to productive sectors, while the equivalent figure of non-OECD countries is not clear.

UNIDO's portfolio

With a total allotment of $7.7 million, UNIDO's renewable energy portfolio in Zambia constitutes one of its largest RE programmes in any country. The programme aims to increase commercially viable, reliable and renewable energy services for productive use. These include installation of decentralised mini-grids based on micro-hydro and biomass gasifier as well as solar technologies. The programme has over time moved toward a joint effort with several local and international partners, and is funded by Zambia and the Global Environment Facility (GEF).

A TCB project launched in April 2009 aims to enhance the export performance of Zambia through strengthening of the standards, metrology and testing and quality (SMTQ) policy framework and institutional capacities. The project also targeted strategic export sectors and supported consumer protection.

Another set of projects under the Montreal Protocol umbrella was aimed at phasing out ozone depleting Hydrochlorofluorocarbons (HCFCs) and Methyl Bromide (MB) use in industry and agriculture.

UNIDO's portfolio also included support to small and medium enterprises (SMEs) in the shape of a sub-regional Partnership Exchange Programme (SPX) that was designed to boost the engagement of local enterprises with large foreign and domestic producers in collaboration with the Zambia Development Agency (ZDA), and funded by South Africa.

Key evaluation findings

Relevance

The evaluation assessed UNIDO's interventions in Zambia to be highly relevant to Zambia's national needs and priorities. They were also relevant to counterparts' and intended beneficiaries' needs. This applied equally to renewable energy, Montreal Protocol, trade capacity building and SME support

projects. However, a compromising factor in this regard was a lack of coordination and synergies among the projects. Moreover, the relevance of the TCB project to the needs of its host, the Ministry of Commerce, Trade and Industry (MCTI) was reduced due to inadequate attention to capacity building for the Ministry in project design.

Ownership

UNIDO projects benefited from good levels of local ownership. In the case of the TCB project, the Ministry had clearly taken ownership of the policy role, introduced funding allocated for the function in its budget, and expressed a desire to take a stronger management role in the next phase of the project. In the case of RE projects, national ownership is demonstrated by high levels of national funding for UNIDO projects, and by the efficient coordination role played by the Zambia Electricity Supply Corporation Limited (ZESCO).

Similarly, the Montreal Protocol projects are implemented in a sub-contract arrangement with the Zambia Environmental Management Agency.

In the case of the SPX project, the ZDA for the first time allocated funding for implementing the SPX project throughout seven provinces as of 2013.

Efficiency

UNIDO projects suffered from a number of efficiency issues related to implementation schedules and coordination challenges. The SPX, TCB, MP and RE project stakeholders cited a lack of familiarity with and complexity of UNDP procurement and finance procedures as a reason. The lack of a UNIDO coordinator in Zambia and inadequate capacity and support from the Pretoria office were contributing factors to the logistical and management challenges faced by all projects.

Moreover, a lack of communication between the RE project and the MCTI constitutes an opportunity cost, as it has left a major dent in the potential for linking UNIDO's RE initiatives with the rural industrial development plans of MCTI.

UNIDO inputs into regular UNDAF progress reports prepared by the UN Resident Coordinator's Office (UNRCO) are erratic with no identifiable focal point for the UNRCO to contact.

In the case of the MP project, most of the one-year delay in implementation was due to internal local agency issues rather than UNIDO.

The SPX project was delayed by two years because of its linkages to a regional Investment Survey project that was itself delayed, and subsequent withdrawal of funds by the donor. This led to additional issues related to the payment of staff

salaries and inadequate investment in transportation needs by UNIDO and the host agency, and a consequent loss of project staff. The TCB project also experienced some procurement delays caused by misunderstandings over SMTQ equipment specifications.

In terms of the quality of inputs such as advisers and trainers, the evaluation received good feedback on UNIDO's performance from all counterparts. Expertise from the Global South and training sessions conducted in countries of the South were particularly well received.

The RE projects have demonstrated effective South-South Cooperation by involving the International Centre for Small Hydro Power (IC-SHP) in China for the SHP sub-contract, allowing the Zambian workforce to work alongside Chinese specialists. ZESCO engineers appreciated this for transfer of knowledge, although language barriers were sometimes a challenge.

For the biomass gasifier demonstration in Ndola, specialists from the Indian Institute of Sciences worked with Copperbelt Energy Corporation (CEC) engineers again allowing South-South Cooperation on a business level.

Effectiveness

Due to the aforementioned delays, most projects were at too early stages of delivery in both outputs and outcomes for a thorough evaluation.

The SPX project was closed due to funding shortages, and showed no evidence of results at the company level despite meeting 50% of its 'company profiling' target of 100 in total.

The earlier Montreal Protocol projects had delivered their results with the exception of the ongoing Methyl Bromide project that is due for completion by mid-2013, and a 10-year HCFC project that was launched in late 2012.

The RE projects had successfully delivered on a single Output (1 MW hydropower plant) that was commissioned during the evaluation mission, though without the requisite transmission lines, leaving the intended Outcomes ("local employment opportunities" and "enhanced knowledge of decision makers") not evaluable at this stage. The solar and biomass power plants were not yet commissioned at the time of evaluation.

The TCB project LogFrame was overloaded in its description of Outcomes (seven in total) and Outputs (22 in total – see Annex H for a full list), and displays a lack of results orientation in project design. The project outcome and outputs related to SMTQ legislative framework were partially achieved with the SMTQ policy adopted in 2011, though adoption of related regulations and the Standards Act remained outstanding at the time of evaluation. All other Outcomes and most Outputs remained pending.

Sustainability

In terms of sustainability, and as described above, high levels of national ownership and new funding commitments have provided a positive outlook for most projects. However, Zambia Environmental Management Agency (ZEMA) will need continued support with compliance enforcement, as it is low on resources.

In the case of the TCB project, sustainability was somewhat compromised by project design, which lacked attention to capacity building for the Ministry in the area of national SMTQ project implementation. This has left the Ministry dependent on UNIDO's presence for the continuation of its SMTQ function.

In the RE projects, sustainability has been boosted in part due to successful capacity building, and a multi-stakeholder set up that is not dependent on any one actor.

The current climate in the country and the potential presented to UNIDO is ideal for future cooperation at the meso (institutions and business development plans) and macro levels (policy and strategy development and implementation support), working with associations, institutions, and coordinating and decision-making bodies, rather than individual companies or small producer sub-sectors.

Other crosscutting issues

Almost all UNIDO projects in Zambia are expected to have positive environmental impact, as they are indeed designed to, be it Methyl Bromide controls, TCB or RE.

Because hydro and solar power mini-grids are demonstrating their operation using natural resources, local people will see the link to environmental sustainability. An expectation for the Shiwa Ngandu mini-grid is that electric stoves may reduce the dependence on charcoal and fuel wood requirements for cooking.

There is little sign of gender considerations in UNIDO project designs or implementation, and this applied also to recruitment of project staff and consultants.

However, the electrification of communities will have some benefits to women (and girls) in their homes, places of work and learning.

For example, the electrification of hospitals and Rural Health Centres is expected to have positive benefits for maternal health care, and if electric stoves can substitute wood stoves, women will benefit from this cleaner form of cooking.

Recommendations

SME development (SPX)

- Per the ZDA's plans, the next phase of the project should concentrate on SPX capacity building at the provincial level. This should be spatially linked also with any future projects related to cluster development, private sector development, business development services or RE, and should benefit from TCB and Methyl Bromide projects' knowledge base.

- Any future project phase should ensure that project staff receive their salaries in a timely manner, and that the requisite transportation support is made available (by either the ZDA or the project).

Renewable energy

- Future RE projects should be better coordinated with the MCTI as well as the Ministry of Agriculture in order to enhance the projects' productive use potential and to leverage synergies with ongoing and future TCB and SME support programmes.

- Due to the fact that the Renewable Energy project was still under implementation at the time of the evaluation, UNIDO HQ's Renewable and Rural Energy unit should review the functioning after at least 6 months of operations (this will cover the variation in seasonal rainfall for the SHP). Because the biomass gasification unit is not expected to be completed until end of 2013, this review should be done either in two phases (SHP and solar PV first) or into 2014.

- In the selection of SHP specialists for future phases of the project, care must be taken to ensure adequate English language skills. Alternatively, some form of interpretation service should be made available.

Trade Capacity Building

- The project should continue into a second phase with UNIDO involvement in order to cater for capacity building needs. The standards and metrology institutes should be provided with further assistance towards accreditation.

- The management arrangements for any future phase should be more transparent and owned by the Ministry, including in financial and procurement decision-making. As such, it is recommended to phase out the fulltime international CTA in the next phase of the project through a detailed exit strategy.

- The Ministry focal point for the next phase of the project should be a staff of the MCTI with a relevant science or engineering background. In case such skills are not available, the Ministry should consider recruiting a qualified person or providing appropriate training for existing Ministry staff through the next phase of the project.

- The formulation of the next phase should be closely coordinated with the national Enhanced Integrated Framework Secretariat (EIF) in the MCTI, as prospects are positive both for EIF funding and for building synergies with other EIF initiatives.

UNIDO representation

- At a minimum, UNIDO should assign the role of country coordination to a project chief technical advisor (CTA) or another senior project staff member in Zambia.

- Given Zambia's industrial development priorities and UNIDO's budget constraints, UNIDO should ask for Government in-kind contributions toward a UNIDO office (e.g. use of MCTI premises) and staff (e.g. Ministry secondments) in Lusaka, and to complement this with use of UNIDO project funds. Locating the UNIDO Field Office in MCTI would be cost-effective, and it would allow for dovetailing the TCB project's exit strategy with a UNIDO Field Office set-up plan, and with the responsibility for UNIDO coordination resting with the outgoing TCB CTA.

- Given the potential size of the UNIDO programme in the country, it would be more strategic to assign a Head of UNIDO Operations located in the UN House in Lusaka. The funding for this can be augmented with project resources, which are already at levels comparable with or above some other countries that have UNIDO representation.

- The Pretoria Regional Office of UNIDO should have a specific focal point for UNDAF and UNCT monitoring and reporting for every country of the RO's coverage, including Zambia.

Country Programme formulation

- Depending on resource availability, the UNIDO Country Programme for Zambia (2013) should focus on the following range of substantive areas listed in order of priority (and with potential donors):

  - ✓ Industrial policy (UNIDO; GoZ/MCTI);
  - ✓ Renewable energy (ZESCO; GEF; China);
  - ✓ Rural industrial zones/clusters; SME development support; and enterprise upgrading (Ireland; DFID; Finland; GoZ; international mining companies);
  - ✓ Trade facilitation and infrastructure (EIF/WTO; Norway);

- ✓ Vocational training and entrepreneurship education (GoZ; Finland; Ireland; mining companies);
- ✓ Energy efficiency and cleaner production; (Switzerland, Austria);
- ✓ Corporate Social Responsibility (international mining companies); and
- ✓ Ozone depleting substance and persistent organic pollutants (Multilateral Fund for MP).

- The Country Programme formulation team should not develop too many disparate initiatives, particularly at the micro level.

- The Country Programme formulation process and its subsequent implementation monitoring should be closely coordinated with MCTI, preferably through a Focal Point designated by the Ministry.

- The Country Programme should pay special attention to creating synergies and linkages among the projects, as follows:

  - **Spatial linkages**: Cluster development, SME, RE and TCB projects should focus on the same geographical areas, so that energy supplies can benefit productive sector SMEs, and that the latter can benefit from diffusion of SMTQ capacities and training in the same localities.

  - **Value chain linkages**: Similarly, the SME (clusters & SPX) and TCB projects should be designed to focus on the same value chains. A Business Development Services (BDS) and TCB focus on enhancing marketing, productivity and quality in sectors such as coffee, soya, sugar cane, cotton, tea and fruits such as pineapples and mango would be strategic for Zambia's needs.

  - **Knowledge sharing:** Expertise should be pooled across different projects. For example, existing knowledge base already developed through the Methyl Bromide project should be made available to agro-industries and SMTQ institutions. In addition, cotton expertise and sector knowledge could be shared across TCB, clusters and SPX projects.

  - **Logistics:** Coordination should be enhanced through sharing logistics (office, cars, communications equipment etc). This would also help various UNIDO staff develop an enhanced sense of a UNIDO identity and mutual support.

- In terms of fundraising, the formulation mission team should look beyond traditional sources and try to mobilise funding from the Government, the Global South, and international mining companies in Zambia.

- Gender analysis and performance targets/monitoring should be mainstreamed in UNIDO's new Country Programme and related projects.

1.

Introduction and background

1.1 Introduction

This independent country evaluation report is a result of an evaluation of UNIDO's main interventions in Zambia since year 2001. Plans for the development of UNIDO's first Country Programme in Zambia in year 2013 led to the Executive Board's approval of this evaluation as part of the Evaluation Group's 2012/13 Work Programme.

UNIDO's cooperation with Government of Zambia (GoZ) dates back to 1969. Since then, there has been a portfolio of over 170 projects amounting to around $21 million.

Over the period covered by the evaluation, UNIDO's portfolio in Zambia has consisted of three broad components: renewable energy and environment (together comprising 71% of UNIDO's total programme budget for the country), trade capacity building (28%); and support to small and medium enterprises (1%) coupled with a regional cotton sector study. The total allotment for the period 2001-2012 amounts to $11.4 million with expenditures reaching $10.2 million as of December 2012.

The UN Development Assistance Framework (UNDAF) 2011-2015[1] covers UNIDO's current portfolio in Zambia under the two themes of "Sustainable Livelihoods and Food Security" and "Climate Change, Environment and Disaster Risk Reduction and Response". Zambia is also a UN Delivering as One self-starter country with a programme-focused coordination mechanism that excludes fund-pooling arrangements (One Fund).

Since the closure of the Field Office in Lusaka in 2000, the UNIDO Regional Office in Pretoria has formally represented UNIDO in Zambia.

The evaluation team was composed of Mr. Simon Taylor, international renewable energy consultant; Mr. Nixon Chisonga, national evaluation consultant; and Mr. Massoud Hedeshi, UNIDO Evaluation Officer and team leader for the exercise. The evaluation field mission in Zambia took place over the period 26 November to 10 December 2012.

[1] http://planipolis.iiep.unesco.org/upload/Zambia/Zambia_UNDAF_2011_2015.pdf

1.2 Evaluation purpose and scope

1.2.1 Purpose

Country evaluations look at UNIDO's entire programme in a country and the specifics of UNIDO's programme nationally and regionally insofar as they relate to the country. This country evaluation was designed as a forward-looking exercise to identify best practices and lessons, and to assess the relevance, efficiency, effectiveness, impact and sustainability of UNIDO's interventions in Zambia. Moreover, it was designed to provide a key input into a planned UNIDO Country Programme formulation exercise in 2013 by identifying potential areas for future Zambia-UNIDO cooperation.

The key users of this evaluation will be UNIDO professionals and management at Headquarters and at the UNIDO Regional Office in South Africa, the Government of Zambia and various other partners in Zambia, UN agencies and donors.

1.2.2 Scope and focus of the evaluation

The evaluation focused on the following aspects:

- The relevance and alignment of interventions to national needs and priorities (The Sixth National Development Plan, Vision 2030 and other national strategies) and to the UNDAF and UNIDO planning frameworks;
- To provide recommendations on potential areas and modalities of cooperation under a future Country Programme;
- Relevance, efficiency, effectiveness and impact of UNIDO's ongoing projects;
- The efficiency of management and coordination processes including the performance of the UNIDO Regional Office and relations the UN coordination mechanisms and the Delivering as One UN system;
- Achievements in relation to crosscutting issues:
    - Contribution to Gender equality;
    - Contribution to environmental sustainability;
    - Fostering South-South cooperation.
- UNIDO's strategic positioning in the country.

The period covered by the evaluation starts from the beginning of the focus on renewable energy projects in 2001.

Since one of the main purposes of the evaluation was to feed into a Country Programme formulation exercise, and coupled with the fact that the two largest projects (see under 'Limitations' below) had independent in-depth project evaluations planned already for mid-2013, the scope and focus of the evaluation approach was skewed toward the country analysis component of the exercise.

1.2.3 Methodology

The evaluation was conducted in compliance with UNIDO's Evaluation Policy and its Technical Cooperation Guidelines. Data collection methods ranged from desk reviews (country reports and national development plans, project and programme documents, progress and survey reports, mission reports, Agresso search, evaluation reports, etc) to individual interviews, group discussions, project visits and observation. Existing project review reports and assessments also fed into the evaluation, including a country needs assessment report, published in mid-2012.

Individual projects were categorized and reviewed according to theme and strategic importance. Moreover, findings of a thematic TCB evaluation report published in 2010 and an in-depth mid-term review report for the TCB project (June 2012), as well as a country needs assessment conducted in June 2012 were fed into this country evaluation.

Attention was paid to ensuring an unbiased and objective approach and to the validation of data through triangulation of sources, methods, data, and findings.

While maintaining independence, the evaluation sought the views and assessments of all stakeholders. These included government counterparts, local community leaders, beneficiaries (e.g. villagers, SMEs etc.), private sector representatives, other UN organizations, multilateral organizations, bilateral donors and beneficiaries. The field mission was followed by phone and personal interviews with project staff and counterparts in Vienna and Zambia. A bibliography and a list of persons met are included in the annexes.

A preliminary presentation of findings was made to the Minister of Industry and Trade in Zambia followed by a presentation in UNIDO HQ for project managers in advance of a planned Country Programme formulation mission to Zambia.

1.2.4 Limitations

The trade capacity building (TCB) project had an in-depth mid-term review conducted in June 2012. The TCB and hydropower projects had in-depth project evaluations planned for 2013, and their evaluation scope was thus limited to 'relevance' and 'efficiency' aspects in the main.

In the case of the renewable energy projects, limitations were also imposed by the fact that community-level impact was not evaluable, as the outputs had not been delivered, particularly in the case of solar and bio fuel projects. In the case of hydropower, the project's outputs were realised in December 2012, which did not allow adequate time for outcome and impact level assessments.

The evaluation mission was interrupted by a tragic road accident involving two members of the evaluation team. As a result, the field visits in relation to the renewable energy (RE) and livelihoods components of the evaluation had to be significantly reduced in scope. As a consequence, surveys of the renewable

energy and livelihoods projects' beneficiaries were not conducted, though the impact of this on the evaluation of RE components was somewhat limited by the fact that the Biomass and Solar power projects' outputs had not been commissioned at the time of the evaluation mission.

The hydropower site was the only RE or livelihoods project site visited, and the evaluation team consulted some beneficiaries before the accident took place. However, follow-up phone interviews were conducted and secondary sources were used for triangulation of findings. As such, the hydropower component of the evaluation remains valid and reliable, while the other RE components and livelihoods projects were limited in the main to relevance and efficiency assessments.

The lightest parts and least reliable aspects of the evaluation relate to the two livelihoods projects: 'Rural Demonstration Telecentre' (XP/ZAM/07/001), and 'Renewable Energy Entrepreneurship Development' (YA/ZAM/03/471). The related analysis has therefore been removed from the report.

The country analysis, as well as the TCB, SPX and Montreal Protocol parts of the evaluation remain valid and reliable.

2.

Country context

2.1 Socio-economic snapshot

Zambia is classified as a 'Land Locked Least Developed County (LLDC) with a per capita GDP of around $1,400[2] and a total population of approximately 13.5 million in year 2011[3]. The 2011 Human Development Index (HDI) for Zambia[4] ranks the country 164th out of a total of 187 countries with an average life expectancy of 49 years in the same year[5], and a relatively high HIV prevalence rate of close to 14% of the adult population (2009).

As the country's long-term HDI table[6] below shows, Zambia's HDI index peaked in 1990 before deteriorating during the privatisation era of the 1990s (see below), and remained lower in year 2010 than its value back in 1985. Similarly, the country's per capita Gross National Income and life expectancy were higher in 1980 as compared to 2010.

Table 1: Zambia's HDI Trends

Long-term trends in Zambia's HDI, 1980-2010

	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (PPP US$)	HDI value
1980	51.9	7.6	3.3	1,533	0.382
1985	52.1	8.5	5.3	1,273	0.410
1990	51.1	7.9	7.5	1,226	0.423
1995	46.7	7.6	6.1	1,009	0.371
2000	42.0	7.2	5.9	1,031	0.345
2005	42.9	7.2	6.3	1,153	0.360
2010	47.3	7.2	6.5	1,359	0.395

Source: HDR 2010 The Real Wealth of Nations: Pathways to Human Development

**These are based on consistent time series data, new component indicators and new methodology*

Zambia has one of the lowest population densities in the world, and a relatively high population growth rate of 3%, up from 2% a decade ago. While significant improvements have been made in reducing under-five mortality rates from 193 in

[2] https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html.

[3] EIU Zambia Country Report, February 2012

[4] http://hdrstats.undp.org/en/countries/profiles/ZMB.html

[5] http://data.worldbank.org/country/zambia

[6] National Human Development Report 2011, p 31
http://hdr.undp.org/en/reports/national/africa/zambia/NHDR_Zambia_2011_en.pdf

1990 to 83 in 2011[7], HIV prevalence rate is more than twice the average for the Sub-Saharan region, though it has stabilised[8].

Zambia is characterised by sharp rural-urban disparities and a predominant 'informal sector' in the economy. The percentage of people living below the national poverty line in urban areas stands at 28% while that for the rural population is as high as 78%. Around 96% of the employed rural population is engaged in the 'informal economy', mainly in subsistence agriculture, while 5% are unemployed. Zambia is also characterised by rising urbanisation where 70% of the population is engaged in informal sector employment with an unemployment rate of around 30%.[9]

After more than 15 years of deteriorating human development indices, the trends were reversed around 2006, helped by an 80% rise in the international price of copper – Zambia's main export - between 2002 and 2004, and a $4 billion debt-relief agreement in 2005[10].

Zambia has enjoyed GDP growth rates of around 6% over the past decade, supported by strong industrial and agricultural growth and investments in power and mining, which in turn reflected a significant increase in the international price of copper as demand has surged with the rise of newly emerging economies. However, Zambia's economy remains vulnerable to external factors, particularly including commodity price fluctuations, regional instability, particularly in neighbouring D. R. Congo, and climate change.[11]

The national currency, the Kwacha has stabilised in value, and inflation has dropped sharply from 30% to around 8% over the past decade, as has external debt as a share of GDP, down to 9.2% as compared to 192% in year 2000. Concurrently, and as a share of GDP, exports have risen by 10% while imports have fallen by 5% over the same period, enhancing the current account balance.

Even though copper exports currently account for more than 75 percent of the country's export revenues and 18 percent of its gross domestic product, Zambia is estimated to receive less than 10 percent of its total tax revenue from foreign mining companies, while domestic mining companies are predominantly state-owned.

According to the IMF: *"There is room to significantly raise revenues to help create fiscal space. Both with respect to mining and non-mining revenues, Zambia does not compare favourably with its comparators."*[12] A graph of Zambia's mining revenue comparators is included under Annex E.

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[7] http://www.unicef.org/infobycountry/zambia_statistics.html
[8] National Human Development Report 2011, p 31
[9] IMF Country Report No. 12/200, p.4
[10] http://allafrica.com/stories/200505260489.html
[11] See Annex F for a table of selected indictors for Zambia
[12] IMF Country Report No. 12/200, p.13

The medium-term outlook for Zambia's economy remains positive with growth rates projected to increase and stabilize in the 6-8% range along with low and stable inflation and currency rates as well as reduced levels of aid. Export-led growth is expected to continue to improve the current account balance, building up reserves[13] and, by definition, enhancing the potential for increased local investments.

Independent announcements in 2012 by Angola and South Africa to revitalise Southern Africa's railway infrastructure constitute a potential boost for Zambia's exports.

2.2 Zambia's industrial development – a brief history

2.2.1 Introduction

Zambia's industrial landscape and economic development efforts today are shaped by a number of key geographic factors and political events that are important to consider, particularly in a country programming exercise. The country is estimated to have the world's sixth largest copper deposits, and is the largest producer in Africa. Copper, cotton and ivory products were traded over long distances as early as the 12th century, particularly near the confluence of the Zambezi and the Kafue rivers.

Zambia's water abundance, gently sloping geography, large tracts of unutilized fertile land, and plentiful mineral wealth, particularly copper, make the country naturally rich in minerals, agriculture and hydropower, with significant trade growth and industrial development potential in line with the rest of the Southern and Central Africa sub-regions.

Exploitation of Zambian minerals – mainly copper - began in 1888, and continued until October 1964 when the Republic of Zambia was declared independent with Kenneth Kaunda - a strong supporter of the Non Aligned Movement - as its first President.

2.2.2 Post-independence: 1964-1990

Zambia's independence (along with Tanzania's) was ahead of its time for the region. Troubled relations with Rhodesia and South Africa and a deteriorating situation in Angola hampered trade and access to (hydro) power supplies, and exacted high economic costs[14]. A rail link was thus built to Dar es Salaam with

[13] Ibid, pp 9-11

[14] "The liberation [struggle for] independence took a great toll on Zambians and on Zambia's economy, and the world needs to understand this. Zambia hosted the African National Congress to liberate South Africa. Zambia hosted Swapo to liberate Namibia. Zambia hosted Frelimo to liberate Mozambique. Zambia hosted Zanu-PF and allied parties to liberate Zimbabwe. Zambia hosted

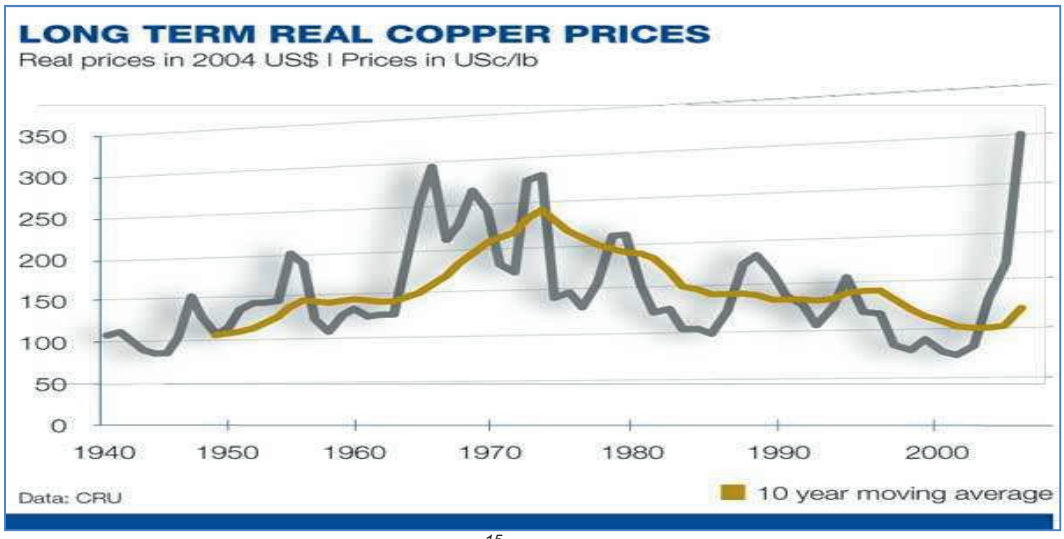
Chinese support, and an oil pipeline constructed to Tanzania's ports during the 1960s.

Zambia's manufacturing growth drive led to many companies operating across the country and providing employment with each region specialised in certain sub-sectors. In the west, cashew and other foods as well as fertiliser and its by-products were operational. In the northwest, there was the Mwinilunga Pineapple Industry. In the central-west region, textiles and blankets were produced. In the south, there were car and radio assembly plants. In the northern plateau region, there was Mansa batteries, while the east had a thriving bicycle industry.

Zambia's national wealth has been closely tied to and overwhelmingly dependent on the international price of copper for several decades, with copper earnings consistently comprising over 80% of government revenue.

As can be seen from the graph below, international copper prices were on the rise from the 1950s until the mid-70s when the international oil crisis hit industries across the world and reduced demand. With higher energy import costs and lower copper earnings, and surrounded by a hostile (and thus costly) geopolitical environment, the country's relatively strong position was quickly weakened.

Figure 1: Global copper price trends



Source: International cable makers federation[15]

With easy access to international public and private sector lenders, and as was the case with many countries at the time, Zambia became a heavily indebted country. Its economy began to slow down in the 1980s and shrank even more so in the 1990s while at the same time implementing austerity and structural adjustment policies (SAPs).

MPLA and Unita to liberate Angola, and Zambia continues to host and to stabilize the Congo area" See: http://allafrica.com/stories/200505260489.html?page=2

[15] http://www.icf.at/en/5756/trends_in_copper.html

2.2.3 Privatisation era: 1992-2010

Kaunda's election defeat in 1991 shortly after the fall of the Soviet Union led to the adoption of 'shock therapy' market-oriented privatisation policies by a newly elected government. According to a UNDP report: "With the exception of the countries in transition from central planning, it may be the case that no other country passed through economic liberalisation so radical and rapid as Zambia did during the first half of the 1990s."[16]

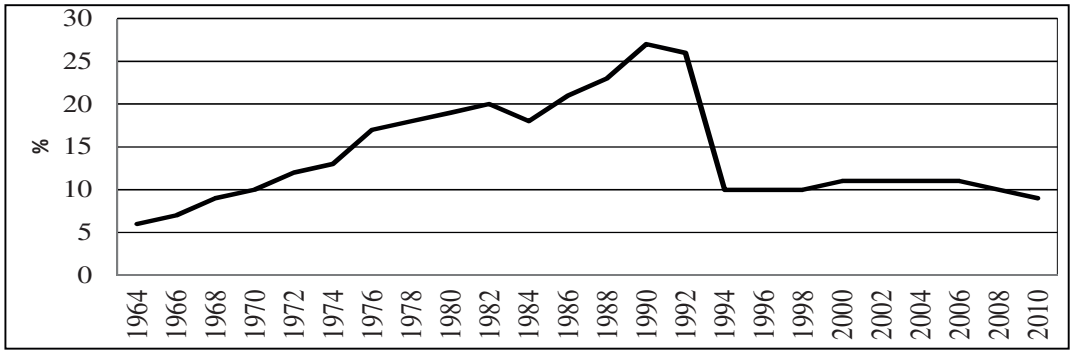
In the ensuing period, corruption became rampant, capital flight accelerated and Zambia's relatively strong industrial base was decimated. National statistical records show that Zambia's total manufacturing index rose by 25% through the 1980s, but fell by 30% following privatisation in the 1990s with industry showing negative growth over the 10-year period, reversing significant gains in the previous decade and in the period since independence (see tables under Annex D for details).

Wood and fabricated metals industries were almost wiped out in the 1990s, and strong gains made in the 1980s in sectors such as food and beverages, textiles, paper, chemicals, rubbers and plastics, and non-metallic mineral products were reversed.

Even in mining sectors that had faced deteriorating productivity and output throughout the 1980s (a 21% drop in their combined index over the decade), performance was significantly worse after privatisation (a 33% drop over the 1990s) despite the fact that international copper prices had stabilised and even steadily rose for much of the decade until the 1998 Asian financial crisis.

The impact of privatisation and structural adjustment policies (that began in 1992) on Zambia's manufacturing is shown in Figure 2 below. The GDP share of manufacturing in the country fell from 26% of the total in 1992 to just 10% by 1994. This represents a 62% fall in two years, with no recovery recorded in the share of the sector in the period since.

Figure 2: Share of Manufacturing of GDP (1964 -2010)



Source: Zambian Association of Manufactures

[16] UNDP & SOAS Centre for Development Policy & Research: 'Economic Policies for Growth, Employment and Poverty Reduction – Case study of Zambia'. 2007, P. 20

2.3 Agriculture

Agriculture employs 85% of the Zambian working population and, as mentioned above, agro-industries (food, tobacco & beverages) constituted 37% of manufacturing GDP in 2011. Zambia's main agricultural products include maize, sorghum, rice, peanuts, sunflower seed, vegetables, flowers, tobacco, cotton, sugarcane, cassava, coffee; cattle, goats, pigs, poultry, milk, eggs, and hides. Most analyses of the county's economy ascribe a central place to agriculture as a main driver of growth, particularly 'inclusive growth' with potential for poverty reduction.

According to the Economist Intelligence Unit (EIU): "Agricultural growth will be supported by an attractive corporate tax rate of 10% and the potential offered by Zambia's vast tracts of uncultivated arable land and abundant fresh water."[17] However, the sector remains vulnerable to droughts, as production is largely rain-fed.

A June 2012 UNIDO needs assessment report[18] identifies agro-industries as having high potential for economic growth and employment generation. The report identified leading sub-sectors to be livestock, dairy, fish, honey, maize, cassava, rice, palm oil, salt, cashew nuts and various fruits. Non-food products with potential for growth were also identified, including wood, leather and Jatropha (as bio fuel).

The study also emphasised a potential boost to synergies between industry and agriculture due to the new Government's strategy to establish several industrial clusters across Zambia (see below).

A 2011 UNIDO feasibility study[19] conducted in partnership with Gherzi[20] on a cotton-spinning mill in 11 sub-Saharan countries found Zambia to be among the best locations among the countries studied with double-digit rates of return in one or more of the calculated scenarios.

Among contributing factors listed were investment incentives, cheap energy and moderate labour costs. *"Also like Côte d'Ivoire, Zambia had a highly modern spinning mill that could be upgraded. In addition to having exports, Zambia has access to the market for yarn in Southern and East Africa"*[21].

[17] EIU Zambia Country Report September 2012, p.7

[18] Nadia Mrabit, Africa Bureau, draft report

[19] See http://www.unido.org/fileadmin/user_media/News/2011/11-83186_Ebook.pdf

[20] An international textiles consulting company – see http://www.gherzi.com/

[21] UNIDO & Gherzi, 2011, Feasibility Study for a Cotton Spinning Mill in 11 sub-Saharan Countries p. 105

2.4 Renewable energy sector & potential

Inadequate levels of electricity power generation, frequent power cuts, and rapidly rising demand coupled with rising costs of fuel and electricity (recently increased to cost-recovery levels by the government) are among the energy sector challenges facing Zambia.

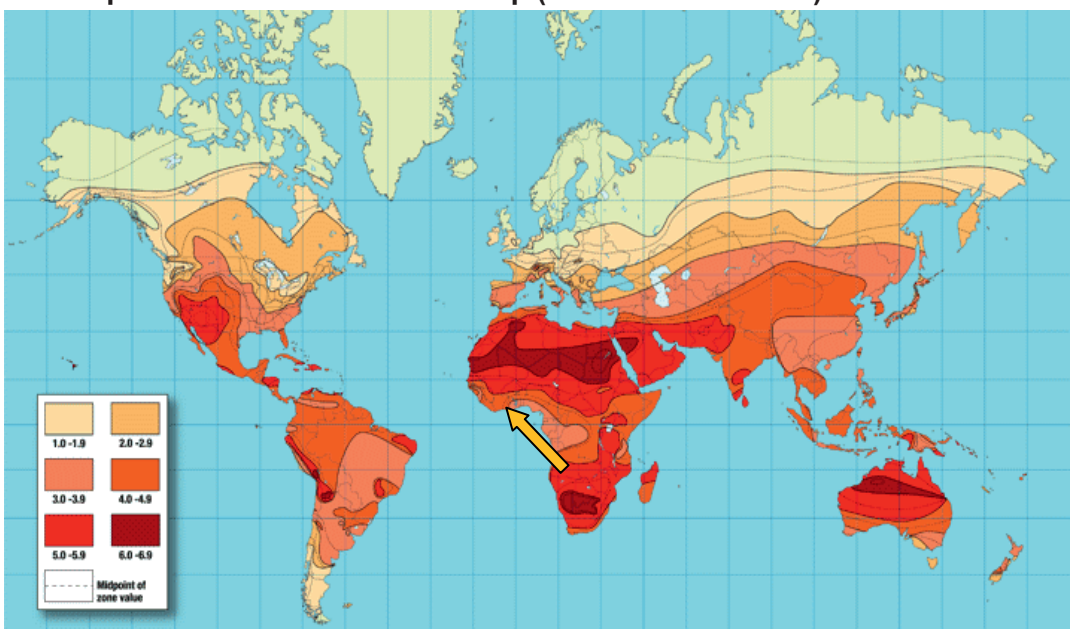
Within its large land area, Zambia has a good renewable energy potential particularly for hydropower, solar and biomass. Government estimates of the exploitable hydropower capacity is 6,000 MW with only 1/3 of this developed to date, mostly in large hydro stations on dams, as shown in the Table under Annex F. Hydropower already comprises nearly all of the electricity generation capacity in Zambia, and if developed as mini-hydro units (as the Zambian Electricity Supply Company has done to some degree), the technology has a strong potential to provide rural electrification in distributed mini-grids.

As can be seen in Map 2, Zambia has a high incidence of solar radiation with a potential of 3.225 kWh/m^2. This is 20% more than that available in Spain and twice as much that in the UK, countries that are going through a solar renaissance particularly in domestic level photovoltaic (PV) systems and megawatt level solar farms. The opportunity for solar PV electrification projects in Zambia is good and with the recent decreases in costs of PV technology, regional countries such as Kenya and South Africa have already seen a rapid uptake in the domestic PV market for rural populations.

With forest covering more than 50% of the land area, there also is a strong case for development of sustainable bio-energy projects, promoting forestry management as a side benefit. The technology for electricity generation from biomass can either be through raising steam from combusting materials in boilers to run a turbine/generator set (used in many countries but often in multi-megawatt projects), or by gasification of biomass to make producer gas that is then burnt in a regular diesel or gas engine to drive a generator.

Zambia's electricity sector has been developed to feed the country's mines and main cities and towns in the Copperbelt-Lusaka-Livingstone central zones. There are two main actors in the electricity sector: the Zambian Electricity Supply Company Ltd. (ZESCO), a state-owned company which generates, transmits and distributes/supplies electricity (with an 80% share); and the Copperbelt Energy Corporation (CEC) which transmits electricity to the mining industry.

Map 2: World solar resource map (measured in MJ/m^2) and Zambia



Source: www.sikaienergy.com

A third is an independent power producer, the Lunsenfwa Hydro Power Company, operating a 38 MW hydro plant in the centre of the country.

This grid network has provided only 22% of the whole population with access to electricity with a very low rate of 3.5% in rural areas while urban areas enjoy a 50% electrification rate[22].

The constraint on further renewable energy development has been two-fold. Firstly, due to the low-density settlement patterns the national grid only extends to the main population areas. This has left west, north-west, eastern and northern provinces un-electrified except for small-scale mini-hydro operators such as the Zengamina 700 kW project in the north-west and the Chishimba Falls and Lunzua in the northern province. Secondly, remote rural areas have become dependent on diesel generators. Steadily growing electricity demands on the aging grid networks has also constrained the country's ability to grow sustainably due to more frequent power shortages.

Nevertheless, the existing Kariba Dam capacity of 720 MW installed in the early 1960s is being rehabilitated and an extension of 360 MW on the North Bank is underway by ZESCO for completion in 2014. There is also a further 400 MW of large hydropower being worked on for 2016, and 23 grid extension projects with 5,000 km of lines with an investment of US$ 2 billion is due for completion in 2017.

[22] ZESCO/MEWD data (2009)

These projects will ease shortages on the existing grid but not address electricity supply shortages for the bulk of the population, which lives in dispersed towns and villages where there are no plans for grid extension, and where small-scale projects (1 or 2 MW size) would be more applicable.

2.5 Foreign direct investment and trade

In addition to its abundant mineral wealth, Zambia scores high on most democracy indices[23], and enjoys political stability, making the country favourable to foreign investment. It is also a member of two regional trade blocs: the Common Market for Eastern and Southern Africa (Comesa) and the Southern African Development Community (SADC).

China is by far the largest destination for Zambia's exports (35%), while South Africa (33%) and D. R. Congo (22%) are its largest import origins today.

FDI inflows have continued to rise throughout the past decade, reaching $2 billion in 2011[24], and making Zambia Africa's second highest LDC destination for investors after Mozambique[25]. Of this, $700 million was invested by a single Chinese company, (Non-Ferrous China Africa) in the mining of copper, nickel, lead and zinc. [26]

FDI pledges, on the other hand, *have "more than doubled to $10.1 billion in 2012, although this is partly a result of short-term factors such as high international copper prices and low returns on Western securities*"[27].

Interestingly, Zambia was also the second highest source of FDI in Africa in 2011.[28]

2.6 FDI, local linkages and employment

The impact of a surge in FDI on employment since privatisation has been low in most sectors. Employment in mining rose by less than 2%, from 52,000 in 1995 to 53,000 in 2003, while linkages with local companies remain scarce. The abovementioned Chinese company's $700 million investment in mining is projected to create an estimated 1,201 jobs[29].

[23] See for example Economist Intelligence Unit, Zambia Country Report March 2013, p. 3
[24] UNCTAD World Investment Report 2012, p. 39
[25] Ibid, p. 64
[26] Ibid, p. 65
[27] Economist Intelligence Unit, Zambia Country Report March 2013, p. 2
[28] UNCTAD World Investment Report 2012, p.39
[29] Ibid, p. 65

Local linkages have been stronger in agriculture as compared to industry, with noted successes for example in cotton and horticulture. A November 2012 study commissioned by the Zambian Association of Manufacturers (ZAM) found *"local suppliers (i.e. here categorised as long established companies owned by registered Zambian Residents and Citizens and manufacturers) account for about 4.4% of market share of mining input supply business."*[30]

The study identifies five key reasons for low levels of local procurement amongst suppliers as follows:

i. Inability to compete with imports due to high costs of local production with most local manufacturers using outdated and inefficient plants, exacerbated by lack of access to long-term capital for refinancing production infrastructure rehabilitation and upgrading;

ii. Inability to implement strict product quality standards through failure to invest in technology, skills and equipment upgrades and, modern operating procedures. This is exacerbated by the absence of more robust Quality Assurance (QA) systems and procedures to aid the maintenance of production standards;

iii. Lack of awareness of supply opportunities, especially new products and services as they have insufficient knowledge of what mining companies actually use as productive inputs;

iv. A failure to meet financing costs of maintaining stocks of raw materials and other inputs in order to respond to mining supply enquiries in a timely manner and lack of access to both short and medium term finance.

v. High cost of production inputs (i.e. raw materials and aids to production, such as electricity) and the structure of import tariffs - In some cases, imported finished products face lower duties whilst some are tax exempt. In addition, some mining inputs are zero rated where imported directly by mine operators under existing tax incentive regimes.

2.7 National development priorities

Zambia's 'Vision 2030', entitled 'A prosperous Middle-income Nation by 2030' is based on the following pillars and targets:

- Economic Growth and Wealth Creation;
- Social Investment and Human Development;
- Creating and enabling Environment for sustainable social economic development.

[30] 'Zambian mining local content initiative', Discussion Paper, Leveraging Zambia's industrialization with growth of copper mining investments

It also identifies the following core social principles[31]:

- Gender responsive sustainable development;
- Upholding democratic principles;
- Respect for human rights;
- Fostering family values;
- Positive attitude to work;
- Private-public partnerships.

Zambia's medium-term strategy is outlined in the Sixth National Development Plan. According to the SNDP,

"*The objectives of the SNDP are to: accelerate infrastructure development; economic growth and diversification; promote rural investment and accelerate poverty reduction and enhance human development. While recognizing the importance of balanced growth in all sectors of the economy, the SNDP priority growth sectors are Agriculture, Livestock and Fisheries, Mining, Tourism, Manufacturing and Commerce and Trade*." (p. xii)

2.7.1 Manufacturing sector strategy

The SNDP's manufacturing sector objectives and strategies are given in a tabular format, as replicated in Table 2 below. The strategy is focused on expanding the industrial base and value addition through dedicated production zones and public-private partnerships (PPP); investment promotion; and enterprise development with a focus on agribusiness.

Table 2: Zambia's manufacturing sector objectives and strategies

Objective	Strategy
1. To expand the industrial base and increase value addition	a) Facilitate the development of Multi-Facility Economic Zones /Industrial Parks; b) Promote joint ventures between foreign and local investors; c) Promote and facilitate Private Public Partnership (PPP) projects; and d) Enhance the capacity of DRM.
2. To facilitate private sector development (Investment promotion)	a) Promote investment in infrastructure in order to stimulate private investment; b) Develop the National Investment Promotion Strategy; c) Undertake investment missions to Capital and Technology Exporting Nations and within the domestic economy; d) Provide incentives to facilitate technological transfer; e) Establish a more cohesive policy and supportive regulatory

[31] http://zambiachambers.org/index.php?option=com_docman&task=doc_download&gid=3&Itemid=61

Objective	Strategy
	and institutional framework for investment; f) Encourage industries to adopt cleaner and environment friendly technology and practices; and g) Promote private sector driven Research and Development activities.
3. To promote the growth of MSMEs	a) Increase participation of indigenous Zambians in the manufacturing sector; b) Promote entrepreneurship training and development at all levels of the education system; c) Encourage innovation and technological skills development and on-farm agro-processing training; d) Facilitate access to market opportunities and business development services; e) Facilitate the establishment of business incubation centres and linking them to industrial parks; f) Facilitate the establishment of business industrial clusters; g) Facilitate business linkages between MSMEs and multinational corporations.
4. To develop rural based industrial enterprises	a) Promote and facilitate the development of appropriate infrastructure; b) Develop and implement a rural industrialisation strategy; c) Promote the use of alternative and renewable sources of energy; d) Encourage on-site agro-processing in agricultural farm blocks; and e) Establish linkages between agricultural farming blocks, industrial estates and out-grower schemes.

2.7.2 Energy strategy

The SNDP states: *"In achieving the SNDP objective of accelerating and diversifying growth, and enhancing rural development, it is essential that reliability of supply of energy is fully achieved. An expansion in the mining, agriculture, tourism and manufacturing sectors combined with other socio-economic actions will require a secure supply of electricity and a reliable and cost effective fuel delivery system.*

In this regard, the strategic focus of the energy sector in the SNDP will be to ensure that adequate and reliable supply of energy is made available through development of appropriate infrastructure to improve the electricity generation capacity and also assure efficiency and cost effectiveness in the supply of fuel. This will guarantee availability of sufficient quantities of energy to support the development processes in the growth sectors of the economy, especially agriculture and manufacturing."

The Plan's targets include:

- An increase of at least 1,000 MW to the 2010 electricity generation capacity of 1,900 MW;
- An increase of rural access to electricity from 3.5 percent to at least 15 percent and national access from 22 percent to 40 percent".

2.7.3 Changes in national priorities since 2011 elections

Zambia's new policy drive since the 2011 election has been on boosting mining revenues (mainly through enforcing compliance with existing tax rates and regulations by foreign investors), supporting local investment, lowering unemployment, and fighting corruption.

In order to boost revenues from mining, a ban on all raw copper exports was proposed on 10 April 2012. This was to counteract privatisation deals that reduced Zambia's role to that of a source of raw metal for mining corporations[32] during the privatisation period. However, the new government's early efforts to increase revenues and its share in mining ownership were hindered by a lack of processing capacity at the required levels.

A top priority of the new government in this regard is to revitalise provincial productive capacities in line with the country's post-independence industrial development strategy outlined above.

This entails the establishment of decentralised and diversified industrial production centres based on agribusiness and light manufacturing. In tandem, emphasis is placed on implementing decentralised hydropower generation programmes together with expanding the transportation infrastructure, both of which are seen as essential for manufacturing growth, private sector development and job creation.

The Government's focus on enhancing benefits to the local population has also paid dividends. The royalty rate for copper production was doubled in the 2012 budget.

Moreover, and as an example, in February 2013 Zambia revoked the mining licence of a mining company[33] on grounds of low pay to workers[34], failure to pay royalties, and health and safety violations. At the same time, "Zambia's copper output is expected to hit 1.5 million tonnes by 2017 as foreign companies pour $3 billion into the sector."[35]

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[32] At the time of privatization, the market price of copper was below $2 per kilo, relatively low compared to present prices that are closer to $10. The country had little choice but to accept the terms offered by foreign mining interests with low taxes and minimal mine ownership stakes for the government

[33] http://www.mining.com/zambia-revokes-license-for-chinese-owned-coal-mine-65841/

[34] http://www.hrw.org/news/2011/11/03/zambia-workers-detail-abuse-chinese-owned-mines

[35] http://www.mining.com/copper-production-in-zambia-on-track-for-1-5m-tonnes-95646/

2.8 Risks

Analyses by the IMF and the EIU suggest that the new government's drive for higher mining sector returns for Zambia is likely to be adhered to by foreign investors. This is not expected to cause undue disruption to the economy or the flow of foreign investments. Likewise, the new government's anti-corruption drive is also unlikely to cause political instability.

The biggest risks for Zambia's economy are identified by the IMF and EIU[36] as:

- Persisting and high levels of poverty;
- A downturn in the global demand for copper due to economic crises in Europe.

2.9 Development cooperation

International aid levels for Zambia reached a peak of almost 140% of government expenses in 2002. Since then, Zambia's reliance on ODA has decreased significantly, though it still constituted 30% of central government budget in 2010, as the Figure below shows.

According to the OECD, Zambia received just under $1.1 billion in ODA in 2011, down from $1.3 billion in 2009 with an increasing share of this coming from bilateral donors (65% in 2011, as compared to 55% in 2009). Around 30% of the aid flows from Europe, 25% from USA, 10% from the Bretton Woods Institutions, and around 12% from Japan and the Global Fund, leaving a 23% share for others, including the UN. Only around 7% of Zambia's total OECD-country bilateral ODA is estimated to be allocated to productive sectors.[37]

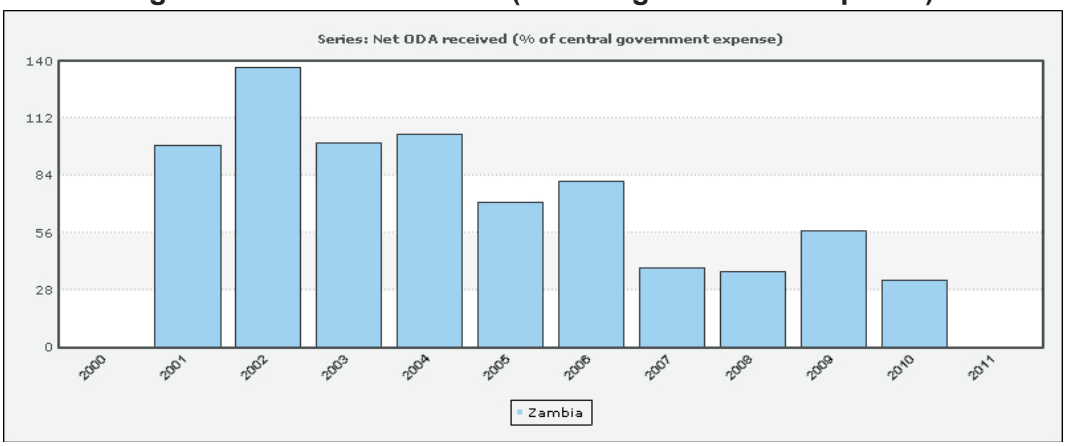
OECD figures indicate that Zambia's aid dependence intensified during the 1990s and has remained the same since then. Based on 2010 prices and exchange rates, Zambia has received an average of $1.2 billion in ODA a year since 1990, up from $736 million annually in the 1980s and $301 million a year over the 1970s.[38] These figures, however, do not reflect growing levels of aid from emerging economies of the Global South, particularly China and South Africa.

[36] See The IMF Zambia Country Report No. 12/200; and EIU Zambia Country Report, March 2013

[37] http://www.oecd.org/dac/stats/ZMB.gif

[38] Development Aid at a Glance – Statistics by Region, 2. Africa, 2013 edition. P.8 http://www.oecd.org/dac/stats/Africa%20-%20Development%20Aid%20at%20a%20Glance%202013.pdf

Figure 3: Net ODA received (as % of government expense)



Source: World Bank databank

2.10 Donor coordination in Zambia

The Cooperating Partners (CPs) in Zambia, including all OECD bilateral donors and multilateral agencies, are party to the second Joint Assistance Strategy for Zambia, 2011-2015 (JASZ II) signed in November 2011. The document outlines the CPs' 'response' to Zambia's Sixth National Development Plan with focus on economic growth and diversification; infrastructure development (transport and renewable energy); and rural investment and poverty reduction. It also outlines cooperation principles based on the Paris Declaration on Aid Effectiveness, partnership and results orientation, and domestic accountability.

2.11 The UN in Zambia

The current framework the UN in Zambia is provided by the UN Development Assistance Framework (UNDAF) 2011-2015[39].

There are five broad UNDAF Themes[40], two of which (2 and 4) directly relate to UNIDO's portfolio:

1. HIV & AIDS;
2. Sustainable Livelihoods and Food Security;
3. Human Development;
4. Climate Change, Environment and Disaster Risk Reduction and Response; and
5. Good Governance and Gender Equality.

[39] http://planipolis.iiep.unesco.org/upload/Zambia/Zambia_UNDAF_2011_2015.pdf

[40] (1) HIV and AIDS; (2) Sustainable Livelihoods and Food Security; (3) Human Development; (4); Climate Change, Environment and Disaster Risk Reduction and Response; and, (5) Good Governance and Gender Equality

The UNDAF Outcome 2 includes:

i. Food security (of which improved agriculture will be the bedrock); and,
ii. Jobs and employment creation (with particular attention to capacity development of the micro-, small and medium enterprises).

The fourth UNDAF outcome aims to achieve the development of institutional capacities to effectively sustain, manage and protect livelihoods from the risks of climate change, disasters and environmental degradation.

The UNDAF refers to UNIDO under the following 'Country Programme Outcomes':

a. **Outcome 2.2** - Government and partners provide targeted groups[41] with opportunities for gainful and decent employment by 2015.
b. **Outcome 4.2** - Government promotes adaptation and provide mitigation measures to protect livelihoods from climate change by 2015; with a resource mobilization target of $2.7 million; and
c. **Outcome 4.3** - Government implements policies and legal frameworks for sustainable community based natural resources management by 2015"; with a resource mobilization target of $1.5 million.

Under the UNDAF, therefore, UNIDO's 'Country Programme' in Zambia can be described as consisting of the above 3 Country Programme Outcomes. In particular, UNIDO's renewable energy projects fall under Outcomes 4.2 and 4.3 (see pages 33-34 of UNDAF). The TCB and Montreal Protocol projects, on the other hand, fall under Outcome 2.2 in that they support the agribusiness sector. The SPX project as well as the Cotton Study also falls under Outcome 2.2 of the UNDAF as they were designed to support private sector development and employment generation.

UNIDO's total resource mobilization target under the UNDAF was estimated at $4.2 million. So far, there is little indication of this target being met, as most of the UNIDO fundraising was achieved prior to the current UNDAF period (see below).

Each UNDAF Outcome has a Team comprising of members, convenors and leaders. As a Non-Resident Agency (NRA), UNIDO is not a member of the UNDAF Teams (clusters). Team 2 is led by FAO & ILO, while Team 4 is led by WFP & UNDP. However, UNIDO is expected to contribute to existing mechanisms and reporting on UNDAF Outcome results annually.

A UN Code of Conduct was adopted by the UN Country Team early in 2011, and Zambia became one of the Delivering as One self-starter countries in July same year. However, there is no One Fund mechanism in place, and most of the inter-agency cooperation is concentrated at the programme level. Furthermore, DaO

[41] MSMEs, youth, women, people with disabilities and people living with HIV/AIDS

coordination and advocacy is funded (in part) through a project modality with Irish and Swedish funding.

Examples of UN joint programmes of relevance to UNIDO in Zambia include (but are not limited to):

- Private sector development (June 2012-2016; $9 million planned budget; $1.3 million funded by Finland; ILO, UNCTAD, UNEP, FAO, ITC); and
- Climate change and DRR (2-12-2016; $18 million rose; $6 million unfunded; UNDP, FAO, UNCCD, UN-HABITAT, UNICEF, UNIDO and WFP).

3.

Description of UNIDO activities

3.1 UNIDO's overall project portfolio from 2001-2012

UNIDO's portfolio in Zambia over the past decade has been focused in the main on renewable energy and environment (SHP & Montreal Protocol), and trade capacity building. In addition, there were two regional projects that covered Zambia among others, namely, support to SMEs (SPX – regional), and a regional cotton sector study.

The total allotment for the period 2001-2012 amounts to over $11.4 million with expenditures reaching $10.2 as of December 2012, and thus an overall delivery rate of 90% for the full period, and 89% under the current UNDAF.

In terms of budget shares, UNIDO's activities in Zambia have been overwhelmingly in the field of renewable energy (67%) followed by environment (MP; 4%), which combined constitute 71% of the total budget.

The TCB portfolio constitutes just under 28% of the total budget, leaving around 1% for SPX and the Cotton Sector Study combined.

The funding for UNIDO projects in Zambia has come largely from the Government of Zambia (30%); the Global Environment Facility (34%); Norway (28%), and the Montreal Protocol Multilateral Fund (4%), with the remainder coming largely from UNIDO's programmable resources.

The overall project portfolio can be seen in the following Table.

Table 3: UNIDO's project portfolio for the period 2001-2012 in Zambia

Theme (T)	Proj. Title	Project No. (donor)	From : To	Org units	Allotment	Disbursement
Renewable Energy	Renewable energy based electricity generation for isolated mini-grids in Zambia-additional funding for setting up a mini-hydropower plant as a part of the SHP mini-grid at Shiwa Ngandu	SF/ZAM/10/001 (GoZ - ZESCO)	06/2010 : 12/2011	Renewable and Rural Energy Unit	$3,324,074	$2,904,911
	Renewable Energy powered rural demonstration telecentre	XP/ZAM/07/001 (and GP/RAF/04/001)	11/2007 : 11/2009	Renewable and Rural Energy Unit	$783,501	$781,429
	Renewable energy based electricity generation for isolated mini-grids in Zambia	GP/ZAM/06/001 (GEF)	08/2006 : 31/2011	Renewable and Rural Energy Unit	$2,936,600	$2,926,058
	Renewable energy entrepreneurship development for augmented youth employment in Zambia	YA/ZAM/03/471 (and XA/ZAM/03/654)	09/2003 : 12/2006	Industrial Energy Efficiency Branch	$300,000	$210,756
	Renewable energy- based electricity generation for isolated mini-grids in Zambia	GF/ZAM/01/001 (GEF)	11/2001 : 06/2006	Industrial Energy Efficiency Branch	$324,868	$324,868
Environment (Montreal Protocol)	Technical assistance for the total phase-out of methyl bromide in tobacco, cut flowers, horticulture and post harvest uses[42]	MP/ZAM/11/001 MP/ZAM/08/002 (also: MP/ZAM/08/001 MP/ZAM/05/001) (Montreal Protocol)	12/2008 : current	Agri-Business Development Unit	$459,548	$440,000
Trade Capacity Building	Joint UNIDO-WTO trade capacity building programme framework for Zambia	TE/ZAM/09/001 (Norway)	04/2009: current	Compliance Infrastructure Unit	$3,179,085	$2,452,014
SME support (Regional)	Establishment of Subcontracting and Partnership Exchange Centres (SPXs)	TE/RAF/08/024 (South Africa)	01/2009: 11/2012	Investment Promotion Unit	$100,000	$100,000
Cotton sector study (regional)[43]	Benchmarking 11 sub-Saharan cotton producing countries as a possible location for the setting-up of a cotton yarn spinning	XP/RAF/08/005	06/2008: 06/2009	Agri-Business Development Unit	$22,000	$22,000
Total					$11,259,676	$10,162,036

Source: Infobase as of December, 2012

[42] Estimated budget and expenditure figures for ongoing HCFC project as it does not have clear cut annual budget targets

[43] The budget figure is a rough estimate of the portion utilized for Zambia out of a total budget of $170,247

3.2 Renewable energy

With a total allotment of $7.7 million, UNIDO's renewable energy portfolio in Zambia constitutes one of its largest RE programmes in any country.

Starting from the first GEF funded project in 2001, UNIDO has focused on the promotion of a range of renewable energy alternatives for rural electrification with a link to productive use activities and local employment opportunities. The programme aims to increase commercially viable, reliable and renewable energy services as a means for promoting income generation activities in the rural areas.

The first project (2001) focused on installing decentralised mini-grids based on micro-hydro and biomass gasifier technologies. This small project formed a foundation for later cooperation.

In October 2003, a new initiative aimed to promote renewable energy entrepreneurship. The project was implemented through a locally sub-contracted agency[44] responsible for setting up a local renewable energy park in Kasama.

A related initiative subsequently established a 'rural tele-centre', as a remotely powered information and technology centre with a pilot site in Chinyunyu. This was designed to serve as a hub for allowing communication (mobile phone charging and network access, internet services) and other services requiring electrification (photocopying, computing), thus providing an important service to rural communities in an off-grid locality.

In what can be described as the third (current) phase of UNIDO support to the sector starting in 2006, UNIDO's efforts were concentrated on a partnership with GEF, UNEP, the International Centre for Small Hydro Power (ICSHP), Development Bank of Zambia (ZDA) and ZESCO, with the Zambia Department of Energy as the national counterpart agency. Feasibility studies were carried out on two mini grids involving mini-hydro and biomass gasification, and approved by the Environmental Council of Zambia in 2008.

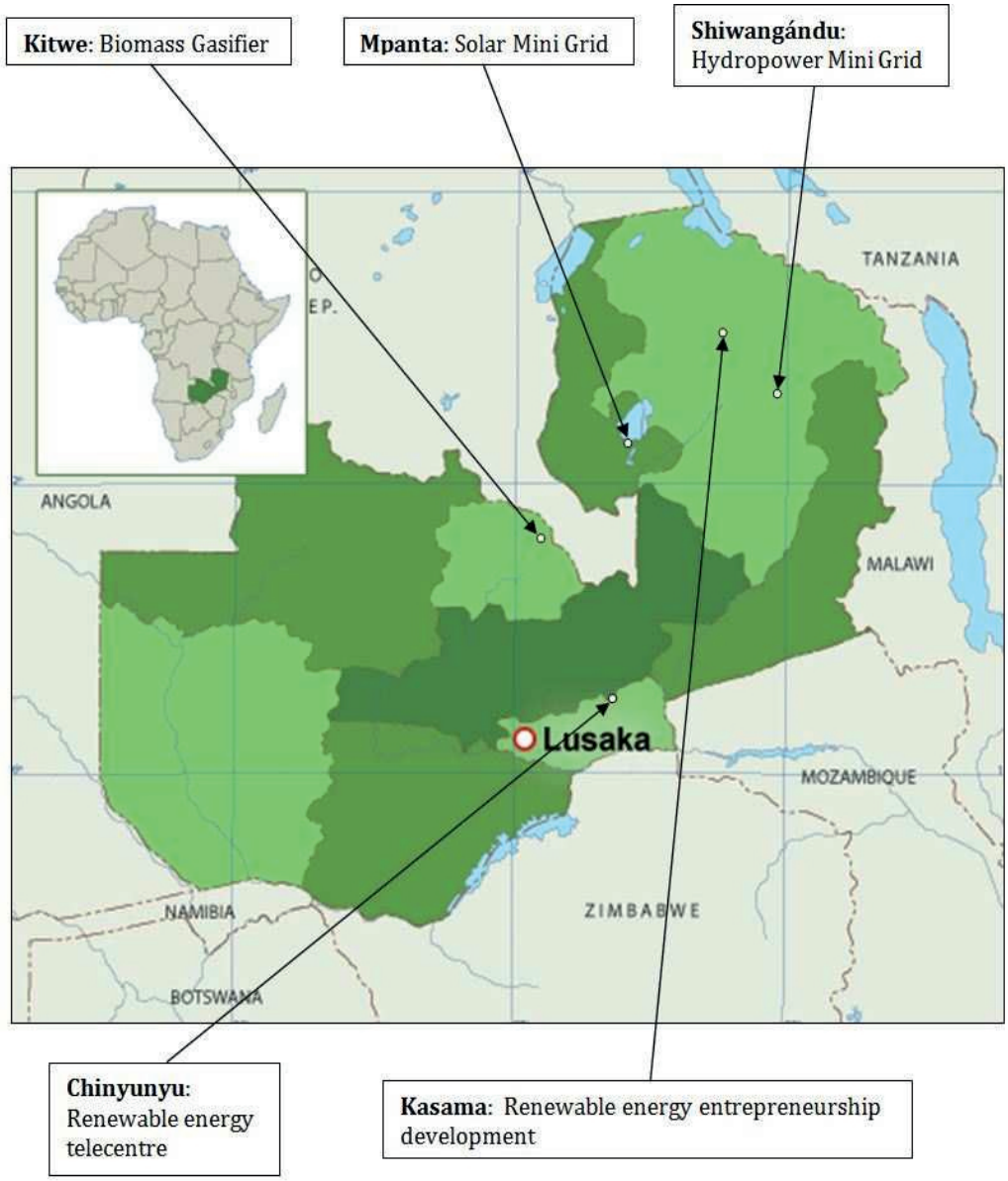
In addition, consultations were conducted with private investors and the Rural Electrification Authority, and a detailed feasibility study was carried out on a solar mini-grid completed in 2009. This led to a series of larger programmes at the small-hydro (rather than micro) level and biomass generators for the establishment of decentralised mini-grids with significant co-financing by GEF and national authorities. This includes a $3.55 million trust fund agreement between ZESCO and UNIDO for the construction through ICSHP of a one-megawatt SHP at Shiwa Ngandu , in the northeast of Zambia with an additional $500,000 input by UNIDO.

[44] Elias Mutale Youth Skills Training Centre at Kasama

Concurrently, collaboration was established between Glamorgan University and University of Zambia at Lusaka for initiating a renewable energy course for graduate engineers in Zambia.

As shown in Map 3 below, the chosen sites were Shiwa Ngandu near Chinsali in Muchinga Province for a 1 MW small hydropower (SHP) plant with more than 40 km of grid lines to local villages; Mpanta on the edge of Lake Bangweulu in Luapula Province for a 60 kW solar PV plant with mini-grid; and a small 25 kW biomass gasifier pilot plant demonstrated in Ndola in Copperbelt Province, with a plan to pursue a 1 MW development with mini-grid at nearby Kitwe.

Map 3: UNIDO renewable energy projects



UNIDO also has a project in the pipeline entitled “Up-scaling small hydropower mini-grid development in Zambia to deliver renewable energy for productive uses - feasibility study phase”, which will undertake four (4) feasibility studies accompanied by financing packages in order to assist ZESCO to access project implementation funds for projects ranging from 230 - 2,500 kW capacity. This project is due to start in 2013.

Zambia has also benefited from further UNIDO support as a result of participating in the following regional renewable energy programmes:

- Capacity building in energy efficiency and renewable energy regulation and policy making in Africa [2006];
- Strengthening the International Centre for Small Hydro Power for productive uses in selected African countries [2007];
- Africa/LAC interregional knowledge transfer programme: Renewable energy for productive uses [2008];
- Awareness creation and capacity building of high-level policy makers from selected African countries on small hydropower development [2008].

3.3 Montreal Protocol (MP)

This set of projects is comprised of four separate small-scale interventions. At the time of the evaluation mission, two were still ongoing.

The first of the ongoing projects relates to phase out of Methyl Bromides in tobacco, cut flowers, horticulture and post harvest uses. The project was approved in 2008 and started in 2009 with a total allotment of $289,548 and was due for completion by the end of 2012. Project implementation at the country level was largely carried out through a sub-contract arrangement signed in February 2010 with the responsible national agency, the Environmental Council of Zambia. The project focus is on policy assistance (UNEP), supply of training materials, and training for customs officials and technicians, as well as training of trainers to work with farmers.

The second is a Hydrochlorofluorocarbons (HCFCs) Phase-out Management Plan (HPMP) Project with a 10-year timeframe starting late in 2012 and a total budget of $140,000. As part of support to Zambia’s implementation of its Montreal Protocol commitments to phase out HCFCs[45], this project is designed to strengthen 3 centres for recovery and retrofitting of HCFC refrigeration units. It is a part of a larger project led by UNEP, which has a ‘software’ role mainly in regulatory and capacity building activities, while UNIDO deals with ‘hardware’ in procurement and related training.

[45] Zambia does not produce any HCFCs, but addresses HCFCs in imported machinery and chemicals

3.4 Trade capacity building (TCB)

The TCB project had its first funding (first tranche of EURO 270,582 out of a total budget of €2.4 million[46]) issued in April 2009, and implementation started in August same year. Funded by Norway, the project was developed with the WTO 'as a practical example of 'aid-for-trade' as it complements IF [Integrated Framework] work and includes actions to overcome specific supply-side constraints while at the same time strengthening the Zambian metrology, standard and conformity assessment infrastructure'.

The principal objective of the project is to enhance the export performance of Zambia. This was to be done by creating conditions for strengthening the national legislative framework supporting standards, technical regulations, metrology, testing and quality (SMTQ) through support to the MCTI (Outcome 1). The project also aims to address deficiencies in the SMTQ conformity assessment infrastructure through strengthening of the relevant standards, metrology and testing institutes to provide services to strategic export sectors and for the protection of consumers (Outcome 2).

Moreover, the project would focus on alleviating barriers to the export of honey, paprika and coffee by strengthening testing and providing standards and codes of practice for producers, and hence improving production quality (Outcome 3).

A fourth Outcome foreseen in the project is to strengthen the policy and negotiations capabilities of the Government trade officials, to be implemented by WTO.

During the inception phase, the project's LogFrame was revised, and the number of Outcomes rose to seven. Of the three 'new' Outcomes:

- One referred to the set up of a project implementation and monitoring system as an Outcome;
- Two new Outcomes were created to separate standards, metrology and testing elements of the original Outcome 2 stated above.

The project was subjected to a mid-term review in June 2012, and project plans include an independent tripartite (Government, UNIDO & Norway) terminal evaluation planned for mid-2013. The 'lessons and recommendations' of the mid-term review are included under Annex G.

[46] Excluding support costs amounting to €311,805

3.5 SME support (SPX)

The SPX project (Regional Supplier Benchmarking Programme – TE/RAF/08/024) was approved in 2008 and launched in September as a sub-regional, $713,000 programme funded by South Africa. The project aimed to establish Subcontracting & Partnership Exchange (SPX) Centres in five countries in the Southern Africa region in order to help connect local suppliers (producers) with international and foreign buyers (investors). The allocation foreseen for Zambia amounted to about $100,000.

The counterpart organisation selected was the Micro, Small and Medium Enterprises (MSME) Department of the Zambia Development Agency (ZDA), an umbrella, semi-autonomous organisation under the MCTI. ZDA is also responsible for investment promotion, and was established in year 2007 (legislated in May 2006) through the amalgamation of the Zambia Investment Centre, the Export Board of Zambia, the Zambia Privatisation Agency, and the Small Enterprises Development Boards. It is designed to serve as a one-stop facility for investors and exporters, and to help develop the private sector, including SMEs.

The project comprised of initial training for the project team to mainstream SPX services, mainly focusing on enterprise profiling, matchmaking and benchmarking. It was designed to help match local and foreign companies, where foreign 'buyers' (inside or outside Zambia) would make use of local suppliers through a matchmaking of needs with capacities. For this, company profiles were developed, and then linked to demand.

SPX benchmarking is another service that compares the performances of companies with others in their own field with a similar size and type. The service can be performed locally, regionally or internationally, and helps companies gauge their own performance and practice against specific sectoral and/or category benchmarks.

The third component provides a diagnosis of the 'upgrading' needs of companies, based on the first two services. This would then help them formulate investment plans.

4.

Assessment

4.1 Energy and environment

4.1.1 Relevance & ownership

As outlined in the Vision 2030 and the SNDP, as well as the UNDAF, JASZ II[47] and the IMF Country Reports, the three biggest challenges to sustainable development and economic diversification in Zambia are identified by virtually all public and private sector partners to be:

1. Poverty;
2. Lack of energy supplies; and
3. Inadequate transportation infrastructure.

A key to addressing all these three areas is renewable energy with use of three renewable resources that are abundant in Zambia, namely water, sunlight and biomass. UNIDO's renewable energy initiatives are thus highly relevant to Zambia's needs and existing priorities, including in education and health, private sector development, employment generation, investment promotion, manufacturing diversification and growth (power generation for manufacturing) and competitiveness (cost of energy), ICT expansion, rural regeneration and industrial clusters, environmental sustainability (lowering carbon emissions), and inclusive growth.

The level of relevance was also evident by the presence of both President Sata and Dr. Kaunda at the commissioning ceremony of the Shiwa Ngandu mini-hydro plant, which attracted a great deal of media attention[48]. This was in part because it was the first plant of its type launched in the country in 4 decades.[49]

The linkages set up with the main partners and stakeholders in the projects (MEWD and DOE, ZESCO, DBZ, REA, CEC) were good, but it was found that there was a missed opportunity to involve what is usually UNIDO's natural partner, the Ministry of Trade and Industry, who were (surprisingly) not aware of the projects. The Ministry would have benefitted from taking the journey that the other parties did, because of their plans for rural industrialisation where mini-grid electrification projects are a crucial ingredient to realising these plans.

[47] Joint Assistance Strategy for Zambia, 2011-2015

[48] See for example: http://www.lusakatimes.com/2012/12/07/week-pictures-56/

[49] http://www.unido.org/media-centre/press-releases/news/article/date////president-sata-calls-on-unido-to-bring-renewable-electricity-to-rural-zambia.html

The ownership of the MP projects is clear, particularly in the management and implementation arrangements that are fully nationally led through a subcontract arrangement.

4.1.2 Efficiency

Coordination

There was excellent overall co-ordination and synergy with the national agencies (MEWD and DOE, ZESCO, DBZ, REA, CEC) to deliver the mini-grid projects. The Steering Committee set up to review progress about twice a year was an effective tool for seeing the SHP project through to completion and should be continued for the coming year (even in UNIDO HQ's absence) to deliver the solar PV and biomass components.

The lack of coordination with the MCTI has not affected efficiency of delivery in the concerned projects. However, it is clear that linkages between UNIDO's work and the rural industrial cluster programme of MCTI and investment promotion initiatives in Zambia could have been explored with overall potential benefit to Zambian development, which is clearly within the mandate and mission of UNIDO.

Similarly, the UNRCO sometimes only heard about UNIDO projects from the local media rather than from UNIDO.

Cost effectiveness and timeliness

When looking at the costs of the 1 MW SHP infrastructure itself, the evaluation estimates the following broad breakdown (Table 4). Comparing to costs for medium head SHP built recently in developing countries, the cost per kW of US$ 4,350 is regarded as average. However, considering that the project had many other fringe benefits such as the South-South co-operation fostered for construction (IC-SHP) and University of Glamorgan for student trainings at the University of Zambia and demonstrating an innovative financing using the PPP approach though the DBZ, this is regarded as a cost-effective use of UNIDO/GEF and ZESCO resources. The smooth partnership between UNIDO, IC-SHP, ZESCO and REA for their component parts within the project is noted as a contributor to this efficiency.

For the 60 kW solar PV mini-grid, it was found that delays were encountered due to the difficulty in finding an investor and a budgetary agreement had to be forged with the DOE to allow the missing co-financing to meet that committed by REA. As a result, project completion did not meet the same deadline that the SHP project managed and although a 60 kW mini-grid requires a specialist to install, the off-the-shelf nature of the technology should allow this to be delivered in 2013.

Table 4: Cost breakdown of major SHP components

Component	Responsible	Estimated cost (US$)
Design	UNIDO	265,926
Civils, M&E	IC-SHP	3,174,074
Transmission lines	REA	710,000
Project support		200,000
	Total	**4,350,000**

NB - DBZ loan financing through the RRMF[50] = $ 562,000 (13%).The costs drawn out of the overall budgeting for the 2 parts of the project (GP/ZAM/06/001 and SF/ZAM/10/001), add up to a total of US$ 1.031 million (DBZ loan in that being US$ 646,000 or 63%) equivalent to US$ 17,187 per kW, which is relatively high. This does not include a further US$ 182,000 budgeted for the mini-grid power lines. This may be due to the placing of orders for PV equipment earlier in 2012 (prices have dropped significantly through 2012) and the cost of mobilising the project in a remote part of Zambia for the first time at this scale.

For the 1 MW biomass gasifier plant, although a 25 kW pilot project was set up by the investor and project leader, CEC, they were late into the project process and there may be further delays in delivering a significantly larger project by the DBZ loan financing deadline of December 2013. The main delay was caused by uncertainty about the correct location for the biomass gasifier of a relatively large capacity and the availability of fuel that can be sourced sustainably and locally for the project. The project site was relocated from Kaputa (Northern Province) to Kitwe (Copperbelt Province). Now, a new environmental permitting process is underway and there are further outstanding issues on linkage to the transmission network, and whether the plant can be considered 'rural' and therefore avail of a "smart subsidy". This may mean the site has to be relocated to Lufwayama District and perhaps be a smaller capacity of 500 kW (as this is the size of the modular units). There are therefore a number of outstanding issues to finally resolve with the gasifier project, which will need UNIDO's further input through 2013.

Although the costs of the biomass project at an estimated total of US$ 1.219 million (or US$ 1,219 per kW) are significantly less than for the solar PV and hydro (which is of the same scale) per kW capacity, and may allow financial viability in running a mini-grid to customers with the correct tariff, there are fuel costs, more maintenance tasks and a certain technical risk, which is not apparent to solar PV or hydropower.

The efficiency of the MP projects is rated as satisfactory. Minor delays in implementation has been due to Government delays, and the projects have delivered with relatively low budgets, using the tested and tried methodology developed in partnership with UNEP and other partners.

[50] Risk and Replication Management Fund

Quality of inputs

In general, the quality of equipment and training was assessed as good, though there were some equipment shortages noticeable. In terms of the technicians available locally to operate and supervise/maintain the SHP (Output 2), the evaluation team interviewed the ZESCO plant manager, who has a team of 10 operators living in nearby Chinsali. He was well trained, engaged in the project and aware of some basic equipment lacking in order to carry out operation & maintenance tasks efficiently, such as stop-logs able to be installed in the draft tubes, a flow meter for each intake to gauge performance of the 500 kW turbines and safety railings at the turbine outfalls to protect staff and visitors from falling into turbulent water (see Figure 4).

Figure 4: Tailrace area not fenced off

Under the technical capacity building component, UNIDO's input has facilitated training, which was conducted using the COMFAR (Computer Model for Feasibility Analysis and Reporting) model, a UNIDO computation tool product for financial and economic analysis of investments.

The quality of training was rated as high by ZEASCO, including in working with Chinese specialists, although language barriers were sometimes a challenge.

With respect to tariffs, although it is an aim of the government to make the various energy tariffs clear for consumers and also generators to ensure financial

viability of projects, it was discussed both at the DBZ and at the consumer level (at the SHP plant) that this is an area that still needs to be sorted out. At the national level this will require work by the Energy Regulation Board and at the local level, ZESCO (and CEC) will have to set tariffs that are affordable yet allow their borrowing under the Risk and Replication Management Fund (RRMF) to be paid back to prove that the projects are financially viable.

The quality of training and equipment inputs for the MP projects was reported as high by the national counterparts.

4.1.3 Effectiveness

The project has two Outcomes stated in the LogFrame. The first of these is to facilitate local employment opportunities through augmenting off-grid rural electrification by setting up a mini hydropower plant (1M), which would be expected to catalyze productive uses in the vicinity of the new plant, promoting agri-businesses, tourism and other activities.

The second Outcome, and described as a 'secondary outcome' is enhanced knowledge of decision-makers, experts and technicians about mini-hydropower technologies and programmes, which was expected to lead to scaling up of SHP programmes in other parts of Zambia.

As the power plant was only commissioned during the evaluation mission period, it was clearly too early to assess the project Outcomes, particularly as regards to productive use and jobs created.

In assessing UNIDO's delivery of the project outputs, a distinction must be between the GEF component (five outputs) and the internal UNIDO Project Document (PD) (three outputs), as shown in the Table below (see Annex H for full LogFrame). Because the GEF component has been reported on by the Project Manager as at July 2012, this evaluation will concentrate on the UNIDO PD only.

Table 5: UNIDO project (SF/ZAM/10/001) outputs

GEF component	UNIDO PD component	Status
Output 1: An enabling institutional, policy and regulatory environment for the promotion of renewable energy based mini-grids in Zambia	**Output 1:** A 1 MW SHP power plant is operational at Shiwa Ngandu and distribution lines in place to local villages and the local population is able to access the energy	Plant operational but not fully accessible due to transmission line works remaining Expected to be Completed by mid 2013
Output 2: National and local capacities to facilitate commercial deployment of renewable energy technologies	**Output 2:** A sufficient number of local technicians are trained to operate the power plan and able to undertake basic maintenance and supervision for continued operation	Training conducted but not tested in operations as yet
Output 3: Effective and innovative financing plan and procedures for promoting renewable energy based mini-grid projects	**Output 3:** Local community (decision makers and private sector) is informed and trained about the new opportunities of electrification and enables local counterparts to make use of those opportunities	Training conducted but not tested in operations as yet
Output 4: Successful implementation of pilot RE mini-grids projects-business and small hydro technologies for rural electrification		
Output 5: Select project team and experts		

The outputs of the three mini-grid projects, as reported in the GEF format have almost been completed with the exception of the 1 MW biomass gasifier plant on CEC's grid network (it is assumed that as reported in December 2012 that the 60 kW solar PV system is currently being finalised). The deadline for completion of the biomass gasifier has already been extended to December 2013 and DBZ are ready to facilitate the flow of funds. The technical groundwork has been done with CEC and likely supplier from India identified.

For the SHP pilot at Shiwa Ngandu , because the project was extended by 1 year to run until December 2012, the major Output 1 of a built scheme with distribution lines to selected villages, commissioned and running for 1 month was met, as witnessed during the Presidential inauguration on 5 December 2012. However, it was noted that after 2 weeks of operation, the plant was only operating at 41 kW, or about 5% of its capacity (see Figure 5 below) due to the uncompleted local

connections to schools and a hospital. A technical evaluation would be required after 3 - 4 months to see if the demand is increasing to the projections.

Figure 5: Control panel showing output during inauguration (40.5 kW)

A useful Baseline Report on the demand analysis has been compiled in September 2011[51] mapping all of the likely beneficiaries. However, their analysis showed that in the short to mid-term, the numbers of household connections would remain quite small due to the long distances to the transformers along the grid line and lack of safety standards in many local houses for fitting electrical services. For schools, health centre and the hospital, the situation was expected to be better and there was also good interest from small enterprises to connect to the grid where possible, ranging from retail to poultry raising business. The main beneficiaries were found to be the Kapisha Tourist Lodge and Shiwa Ngandu Farm and Estate with knock-on effects for the local community (employment and purchase of goods). The study did note that there may be a higher number of beneficiaries in the future due to electrification-driven migration into the area but this is very difficult to predict.

The evaluation's estimates of near-term local demand has shown a maximum power need from those near to the grid line of 294 kW (see Annex F), which with the line losses of a (conservative) 20 % would demand 352 kW from the hydro plant. Even if this demand was to double in the longer-term (704 kW), it is still comfortably within the maximum capacity of the hydro station, although a better

[51] Baseline Report - Shiwang'andu area mini-hydro project component, Sven Neesen, Jorg Peters, Guher Bensch (Sept 2011)

understanding of seasonal river flow variations would be required to see if this demand can be met all year round.

Figure 6: Entrance to Shiwa Ngandu Farm and Estate

For the SHP project, although the development of a plan of action for catalysing productive uses was a key Output (no. 3) and funded by UNIDO to the tune of US$ 50,000, the only output seen on this is the baseline report conducted in September 2011. This looked at all the likely beneficiaries along the distribution line and identified all the productive activities that could then take place (e.g. retail units, poultry raising, tourism, farming activities, small-scale industry etc.) but the plan of action was missing. This is still important for a few reasons; i) the mini-grid was seen to pass over some housing clusters due to the extra number of transformers required and therefore the full productive capacity of the area may not be enhanced; ii) in order to make an impact on the stated aim of reducing local deforestation due to fuel wood use for cooking, a plan of roll-out of electric stoves needs to be made that us carefully balanced with other demands to the capacity of the SHP plant.

4.1.4 Sustainability

For the Shiwa Ngandu project operation, despite the evaluation only seeing the early stage there was already benefit accruing to some households and enterprises along the distribution line. One issue only was noted in that because of the scattered nature of settlements many of the potential beneficiaries' houses were passed by the distribution line and have yet to be given a transformer to connect to it. For the plant itself, it had been constructed appropriately beside the natural waterfalls and although the flow duration curve and head survey is not yet available for analysis, because there is good precedent, it is assumed that the design and engineering have been competently done by UNIDO and IC-SHP. The power capacity of 1 MW is calculated as more than sufficient for the likely future local demands.

ZESCO have put in place a 10-person team to operate and maintain the plant, against payments it will (presumably) collect from the customers of electricity. The set-up would therefore appear to be able to operate sustainably, although the situation should be re-assessed after 6 months to 1 year of operation. Continued support from UNIDO will still be required to see the project completed on time. A crucial part of the plan will be understanding the biomass supply chain and whether this is sourced effectively (to allow financial viability) and that such technology can work in harmony with the local natural resource base.

REA has already started the development of a SHP at Chilinga and the MEWD is looking at the feasibility of a 300 KW gasifier in Lukulu. ZESCO is interested in the construction of four additional SHP plants in rural areas of and pre-feasibility studies are planned to begin soon. For the pilot demonstration 25 kW biomass gasification power plant in Ndola, training of ZESCO staff on maintenance and operations of the system was based on the technology provider (Indian Institute of Sciences). The plant has been used by ZESCO to train its engineers and to sensitize stakeholders on the potential of biomass gasifier technology to meet the energy needs of rural communities in far flung areas. Meanwhile, the DBZ said that they would be willing to transact loans for these type of projects as long as the ERB were brought in to discuss tariffs for the various technologies, and during any subsequent project, DBZ would have to levy a fee for its own costs.

The Development Bank of Zambia had already operated the Risk Replication Management Fund for the renewable energy mini-grid projects which was highly successful. To ensure sustainability, DBZ has been considering converting the RRMF into a revolving fund called the Renewable Energy Fund and it is in the process of setting this up.

Therefore, it would appear that the design of the main UNIDO mini-grid project (SF/ZAM/10/001) is good with respect to building in sustainability aspects. Firstly, the project was not just designed as technical assistance but with demonstration of business models as well, with the aim of setting up three reliable mini-grids that are commercially viable. Although the technical assistance would help enable renewable energy through strengthened policy instruments, the capacity building aims to support the wider replication of renewable mini-grids

in Zambia, thereby boosting local sustainability for increased energisation of rural areas.

With regard to the MP project, the national agency, Zambia Environmental Management Agency reported a need for further support in enforcement of compliance due to lower than optimal resource availability.

4.1.5 Impact

As the hydropower plant had only just been commissioned at the time of the evaluation mission, and outputs of the other RE projects remained outstanding, the expected socio-economic impact of these interventions could not be assessed during the evaluation mission. Nevertheless, interviews with local Chiefs indicated that they are well aware of the many benefits that may result, including the use of electric stoves that could have a beneficial impact on the extraction of fuel wood from local forests for cooking.

4.2 Trade Capacity Building

4.2.1 Project design

The project ("Joint UNIDO-WTO trade capacity building programme framework for Zambia";TE/ZAM/09/001) document's LogFrame was redesigned during the inception phase to expand its outcomes to seven (from the original four) and with outputs numbering 22 in total (see Annex H for full LogFrame). Under the new LogFrame the establishment of a project implementation and monitoring mechanism is described as a project Outcome, which is unusual in that the establishment of project unit is normally not described as a project outcome. Furthermore, this 'Outcome' in the LogFrame includes no mention of the capacity needs of the host Ministry in managing SMTQ projects.

Similarly, having as many as seven project Outcomes and 22 Outputs runs against the grain of 'results orientation' in small or medium sized projects. A number of the stated Outputs (e.g. Output 2.2: "*Review the existing Standards Act and make recommendations for…*" and Output 5.4: *"Management systems implementation assistance")* represent activities rather than Outputs.

4.2.2 Relevance & ownership

The relevance of the project to Zambia's export and consumer protection needs as well as SME development is assessed as high. Many Zambian businesses and production units were relocated to the countries of the region, particularly in South Africa and Zimbabwe following the privatisation period, and products based on Zambians raw materials are re-exported to Zambia at a high rate. A major obstacle to Zambia's export potential remains with quality and standards

compliance issues both at the regional and wider levels, and sectors such as honey and cotton have strong regional export potential.

Locating the project unit within the MCTI has had an important impact on the ownership of the sector and SMTQ issues by the Ministry.

Although formally under the Ministry's management, little substantive Government supervision was given to Zambia's standards and metrology institutes prior to the project. Today, the Ministry takes full ownership over policy and regulatory matters in the sector, and has a close relationship with its related agencies, according to the Ministry.

A clear sign of national ownership and commitment to the sector is provided by the fact that the MCTI began to allocate specific Ministry funding to the sector as of 2011 with a total of $200,000.

However, MCTI ownership of the process of project implementation has been weak. The Ministry would like to have a more involved role in management in a future phase of the project, including in training and procurement matters. Although this is predominantly a project design issue (at the project management design level), it has been also partly caused by the lack of a specialist Ministerial focal point for the project would require a person with an engineering background rather than the current practice of seconding an economist.

The Steering Committee mechanism has excluded matters related to project operations, and the project design reduces MCTI's management role to the extent that the project could run without MCTI involvement. This finding was highlighted by the counterparts, and in itself serves to demonstrate the extent to which Government ownership of the sector has grown over the period of the project, but UNIDO's proactive support for this is lacking.

4.2.3 Efficiency

Overall, the quality of the inputs has been high, and included a fulltime CTA as well as national and international expertise in standardisation, metrology, microbiology, chemistry, food safety as well as various International Standards.

The managers of national SMTQ institutes reported several high quality training sessions for their staff held in India (microbiology testing lab; high level laboratories management), South Korea and China under the project. Project training has been conducted on various ISO standards (26000, 14000, 22000, and 17025). Training has also been conducted for food producers (including honey), university graduates and two major retail groups on the Global Food Safety Initiatives Global Markets Protocol[52].

[52] See" http://www.mygfsi.com/gfsifiles/GFSI_Global_Markets_Protocol.pdf

The project unit enjoys a good reputation within the ministry both in terms of its expertise as well as the outputs produced.

The project start-up was delayed by around 6 months due to issues with setting up an efficient project unit and its teething problems in establishing an efficient working relationship with the UNDP office, particularly in terms of procurement. Since year 2010, project implementation has been relatively smooth and timely, though procurement delays have been experienced in equipment for the laboratories and metrology, partly caused by confusion over equipment specifications, and partly in relation to establishing a smooth work flow system with UNDP procurement.

4.2.4 Effectiveness

The project has partially delivered on most of its planned Outcomes[53]. A new legislative and policy framework has been developed and adopted. A national SMTQ policy was approved and launched by March 2011. Subsequently four new or updated Acts were drafted by the project, involving the Standards Act, a new Compulsory Standards Act, a combined Metrology Act (Industrial, Scientific & Legal), and a new Technical Regulations Framework Act. In addition, awareness campaigns were conducted in seven provinces.

Related regulations have been developed or are underway. Moreover, a manufacturing sector survey was conducted in 2011 in collaboration with the CSO, and the resultant report is expected to be published early in 2013.

Table 6: Status of project Outcomes

Outcome (per revised LogFrame)	LogFrame indicator	Status & comments
1. Project implementation and monitoring system established and well-functioning to ensure quality of deliverables.	Positive final evaluation.	Achieved. However, this does not constitute a project 'Outcome' in the strict sense of the term.
2. Government of the Republic of Zambia develops and approves a National Quality Policy and amends as necessary the legislative framework surrounding MSTQ. This includes a strategy and tools to encourage the quality culture in Zambia.	National quality policy is approved	Partially achieved. National SMTQ policy adopted in March 2011. Work on related regulations as well as awareness raising ongoing.
3. Standards development,	Number of national	Ongoing.

[53] See section 3d above for a description of the project Outcomes

Outcome (per revised LogFrame)	LogFrame indicator	Status & comments
adoption and information provision capacities of ZABS updated/streamlined.	standards adopted, number of standards information requests registered.	Standards Act drafted. Advisory support given on ZABS restructuring.
4. National institutions for scientific and legal metrology upgraded in line with the recommendations of NQI policy.	National measurement capacity of Zambia recognized, Legal Metrology conforms to SADCMEL recommendations.	Ongoing. Equipment purchased though with delays. Training provided for metrology staff in Korea (KRISS).
5. National testing laboratories upgraded in line with the recommendations of NQI policy, laboratory baseline assessment -with aim towards achieving accreditation.	Reduced unit costs of certifying/testing products for export reduced time to issue test reports from 8 weeks to 3-5 days maximum.	Ongoing. Equipment installed after long delay. Training pending Advisory support given to a new Zambia Lab Association
6. The Zambian Quality Chain with regard to testing and export certification of products in selected sectors strengthened.	None.	Ongoing. Work started with 2 major retailers in 2012 – concentrated on training quality assurance staff.
7. Trade policy and negotiations capabilities of the Government of Zambia is strengthened.	Zambian negotiators actively participating in meetings, holding important chair positions in committees.	Pending.

Another Outcome of project addressed deficiencies in the SMTQ conformity assessment infrastructure. The support included streamlining procedures and operations of the Standards Bureau, and sensitization of industry sectors and clusters. Furthermore, Zambia Bureau of Standards (ZABS) information services have been updated including equipment for a Mobile Standards Unit.

Outputs related to upgrading the Metrology Institute and the Weights and Measures Agency as well as the accreditation of the national testing laboratories were ongoing during the evaluation mission. Equipment had been purchased for the laboratories, and cooperation with the Honey Council of Zambia had been initiated.

Work on alleviating barriers to the export of honey, paprika and coffee was initiated in 2012 through hygiene standards training support to small-scale producers/companies and training of graduates of local universities to work as food safety inspectors. At the time of the evaluation mission, a total of four food safety specialists had been trained by the project. In tandem, the capacity of local testing laboratories has been enhanced, for example in testing for Aflatoxins (training conducted first quarter 2012).

4.2.5 Sustainability

Despite strong performance on several fronts, UNIDO's continued involvement in the sector is strongly needed (in fact, 'demanded') by the MCTI, as there would be a gaping hole in the Ministry's SMTQ capacity should the project be discontinued. This is in part a result of the project's direct execution style as compared to a capacity enhancing one. As a result, the MCTI still lacks the capacity to manage SMTQ projects at this stage.

Further standards, regulations and compliance work remains outstanding in priority sectors such as cotton, sugar, timber, cables, construction etc.

A further sustainability concern is the lack of actual accreditation for various laboratories to-date.

4.3 SME support (SPX)

4.3.1 Relevance

The regional project is highly relevant as one of the key priorities in Zambia is to help establish linkages between foreign and domestic firms. Given that this remit is included in the ZDA's functions, the choice of the MSME Department as the implementing partner was also 'natural' and relevant.

The relevance of the project, however, was compromised by a lack of coverage of companies in the Copperbelt region of Zambia. This was caused in the main by inadequate funding for transportation.

4.3.2 Efficiency

The project was assessed as inefficient on a number of fronts. At the time of the evaluation, the project was delayed by two years, only 60% of the regional project's funds had been utilised, and the donor had requested for a reimbursement of balances remaining in November 2012.

The responsible focal point within the ZDA's MSME department was the SPX Manager. Similar to the TCB project, there were difficulties in establishing a smooth working arrangement with the UNDP office in Lusaka.

The project unit in ZDA was composed of a Country Team Leader, a Profiling Specialist and a Benchmarking Specialist. Long delays in project implementation had an effect on access to funds, resulting in delays in salary payments to project staff in the last quarter of 2011 and early 2012, which led to their departure.

The project was organically linked to a wide array of other UNIDO regional SPX projects, designed to set up SPX Centres across Africa in close collaboration with UNIDO's Investors Survey project, which in turn is linked to UNIDO's overall African Investment Promotion Agency Network (AfrIPANet) support programme for Investment Promotion Agencies (IPAs) regionally and globally. In the main, these programmes are managed from UNIDO HQ in collaboration with UNIDO's Investment and Technology Promotion Office (ITPO) network and national IPAs. At the same time, the Zambia SPX project is linked to a set of SPX projects funded by South Africa's Department of Public Enterprises (DPE) and implemented in the Southern Africa region mainly through an SPX project unit in the UNIDO Regional Office in Pretoria.

The Regional SPX project in Zambia, however, was managed from UNIDO HQ with no local national coordinator and limited collaboration with the SPX project unit in Pretoria.

This management relationship resulted in subjugation of Zambia and South Africa's priorities to those of the wider Investor Survey project and AfrIPANet in general. Hence, SPX company profiling schedules were delayed, as they were relegated to second tier priority after the conduct of the regional Investors Survey project conducted in 2010, which set implementation of the SPX in Zambia back by around two years. More specifically, it was decided to establish a Zambian Business Directory through a wider survey of companies first, before moving on to conduct specific company profiling work needed for the SPX's matchmaking and benchmarking functions.

A recent evaluation of the regional Investor Survey project found the delays related to the development of the Business Directory to be acceptable given the contextual lack of basic information on companies. However, the SPX regional project donor was not in agreement with the prioritisation of the Investor Survey over the SPX Programme in Zambia.

The issue with donor objections to the project's implementation schedule went back to 2010. Just as project implementation could be started in full in 2011 with the requisite staff, training and implementation arrangements, withdrawal of funds started, and UNIDO's ability to implement was severely hampered.

In addition, strict performance-based contractual arrangements for the enumerators in a context of inadequate investments in transportation costs and delayed salary payments led to loss of staff, and an inability to cover the

important companies in the Copperbelt province. The MSME Department of the ZDA only had one car for the whole department, and use of this was not possible for the project. Project staff resorted to using their own cars for travel, and this limited the project's scope to companies in or around Lusaka alone. The inadequacy of inputs for travel and salaries, however, point to inadequate investment by both UNIDO and the ZDA.

While in other countries such as Tanzania the project units could compensate for some of the regional SPX project's funding shortfalls, for example by accessing One UN funds, in Zambia this could not be achieved.

Another efficiency issue was related to the fact that the Benchmarking Specialist in ZDA left the country early in 2012 to go on a 12-month study in Korea, and was not replaced by the ZDA despite original agreements. By mid-year, both the Country Team Leader and the Profiling Specialist had also left, citing contractual and non-payment issues.

The quality of training and training materials was assessed positively. This included training in profiling (May 2011); buyer engagement (Dec 2011); and benchmarking (Feb 2012).

4.3.3 Effectiveness

The regional SPX project's Outcomes were:

a. An increase in trade volume between suppliers and buyers both in terms of product diversification and sales;
b. Income growth due to an increase in local and regional sourcing and procurement; and
c. The improved capability of African institutions to design and implement focused developmental interventions in supplier development.

The project provided benchmarking support to four companies, but at the time of the evaluation, there was no evidence of success or results for two of the companies interviewed by the evaluation team. Moreover, the local institution remained at a preparatory level of capacity development in this regard.

The project Outputs were:

1. Establishment of five functional SPX Centres in Southern Africa, linked to the Investment Monitoring Platform;
2. SPX capacity building for buyer mobilization and continuous supplier benchmarking; and
3. Sustainable networks between SPXs and national investment promotion stakeholders established.

In terms of Output 1, the SPX centre in the ZDA was partially operational, and there were concrete plans for national funding for further development of the Centre.

Output 2 was also partially delivered, as the project managed to compile 50 company profiles out of a target of 100. Most were carried out over the period November 2011-February 2012. Moreover, benchmarking training given to a ZDA staff member for benchmarking work is to continue in the future.

4.3.4 Sustainability

There was some indirect evidence of sustainability in the project in that the MSME Department has the mandate and is committed to continuing its benchmarking and matchmaking functions. MCTI funding has been allocated to train ZDA officials in around 7 provinces, and to help local MSMEs obtain business from potential buyers. UNIDO support for this is strongly requested by the ZDA.

4.4 Performance in crosscutting issues

4.4.1 Gender

There is little sign of gender considerations in UNIDO project designs or implementation, and this applied also to recruitment of project staff and consultants.

However, the outcome of electrification of communities have some identified benefits to women (and girls) in their homes, places of work and learning. For example, the electrification of hospitals and Rural Health Centres is expected to have positive benefits to maternal health care and if electric stoves can substitute wood stoves, it will mainly be women that benefit from this cleaner form of cooking. Whether electrification will by itself contribute to gender equality is unlikely as it is more part of developmental change that should include the aim of bringing more economic opportunities and support to women's needs.

4.4.2 Environment

Almost all UNIDO projects in Zambia will have positive environmental impact, as they are indeed designed to, be it Methyl Bromide controls, TCB or RE.

Because hydro and solar power mini-grids are demonstrating their operation using natural resources, local people will see the link to environmental sustainability. An expectation for the Shwang'andu mini-grid is that electric stoves may reduce the dependence on charcoal and fuel wood requirements for cooking. In UNIDO's speech at the SHP inauguration a declaration was made "to increase the share of renewable sources to reduce (indoor air) pollution, given

that 40 % of the world's population rely on wood, coal, charcoal or animal waste to cook their food breathing in toxic smoke that causes lung disease and kills nearly two million people a year, most of them women and children."

4.4.3 South-South Cooperation (SSC)

The TCB project has demonstrated quality MSTQ training in India and China.

The RE project has demonstrated effective SSC by involving the IC-SHP from China for the SHP sub-contract, allowing the Zambian workforce to work alongside Chinese specialists. ZESCO engineers very much appreciated this for transfer of knowledge, although language barriers were sometimes a challenge. For the biomass gasifier demonstration in Ndola, specialists from the Indian Institute of Sciences worked with CEC engineers again allowing South-South Co-operation on a business level.

4.5 Processes and management at country level

Since year 2000, UNIDO has had no Field Office or Desk in Zambia. Country level support and formal UNIDO representation are the remit of the Regional Office (RO) in Pretoria. However, there is no formal or informal mechanism for coordination between the UNIDO project offices and staff inside Zambia or with the Pretoria RO.

A characteristic of UNIDO operations in Zambia is a stark lack of a UNIDO identity at all levels. UNIDO projects in Zambia appear to operate in isolation. This is assessed to be a consequence of a lack of a coordinator within the country, and constitutes an opportunity cost to UNIDO in terms of potential synergies, partnership building and visibility.

4.5.1 UNIDO Regional Office in Pretoria

The Pretoria office has the second highest number of staff among all UNIDO Regional Offices (a total of 7, second only to the Nigeria Office) and the highest number of UNIDO professional staff (4) in any Regional Office. However, the coverage and support given by the Pretoria office to UNIDO programmes in Zambia is minimal, and this is in part due to the RO's coverage of 9 Southern African countries[54].

From the perspective of the UNIDO Regional Representative, the RO is under-resourced and poorly supported in its representative and programming functions.

The evaluation team found some evidence to support the RO's position on low travel funds. However, other countries in the sub-region are regularly visited, while no UNIDO staff member in Pretoria has responsibility for Zambia. Responsibilities within the Pretoria office are assigned according to substantive

[54] Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia, Zimbabwe

areas rather than country distribution. Moreover, within the various substantive areas of the Pretoria staff, Zambia appears to be at the bottom of the list of priorities. For example, none of the RO's 3 professional staff members or consultants visited Zambia over 2011-12. The UR's visits to the country were also rare, in part due to ill health.

Furthermore, Zambia UNCT requests for information are often not responded to by the Pretoria office. The National Programme Officer in the RO has regional UNDAF monitoring and reporting included within his job description, but he is not fully aware of such a role within the current management structure of the RO, and is not encouraged to take a lead in these tasks.

The SPX project unit located in the RO with 5 project staff members has had some involvement in the sub-regional project in Zambia in the shape of 'buyer engagement' training in 2011 as well as the organization of South African investor delegations to Zambia.

4.6 UNIDO's participation in the One UN and other country-level coordination mechanisms

UNIDO's coordination with the UN system in Zambia is assessed as poor. UNIDO does not participate in country-level coordination mechanisms. There is no UNIDO focal point appointed for the task.

UNIDO missions to Zambia are not coordinated with the Resident Coordinator's Office (RCO), despite the presence of a fulltime NRA focal point in the RCO.

Moreover, no local UNIDO regular or project staff member is engaged with the UNCT, the UN Theme/Outcome Monitoring Groups or the UNRC from within project offices in Zambia or the Regional Office in Pretoria or HQ.

The UNIDO Regional Office in Pretoria is at times perceived as 'silent'. UNRC Office's requests for UNIDO's UNDAF Outcomes or financial delivery reports are inadequately responded to. The issue relates to all UNIDO's activities in the country.

The Convenors of the UN Theme and Outcome Groups in Zambia have their own annual professional performance assessed on the basis of how well they coordinate their groups. In the absence of regular financial and programmatic reports from various agencies working in Zambia, the Convenors receive lower performance assessment ratings. This creates a structural conflict in that staff of NRAs such as UNIDO have no such immediate incentives and urgency for being present in the Groups or providing regular reports. As such, a certain level of 'frustration' has built up with UNIDO among some of the Convenors.

This omission poses an opportunity cost for UNIDO, particularly in potential alignment with and cooperation under the UN's relatively well-funded joint programmes in the areas of climate change and private sector development,

mentioned above. Moreover, and ‘in the absence of UNIDO’, UNDP is taking a lead in the area of ‘Rio+20 Sustainable Energy’.

Similarly, and apart from the case of the TCB project that is located within the counterpart ministry, UNIDO coordination with the MCTI is inadequate. The MCTI is unaware of UNIDO’s activities in the country, and the Ministry is not regularly visited by UNIDO officials.

5.

Main conclusions and recommendations

5.1 Conclusions

Despite the small size of the portfolio, UNIDO's interventions are highly relevant, and have good potential for growth in all three ongoing areas of concentration, namely energy, environment and trade capacity building in line with Zambia's needs.

The small size of the programme is in large part due to a lack of a coordinating office in the country, which contributes to lower efficiency and poor synergies among UNIDO projects, and inadequate coordination with Government, donor and UN partners. A key finding in this regard was a lack of familiarity with the UN and UNIDO's administrative procedures within project units, which caused project delays across the board.

The lack of representation at the country level is also a hindrance to a strategic and farsighted approach to enhancing UNIDO's role in supporting Zambia's industrial development. This is particularly the case for productive sector programmes, whose donors and decision-makers are located within Zambia.

The current climate in the country is ideal for development cooperation at the meso (institutions and business development plans) and macro levels (policy and strategy development and implementation support), working with associations, institutions and decision-making bodies, rather than individual companies or small producer sub-sectors.

Most importantly, the MCTI's plan for developing an Industrial Policy requires UNIDO support. This could help MCTI play a stronger lead role in the industrial sector, and would help align UNIDO's interventions more closely with national priorities in a systemic and synergised fashion.

UNIDO is in a good position to develop a well-integrated Country Programme that brings these three areas together in support of the Government's plans to establish rural industrial zones throughout the country with a public-private partnership approach.

There is ample opportunity for UNIDO to mobilise various sources of funding in Zambia. This ranges from Government funding (as has already happened under the rural energy portfolio) to sustained engagement with productive sector donors such as Ireland, Finland and DFID. In addition, new sources from the Global South such as China and South Africa – including the large foreign mining investors - can be much more thoroughly engaged and tested out in the current climate that is conducive to new approaches.

5.2 Recommendations

SME development (SPX)

- Per the ZDA's plans, the next phase of the project should concentrate on SPX capacity building at the provincial level. This should be spatially linked also with any future projects related to cluster development, private sector development, business development services or RE, and should benefit from TCB and Methyl Bromide projects' knowledge base.

- Any future project phase should ensure that project staff receive their salaries in a timely manner, and that the requisite transportation support is made available (by either the ZDA or the project).

Renewable energy

- Future RE projects should be better coordinated with the MCTI as well as the Ministry of Agriculture in order to enhance the projects' productive use potential and to leverage synergies with ongoing and future TCB and SME support programmes.

- Due to the fact that the Renewable Energy project was still under implementation at the time of the evaluation, UNIDO HQ's Renewable and Rural Energy unit should review the functioning after at least 6 months of operations (this will cover the variation in seasonal rainfall for the SHP). Because the biomass gasification unit is not expected to be completed until end of 2013, this review should be done either in two phases (SHP and solar PV first) or into 2014.

- In the selection of SHP specialists for future phases of the project, care must be taken to ensure adequate English language skills. Alternatively, some form of interpretation service should be made available.

Trade Capacity Building

- The project should continue into a second phase with UNIDO involvement in order to cater for capacity building needs. The standards and metrology institutes should be provided with further assistance towards accreditation.

- The management arrangements for any future phase should be more transparent and owned by the Ministry, including in financial and procurement decision-making. As such, it is recommended to phase out the fulltime international CTA in the next phase of the project through a detailed exit strategy.

- The Ministry focal point for the next phase of the project should be a staff of the MCTI with a relevant science or engineering background. In case such skills are not available, the Ministry should consider recruiting a qualified person or providing appropriate training for existing Ministry staff through the next phase of the project.

- The formulation of the next phase should be closely coordinated with the national Enhanced Integrated Framework Secretariat (EIF) in the MCTI, as prospects are positive both for EIF funding and for building synergies with other EIF initiatives.

UNIDO representation

- At a minimum, UNIDO should assign the role of country coordination to a project chief technical advisor (CTA) or another senior project staff member in Zambia.

- Given Zambia's industrial development priorities and UNIDO's budget constraints, UNIDO should ask for Government in-kind contributions toward a UNIDO office (e.g. use of MCTI premises) and staff (e.g. Ministry secondments) in Lusaka, and to complement this with use of UNIDO project funds. Locating the UNIDO Field Office in MCTI would be cost-effective, and it would allow for dovetailing the TCB project's exit strategy with a UNIDO Field Office set-up plan, and with the responsibility for UNIDO coordination resting with the outgoing TCB CTA.

- Given the potential size of the UNIDO programme in the country, it would be more strategic to assign a Head of UNIDO Operations located in the UN House in Lusaka. The funding for this can be augmented with project resources, which are already at levels comparable with or above some other countries that have UNIDO representation.

- The Pretoria Regional Office of UNIDO should have a specific focal point for UNDAF and UNCT monitoring and reporting for every country of the RO's coverage, including Zambia.

Country Programme formulation

- Depending on resource availability, the UNIDO Country Programme for Zambia (2013) should focus on the following range of substantive areas listed in order of priority (and with potential donors):

  - ✓ Industrial policy (UNIDO; GoZ/MCTI);
  - ✓ Renewable energy (ZESCO; GEF; China);
  - ✓ Rural industrial zones/clusters; SME development support; and enterprise upgrading (Ireland; DFID; Finland; GoZ; international mining companies);
  - ✓ Trade facilitation and infrastructure (EIF/WTO; Norway);

- ✓ Vocational training and entrepreneurship education (GoZ; Finland; Ireland; mining companies);
- ✓ Energy efficiency and cleaner production (Switzerland, Austria);
- ✓ Corporate Social Responsibility (international mining companies); and
- ✓ Ozone depleting substance and persistent organic pollutants (Multilateral Fund for MP).

- The Country Programme formulation team should not develop too many disparate initiatives, particularly at the micro level.

- The Country Programme formulation process and its subsequent implementation monitoring should be closely coordinated with MCTI, preferably through a Focal Point designated by the Ministry.

- The Country Programme should pay special attention to creating synergies and linkages among the projects, as follows:

  - **Spatial linkages**: Cluster development, SME, RE and TCB projects should focus on the same geographical areas, so that energy supplies can benefit productive sector SMEs, and that the latter can benefit from diffusion of SMTQ capacities and training in the same localities.

  - **Value chain linkages**: Similarly, the SME (clusters & SPX) and TCB projects should be designed to focus on the same value chains. A Business Development Services (BDS) and TCB focus on enhancing marketing, productivity and quality in sectors such as coffee, soya, sugar cane, cotton, tea and fruits such as pineapples and mango would be strategic for Zambia's needs.

  - **Knowledge sharing:** Expertise should be pooled across different projects. For example, existing knowledge base already developed through the Methyl Bromide project should be made available to agro-industries and SMTQ institutions. In addition, cotton expertise and sector knowledge could be shared across TCB, clusters and SPX projects.

  - **Logistics:** Coordination should be enhanced through sharing logistics (office, cars, communications equipment etc). This would also help various UNIDO staff develop an enhanced sense of a UNIDO identity and mutual support.

- In terms of fundraising, the formulation mission team should look beyond traditional sources and try to mobilise funding from the Government, the Global South, and international mining companies in Zambia.

- Gender analysis and performance targets/monitoring should be mainstreamed in UNIDO's new Country Programme and related projects.

Annex A: Terms of reference

Independent UNIDO country evaluation in the Republic of Zambia

A. Background and Context

A country evaluation of Zambia was included in the ODG/EVA Work Programme 2012/2013 approved by the Executive Board. Country evaluations look at UNIDO's entire programme in a country and the specifics of UNIDO's programme nationally and regionally insofar as they relate to the country.

UNIDO's cooperation with Government of Zambia (GoZ) dates back to 1969. Since then, there has been a portfolio of around 173 projects amounting to around $21 million. UNIDO has no formal representative office in the country, and has not developed a 'UNIDO Country Programme' or 'Integrated Programme' document. Currently, efforts are underway for preparing the first UNIDO Country Programme in Zambia with a formulation mission planned in the late 2012/early 2013 following a country needs assessment exercise conducted in June 2012 focussed on agri-business and private sector development.

The country evaluation exercise is expected to contribute to the process of Country Programme formulation, and will seek to identify lessons learned with a forward-looking approach in assessing UNIDO's main interventions in Zambia since year 2001.

Country context

Zambia is classified as a 'Land Locked Least Developed County (LLDC) with a per capita GDP of around $1,400[55] in year 2011 and a total population of approximately 13.5 million in the year 2011[56]. The 2011 Human Development Index (HDI) for Zambia[57] ranks the country 164th out of a total of 187 countries with an average life expectancy of 49 years in the same year, up from 42 a decade earlier[58].

Zambia has enjoyed consistent GDP growth rates of over 6% over the past decade, supported by strong industrial and agricultural growth and investments in power and mining. However, Zambia's economy remains vulnerable to external

[55] https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html. It should be noted that on all GDP and GNI counts (PPP or otherwise), Zambia would be classified as a 'lower middle income' rather than 'least developed' country

[56] EIU Zambia Country Report, February 2012

[57] http://hdrstats.undp.org/en/countries/profiles/ZMB.html

[58] http://data.worldbank.org/country/zambia

factors, particularly including commodity price fluctuations (particularly for copper) and climate change.

Zambia has a relatively low population density, but has a high population growth rate of 3%, up from 2% a decade ago. While significant improvements have been made in reducing under-five mortality rates from 25% in 2000 to 18% in 2010, HIV prevalence rate is more than twice the average for the Sub-Saharan region, though it has stabilised at 14%[59]. Furthermore, the percentage of people living below the poverty line has been decreased significantly, from 46.3% in 2000 to 28.5% in 2009. Concurrently, and as a share of GDP, exports have risen by 10% while imports have fallen by 5% over the same period.

Zambia's official development assistance has comprised between 30% to 140% of central government expenditure over the past decade, as Figure 1 below shows.

National development priorities and goals

Zambia will have to maintain or increase recent rates of economic growth in order to achieve the government's long-term goals stated in its Zambia Vision 2030 document, which seeks to transform the country into a middle-income country by the year 2030.

The document is based on the following pillars:

- Economic Growth and Wealth Creation;
- Social Investment and Human Development;
- Creating and enabling Environment for sustainable social economic development.

Under the Vision 2030 umbrella, the government's medium-term plan is stated in the country's Fifth (2006-2010) and Sixth (2011-2015) National Development Plans (SDNP). While the Fifth Plan focused on improving economic structures, the Sixth Plan strongly builds on the points mentioned below, based on the theme 'Sustained economic growth and poverty reduction'.

Highlights of the SNDP (from UNIDO's perspective) include the following[60]:

Economic and Social Development

For Zambia's development, a strong economic development on the macro level is seen as key to sustainable growth as the high levels of lending rates and the limited availability of long-term finance remained the major constraints to growth, particularly for small to medium-scale enterprises.

[59] Ibid

[60] The section borrows heavily and directly from the SNDP

Infrastructure

The SNDP states that a viable energy sector is key to achieving sustainable economic development in the country, as it is a critical input into all sectors of the economy. The Vision of the Energy sector is “universal access to clean, reliable and affordable energy at the lowest total economic, financial, social and environmental cost consistent with national development goals by 2030”.

Growth Sectors

The SNDP focuses on the following growth sectors, while mentioning the importance of balance of growth.

- Agriculture, livestock and fisheries
- Mining
- Tourism
- Manufacturing
- Commerce and Trade

Regional Development

Regional development is being seen as balanced development, organized by a decentralized process that ensures a country's economic gains proportionally. The focus during the SNDP period will be on improving productivity in the regions based on comparative advantage and socio-economic needs.

In September 2011, the Patriotic Front (PF) party won power under the leadership of Mr. Sata, who is the newly elected President, with the next elections due in 2016. The PF’s victory ended 2 decades of rule by the Multiparty Democracy (MMD), in part as a result of a “perception that recent economic growth has largely benefited the political elite and foreign investors.[61]

UNIDO in Zambia

UNIDO has no formal representative office based inside Zambia. A UNIDO Regional Representative (UR) based in the UNIDO Regional Office in Pretoria is formally responsible.

UNIDO’S project portfolio from 2001-2012

UNIDO strongly focused and continues to focus on renewable energy projects in Zambia, with eight projects devoted to it. In 2001, UNIDO/GEF joined forces to initiate a project on electricity generation for isolated mini grids. The follow up

[61] The Economist Intelligence Unit; Zambia Country Report; October 2012; p 3
http://portal.eiu.com/FileHandler.ashx?issue_id=1279657312&mode=pdf

project started in 2006 and ended in 2011. In 2010 a joint UNIDO/GEF/UNEP project started, building on the pilot projects. The goal is to install three mini-grids in rural areas as well as the installation of one MW biomass gasifier plant for power generation.

From 2003-2006 UNIDO implemented two pilot projects on Renewable entrepreneurship developed to support youth employment in Zambia.

Additionally UNIDO implemented two pilot projects with the goal to install a telecentre in off-grid rural communities.

Furthermore, UNIDO and WTO joined forces in 2009 and developed a trade capacity-building framework, which seeks to help Zambia improve the skills, needed to benefit from and work within liberalized markets. UNIDO further implemented and continues to implement a project under the Montreal Protocol focusing on technical assistance.

The project portfolio can be seen in the table below.

UNIDO's project portfolio for the period 2001-2012 in Zambia

Theme (T)	Proj. Title	Project No. (donor)	From : To	Org units	Allotment
Renewable Energy	Renewable energy based electricity generation for isolated mini-grids in Zambia- additional funding for setting up a mini-hydropower plant as a part of the SHP mini-grid at Shiwa Ngandu	SF/ZAM/10/001 (GoZ - ZESCO)	06/2010: 12/2011	Renewable and Rural Energy Unit	$3,324,074
	Renewable Energy powered rural demonstration telecentre	XP/ZAM/07/001 (and GP/RAF/04/001)	11/2007: 11/2009	Renewable and Rural Energy Unit	$783,501
	Renewable energy based electricity generation for isolated mini-grids in Zambia	GP/ZAM/06/001 (GEF)	08/2006: 31/2011	Renewable and Rural Energy Unit	$2,936,600
	Renewable energy entrepreneurship development for augmented youth employment in Zambia	YA/ZAM/03/471 (and XA/ZAM/03/654)	09/2003: 12/2006	Industrial Energy Efficiency Branch	$300,000
	Renewable energy- based electricity generation for isolated mini-grids in Zambia	GF/ZAM/01/001 (GEF)	11/2001: 06/2006	Industrial Energy Efficiency Branch	$324,868
Environment (Montreal Protocol)	Technical assistance for the total phase-out of methyl bromide in tobacco, cut flowers, horticulture and post harvest uses[62]	MP/ZAM/11/001 / MP/ZAM/08/002 (also: MP/ZAM/08/001/ MP/ZAM/05/001) (Montreal Protocol)	12/2008: current	Agri-Business Development Unit	$459,548

[62] Estimated budget and expenditure figures for ongoing HCFC project as it does not have clear cut annual budget targets

Theme (T)	Proj. Title	Project No. (donor)	From : To	Org units	Allotment
Trade Capacity Building	Joint UNIDO-WTO trade capacity building programme framework for Zambia	TE/ZAM/09/001 (Norway)	04/2009: current	Compliance Infrastructure Unit	$3,179,085
SME support (Regional)	Establishment of Subcontracting and Partnership Exchange Centres (SPXs)	TE/RAF/08/024	01/2009: 11/2012	Investment Promotion Unit	$100,000
Cotton sector study (regional)[63]	Benchmarking 11 sub-Saharan cotton producing countries as a possible location for the setting-up of a cotton yarn spinning	XP/RAF/08/005	06/2008: 06/2009	Agri-Business Development Unit	$22,000
Total					$11,259,676

Source Infobase

Furthermore, UNIDO and the GoZ have come to an agreement that a UNIDO Country Programme should be developed in Zambia, and a UNIDO programming mission is due in late 2012 or early 2013, following this evaluation exercise.

i. Rationale and purpose of evaluation

This country evaluation is being undertaken as foreseen by the Work Programme of the Evaluation Group for 2012/2013, following a decision of the Executive Board of UNIDO. This country evaluation will be a forward-looking exercise and seek to identify best practices, and lessons to enhance the relevance, efficiency, effectiveness, impact and sustainability of future UNIDO interventions in Zambia.

The key users of this evaluation will be UNIDO professionals and management at Headquarters, UNIDO Regional Office in South Africa, the Government of Zambia and various other stakeholders in Zambia. The evaluation should constitute a starting point and key input for the design of a UNIDO Zambia country programme.

ii. Scope and focus of the evaluation

The country evaluation will use DAC evaluation criteria (relevance, efficiency, effectiveness, impact and sustainability) and will go beyond a mere documentation of results by identifying factors that have facilitated or impeded the achievement of objectives.

The joint UNIDO/WTO TCB project in Zambia is due for an in-depth independent evaluation in March 2013. Its coverage in this country evaluation exercise therefore will be lighter than a full fledged project evaluation, concentrating on relevance and efficiency aspects.

[63] The budget figure is a rough estimate of the portion utilized for Zambia out of a total budget of $170,247

Similarly, UNIDO's joint cooperation with UNEP in the renewable energy sector is due for an in-depth joint evaluation in June 2013, and the coverage of this sector will therefore concentrate on the relevance and efficiency of this set of projects.

The evaluation will focus on the following aspects:

- The relevance and alignment of interventions to national needs and priorities (SNDP, Vision 2030 and other national strategies) and to international development goals (MDGs, Paris Declaration etc.) as well as the UNDAF and UNIDO planning frameworks.
- Recommendations on potential areas and modalities of cooperation under a future Country Programme.
- The efficiency of management and coordination processes including the performance of the UNIDO field office and relations with UNDP and the UNRC system.
- Achievements in relation to crosscutting issues:
    - Contribution to Gender equality.
    - Contribution to environmental sustainability.
    - Fostering of South-South cooperation.
- UNIDO's strategic positioning in the country.

The time period to be covered by the evaluation starts from the beginning of the focus on renewable energy projects in 2001.

iii. Evaluation Issues

It is important to note that the assessment of UNIDO's project portfolio in Zambia is not a mere compilation of individual project evaluations but will consider synergies and complementarities between projects as well as the UNDAF.

Relevance

The degree to which the design and objectives of UNIDO's project focus is consistent with the needs of the country and with development plans and priorities as well as with UNIDO´s strategic priorities.

The extent to which UNIDO's project portfolio in Zambia was relevant to:

- The development priorities and challenges facing the country;
- National and international development priorities (Vision 2030, SNDP, MDGs, etc);
- UNIDO's strategic priorities (Programme and Budget, Medium Terms Strategic Framework, etc.);
- The target group and UNIDO's counterparts.

Efficiency

Efficiency measures the outputs -- qualitatively and quantitatively -- in relation to the inputs.

The extent to which:

- The quality of UNIDO services (expertise, training, equipment, methodologies, etc) was as planned and led to the production of outputs; and
- The resources and inputs were converted to results in a timely and cost-effective manner;
- Coordination amongst and within components of the UNIDO project portfolio in Zambia lead to synergy effects (benefits and drawbacks) and/or to the production of outputs;
- The same results could have been achieved in another, more cost-effective manner;
- Objectives were achieved on time.

Effectiveness

The extent to which the projects achieved their objectives and major factors influencing the achievement or non-achievement of the objectives.

The extent to which:

- Activities planned in the project documents were undertaken;
- objectives established in the project documents were achieved; and
- results hinged on specific – positive or negative – factors.

Sustainability

Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn. Projects need to be environmentally as well as financially sustainable.

The extent to which:

- There is continued commitment and ownership by the government and other key stakeholders;
- Country ownership can be demonstrated; and
- changes or benefits can be maintained in the long term.

Impact

The positive and negative changes produced by a development intervention, directly or indirectly, intended or unintended.

The extent to which the projects contributed;

- To developmental results (economic, environmental, social); and
- To the achievement of the MDGs.

Partnership and coordination

UNIDO's contribution to coordinating external assistance and to building government and country ownership.

The extent to which;

- Effective coordination arrangements with other development partners were established;
- UNIDO participated in the UNDAF; and
- The UNIDO projects adhered to the principles of the Paris Declaration on Aid Effectiveness (i.e., government ownership, alignment with government strategies, results orientation, use of country systems, tracking results, and mutual accountability).

Country level management support

The extent to which:

- Efficient cooperation arrangements between the projects and with the Regional Office were established;
- UNIDO's Regional Office supported coordination, implementation and monitoring of the programme.

Partnership and coordination

UNIDO's contribution to coordinating external assistance and to building government and country ownership.

The extent to which:

- Effective coordination arrangements with other development partners were established;
- UNIDO participated in the UNDAF and other UN coordination mechanisms.

iv. Evaluation approach and methodology

In addition to the DAC criteria and approach outlined above (see section 'III' above), the evaluation team will use different data collection methods ranging from desk review (project documents, progress reports, mission reports, Agresso search, evaluation reports, etc) to individual interviews, group discussions, project visits, surveys and observation.

Attention will be paid to ensuring an unbiased and objective approach and to the validation of data. The evaluation team should ensure that all the data is valid, by a triangulation of sources, methods, data, and theories.

While maintaining independence, the evaluation will be carried out based on a participatory approach, which seeks the views and assessments of all stakeholders. These include government counterparts, private sector representatives, other UN organizations, multilateral organizations, bilateral donors and beneficiaries.

The evaluation will cover the Montreal Protocol project in more depth, as it is near completion.

v. Timing

The country evaluation is scheduled to take place between October 2012 and March 2013. A two-week field mission for the evaluation is envisaged for November 2012.

Activity	Estimated date
Collection of documentation and relevant data by evaluation Team Leader at HQ	October-November 2012
Collection of documentation and relevant data by National Consultant in the field	November 2012
Desk Review by members of evaluation team	November 2012
Mission to Zambia	November-December 2012
Presentation of preliminary findings to the government	December 2012
Presentation of preliminary findings at HQ	February 2012
Drafting of report	January-March 2013
Collection of comments	April 2013
Incorporation of comments	May 2013
Issuance of final report	June 2013

vi. Evaluation team

The evaluation team will include:

1) One national evaluation consultant to perform data collection and collation, support local arrangements for meetings and travel, advise on various aspects of the national context etc.
2) On international evaluation consultant specialised in renewable energy, acting as the team leader.
3) One UNIDO EVA evaluator who will act as a team member for the exercise with focus on Montreal Protocol and TCB portfolios.

All members of the evaluation team must not have been involved in the design and/or implementation, supervision and coordination of any intervention to be assessed by the evaluation and/or have benefited from the projects under evaluation.

The member from UNIDO's Evaluation Group will manage the evaluation. Additionally, the UNIDO Regional Office and the respective project teams in Zambia will support the evaluation team and help to coordinate the programme of the evaluation mission.

vii. Evaluation process and reporting

The responsibilities and involvement of stakeholders for the various evaluation stages are outlined below:

Process steps	UNIDO ODG/EVA Evaluation Group	UNIDO PTC/ Field office	UNIDO SQA	Government of Zambia	Evaluation team[64]
Terms of Reference	□				
Comments on TOR		□	□	□	
Selection of consultants	□			□	
Review of background documentation					□
Interviews at UNIDO HQ		□	□		□
Inception Report					□
Comments on inception report	□				
Evaluation mission			□	□	□
Presentation of preliminary findings in the field					□
Presentation of preliminary findings at HQ					□
Drafting of evaluation report					□
Comments on draft report	□	□	□	□	
Final evaluation report					□
Evaluation brief					□

[64] The national members of the evaluation team will not participate in the meetings and interviews at UNIDO HQ, they will be briefed by the international members upon arrival in Zambia

The evaluation team will present its preliminary findings to the Government and UNIDO staff in Zambia, and, later on, to staff at UNIDO Headquarters. A draft evaluation report will be circulated for comments. The reporting language will be English.

Review of the Draft Report: The draft report will be shared with UNIDO and the Government for initial review and consultation. They may provide feedback on any error or fact and may highlight the significance of such errors in conclusions. The evaluators will take comments into consideration when preparing the final version of the evaluation report.

The Final Report will be submitted 6-8 weeks after the field mission, at the latest, to the Government of Zambia and to UNIDO.

viii. Deliverables

- Presentation of preliminary findings to counterparts and HQ staff
- Draft Report
- Final Report

ix. Quality assurance

All UNIDO evaluations are subject to quality assessments by the UNIDO Evaluation Group. Quality control is exercised in different ways throughout the evaluation process (briefing of consultants on EVA methodology and process, review of inception report and evaluation report). The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality.

The applied evaluation quality assessment criteria are used as a tool to provide structured feedback.

Annex A of Terms of Reference

Job description for International Renewable Energy Consultant

Post title	International Evaluation Consultant (Team Leader)
Estimated duration	30 days over a period of 8 weeks
Starting date required	26 November 2012
Duty station	Vienna, Lusaka with local travel

Introduction

This exercise is a part of an independent country evaluation of UNIDO's portfolio in Zambia. Working as part of a team of international and national consultants under the supervision of the UNIDO evaluation manager, the expert will conduct an evaluation of some of UNIDO's projects in Zambia – as described below - and will contribute to a final country evaluation report.

The 'Renewable Energy' evaluation consultant will:

On the basis of the Terms of Reference s/he will carry out the following duties:

- Act as a 'team leader' and focal point for evaluation report drafting, guiding and collating inputs from the national consultant;
- Perform a coordination and organizational function, supporting the role of the ODG/EVA Evaluation Manager, and helping to ensure smooth implementation of the field mission;
- Prepare presentations of findings;
- Supervise the national consultant.

In particular the Consultant will:

Duties	Duration	Location	Results
Preparatory phase ▪ Study programme and project documentation (including project and progress) ▪ Study relevant country-level background information (national policies and strategies, UN strategies and general economic data etc.) ▪ Briefing with project managers, Evaluation Group and other key stakeholders at HQ ▪ Develop methodology and interview guidelines for the field mission ▪ Prepare inception report	5 days	Home based	- Key issues of evaluation identified; - Scope of evaluation clarified; - Inception report prepared, including the proposed methodology, approach, interview guidelines and evaluation programme covering Field Operations and PSD aspects of UNIDO's cooperation with Zambia.
Field mission in Zambia o Carry out interviews with UNIDO staff and consultants and national stakeholders (including direct beneficiaries) as well as donor representatives according to the evaluation programme o Draft preliminary findings, conclusions and recommendations, and present them to stakeholders as requested by the team leader o Development of the report outline/structure o Pay particular attention to crosscutting issues including: gender, environment, and South-South cooperation	13 days	Lusaka, with in-country travel in Zambia	Draft findings, conclusions and recommendations Draft report outline with assigned responsibilities
Debriefing at HQ o Present preliminary findings, conclusions and recommendations to UNIDO staff at headquarters	1 day	Vienna, UNIDO HQ	Feedback on preliminary findings
Drafting of evaluation report o Prepare the evaluation report in close consultation/cooperation with the team leader and in an agreed format (7 days); o Integrate comments from UNIDO Evaluation Group and stakeholders and edit the language and form of the final version according to UNIDO standards (1 day) o Prepare evaluation briefs on various thematic areas evaluated (2 days)	11 days	Home based	**Draft report** **Final report** **Evaluation briefs**
Total	**30 days**		

Qualifications:

The qualifications and skill areas to be specified should include:

- Evaluation skills appropriate to the subject area
- Technical competence
- Ability to address relevant crosscutting thematic issues
- Adequate understanding of local social and cultural issues
- Process management skills, including facilitation skills
- Writing and communications skills
- Good interpersonal skills
- Adequate mix of national and international expertise

Languages:

- English

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.

Job description for National Evaluation Consultant

Post title	National Evaluation Consultant
Estimated duration	20 days
Starting date required	26 November (approximately)
Duty station	Lusaka with local travel

Introduction

This exercise is a part of an independent evaluation of UNIDO's portfolio in Zambia. Working as part of a team of consultants under the supervision of the team leader, the national expert will conduct an evaluation of some of UNIDO's projects in Zambia– as described below - and will contribute to a final country evaluation report.

Duties of the national consultant:

The evaluation consultant will cover the assessments of UNIDO's contribution to Zambia with the following duties:

Duties	Duration	Location	Results
Preparatory phase ▪ Work in close collaboration with the evaluation manager in Vienna to finalise the evaluation mission plan, advise on and secure appointments and necessary local arrangements, and ensure smooth subsequent implementation on various levels ▪ Study programme and project documentation (including project and progress) ▪ Study relevant country-level background information (national policies and strategies, UN strategies and general economic data etc.) ▪ Conduct telephone briefings with relevant project managers and the Evaluation Group at HQ in collaboration with the team leader ▪ Develop methodology and interview guidelines for the evaluation exercise ▪ Prepare inception report	2 days	Home based	- Key issues of evaluation identified; - Inception report prepared

Duties	Duration	Location	Results
In-country evaluation phase o Take a lead role in specific project evaluations and surveys as well as data analysis as requested by the team leader o Carry out interviews with UNIDO project staff and consultants and national stakeholders (including direct beneficiaries) as well as donor representatives according to the evaluation programme o Accompany various members of the evaluation team as requested by the team leader, and provide advice (technical, cultural and logistical) and interpretation support for international members of the team o Work in close collaboration with the team leader in order to ensure smooth implementation of the evaluation exercise o Draft preliminary findings, conclusions and recommendations, as requested by the team leader o Pay particular attention to crosscutting issues including: gender, environment, and South-South cooperation	13 days	Lusaka, with in-country travel in Zambia	Draft findings, conclusions and recommendations
Drafting of evaluation report o Prepare inputs for the evaluation report in close consultation/cooperation with the team leader and in an agreed format (4 days); o Prepare evaluation briefs on various thematic areas evaluated (1 day)	5 days	Home based	**Draft report**
Total	**20 days**		

Qualifications:
The qualifications and skill areas to be specified should include:

- Evaluation skills appropriate to the subject area
- Technical competence
- Ability to address relevant crosscutting thematic issues
- Adequate understanding of local social and cultural issues
- Process management skills, including facilitation skills
- Writing and communications skills
- Good interpersonal skills

Languages:
- English, Bemba and Tonga

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.

Job description for the ODG/EVA evaluation manager (field mission)

Introduction

This exercise is a part of an independent country evaluation of UNIDO's portfolio in Zambia. Working as part of a team of international and national consultants under the supervision of the UNIDO evaluation manager, the expert will conduct an evaluation of some of UNIDO's projects in Zambia – as described below - and will contribute to a final country evaluation report.

On the basis of the Terms of Reference the evaluation manager will carry out the following duties:

- Act as a 'team member' and focal point for the Montreal protocol, TCB and Regional Office assessment parts of the evaluation
- Provide inputs in these above areas to the Team Leader for the report drafting
- Support the Team Leader prepare presentations of findings

Languages:

- English

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.

Annex B: List of persons met

Organization	Names	Topics/project
UN Resident Coordinator's Office/UNDP	Ms. Kanni Wignaraja; RC Ms. Annelie Rosedt Coordination Specialist, RCO Ms. Bupe Mulemba, NRA focal point, RCO Ms. Georgina Fekete, Deputy Country Director, UNDP Ms. Dancilla Mukarubayiza, UNDP DRR Operations Mr. Michael Kaira, UNDP Operations Analyst	Courtesy call UNIDO in Zambia UNIDO as part of UNCT DaO in Zambia Cooperation with/by RO & HQ
UNDSS	Ms. Kanni Wignaraja; Designated Official Mr. Griegson Chitusha, UN Local Security Assistant Mr. Trevor Bomena, Officer in Charge, Diplomatic Police	Accident in Kasama district
Ministry of Commerce, Trade and Industry	Mr. R. K. K. Sichinga; Minister Mr. Stephen Mwansa; Permanent Secretary Mr. Mateyo Kaluba; Chief Planner Ms. Janet Simwanza-Chilufya; National Trade Expert; EIF Secretariat Mr. Healey Mweemba; Team Leader; EIF Secretariat	Zambia's industrial development priorities; Cooperation with UNIDO; TCB project
UNIDO TCB Project office	Mr. Mukayi Musarurwa, CTA Ms. Caroline Makasa, NPC Mr. Aaron Mutale, Senior Economist & Ministry FP for TCB project	TCB project
Development Bank of Zambia	Mr. Jacob Lushinga, MD Ms. Hephzibah Beyani, Head Credit	Renewable energy Other UNIDO cooperation with DBZ (e.g. COMFAR) - past and future Zambia's development priorites
Zambia Bureau of Standards	Mr. Manuel Mutale, Director Ms. Peggy Kaunda Chituta, Metrology Manager Mr. Nicodemus Malisa, Laboratories Manager	TCB project
Zambia Department of Energy (DOE)	Mr. Oscar. S. Kalumiana, Director	Renewable energy
Zambia Development Agency	Mr. Eben Sibbuku, SPX Manager & Senrio Enterprise Development Officer Ms. Helen Masiye, CTL (ex)	SPX project

Organization	Names	Topics/project
Zambia Association of Manufacturers	Ms. Roseta Mwape, CEO	SPX project Zambia's industrial development priorities Cooperation with UNIDO
Zambia Association of Manufacturers	Ms. Roseta Mwape, CEO	SPX project Zambia's industrial development priorities Cooperation with UNIDO
Zambia Copperbelt Energy Corporation	Mr. Bulaya, Senior Manager, Project Development	Renewable energy
Zambia Environment Management Authority	Mr. Mathias Banda, National focal point for Montreal Protocol	Montreal Protocol project
National Statistical Office	Mr. Nkanda Kabibwa	Industrial and other development data
UNIDO RO, Pretoria	Mr. Levy Maduse, National Programme Officer Ms. Claudia Giacovelli, Project Consultant Mr. Robert Novak, Project Manager	UNDAF reporting, RO support to Zambia, UN coordination and roles and responsibilities
	Mr. Richard Bean, CTA	SPX project
UNIDO HQ	Mr. Diego Masera, Chief, Renewable Energy Unit	Renewable energy
	Ms. Ulviner Dolun Bora, Industrial Development Officer	Trade Capacity Building
	Mr. Riccardo Savigliano, Industrial Development Officer	Montreal Protocol
	Mr. Stefan Kratzsch, Industrial Development Officer	SPX project
	Mr. Siaki Bashir Conde, Programme Officer	Country Programme
	Mr. Adnan Seric, Project Manager	
	Ms. Dong Guo, Statistician	
	Mr. Frank Hartwich, Industrial Development Officer	
	Ms. Nadia Mrabit, Consultant	

Annex C: Bibliography

CIA Fact Book Zambia:
https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html

Economist Intelligence Unit, Zambia Country Report. (February 2012).

Economist Intelligence Unit, Zambia Country Report. (March 2013).

International cable makers federation:
http://www.icf.at/en/5756/trends_in_copper.html

Joint Assistance Strategy for Zambia. (2011-2015)

OECD/DAC. Zambia country and aid statistics:
http://www.oecd.org/dac/stats/ZMB.gif

UNCTAD World Investment Report 2012:
http://www.unctad-docs.org/UNCTAD-WIR2012-Full-en.pdf

UNDP & SOAS Centre for Development Policy & Research. Economic Policies for Growth, Employment and Poverty Reduction – Case study of Zambia. (2007)

UNIDO Africa Bureau. Zambia needs assessment report. (June 2012)

UNIDO and GHERZI, Feasibility study for a cotton spinning mill in 11 sub-Saharan African countries. Vienna. (2011).

World Bank databank on Zambia:
http://data.worldbank.org/country/zambia

Zambian Association of Manufacturers. ”*Zambian mining local content initiative”*, Discussion Paper, Leveraging Zambia’s industrialization with growth of copper mining investments. (Nov 2012)

Zambia National Human Development Report:
http://hdrstats.undp.org/en/countries/profiles/ZMB.html &
http://hdr.undp.org/en/reports/national/africa/zambia/NHDR_Zambia_2011_en.pdf

Zambia Sixth National Development Plan (SNDP)

Zambia UNDAF 2011-2015:
http://planipolis.iiep.unesco.org/upload/Zambia/Zambia_UNDAF_2011_2015.pdf

Annex D: Relevant socio-economic & industrial indices for Zambia

1. Selected Socio-Economic Indicators

Republic of Zambia- Selected Indicators over 2000-20012			
Indicator	**Unit**	**2000**	**2012 (or latest)**
Population	Millions	10	14
Population growth	% annual	2	3
Rural population	% of total	67	59
Life expectancy	Years	42	49
Mortality rate (under fives)	per 1,000	91	53
Poverty (population below poverty line)	% of total	72	61
Urban poverty		49	28
Rural poverty		83	78
Unemployment	% of labour force	14	13
Urban unemployment		32	29
Rural unemployment		5	5
Informal sector employment	% of total	88	89
GDP per capita at PPP	US$	1,000	1,700
GDP total (Current US$)	US$ billion	3	19
GDP growth	Annual %	4	6.3
GDP growth Agriculture		-1	9.3
GDP growth Industry		9	7.3
GDP growth Services		-	5.6
Inflation, GDP deflator		30	7.9
Agriculture, value added	% of GDP	22	21
Industry, value added	% of GDP	25	38
Exports of goods and services	% of GDP	27	37
Imports of goods and services	% of GDP	41	35
Electric power consumption	kWh per capita	610	635

Sources: World Bank, UN Stats & Economist Intelligence Unit[65]

[65] It should be noted that there is quite a variance in estimates of different sources for Zambia

2. Sub-Sector performance as a share of total manufacturing GDP

Period	1964 - 1991	1991-1998	2000-2006	1991-2010	2010 ZAM Study
	% GDP	% GDP	% GDP	% GDP	% GDP
Food, beverages and tobacco	25.05	38.8	35	36.9	33.92
Textiles, Wearing, & Leather Products	8.15	13.1	16.7	14.9	11.31
Wood and Wood Products	4.45	6.2	7.7	6.95	6.12
Paper, printing and publishing	7.55	4.1	2.8	3.45	2.47
Chemical, Rubber & Plastics	16.95	12.9	8.6	10.75	26.50
Non-metallic mineral products	10.35	1.6	1.8	1.7	2.83
Basic metal products	17.25	16	17.9	16.95	7.07
Fabricated metal products	9.75	7	9	8	9.19
Others	0.5	0.4	0.5	0.45	0.59
Total	100	100.1	100	100.05	100.00

Source: ZAM[66]

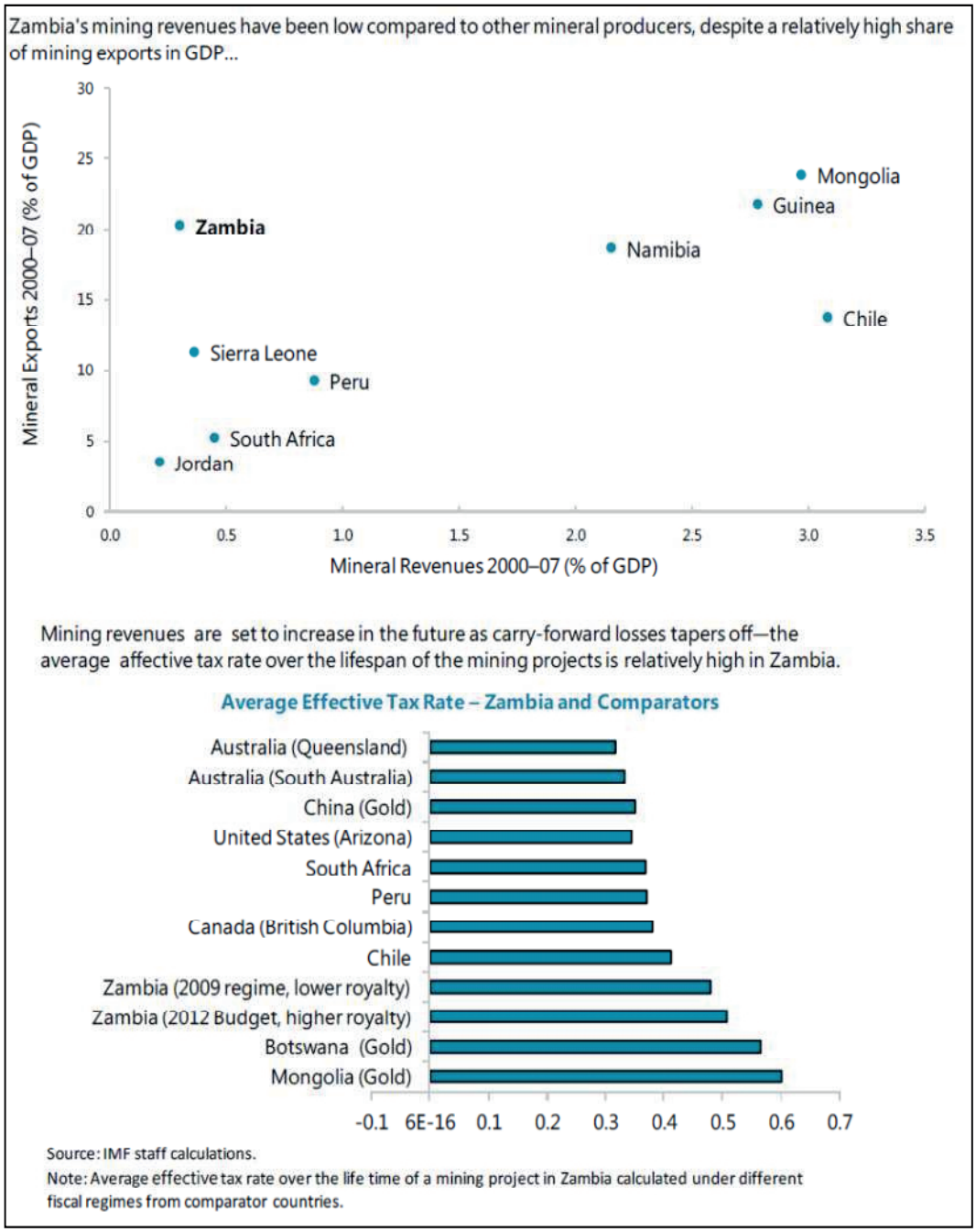
[66] Presentation on Opportunities for Manufacturing in Zambia, Zambia International Investment Forum, Livingstone 2012

3. Zambia Index of Industrial Production 1980-1999

PERIOD	TOTAL INDEX	MINING				MANUFACTURING									TOTAL ELEC-TRICITY
		TOTAL MINING	Coal	Non-ferrous Ore	Stone Quarrying	TOTAL MANU-FACTURING	Food, Beverages & Tobacco	Textile, Clothing & Leather	Wood & Wood Products	Paper & Paper Products	Chemicals, Rubbers & Plastics	Non-metallic Mineral Products	Basic Metal Industries	Fabricated Metal Products	
WEIGHT	1000.0	572.0	14.0	557.0	1.0	367.0	104.0	74.0	13.0	21.0	67.0	19.0	9.0	61.0	61.0
1980	100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1985	98.5	86.8	88.2	86.8	81.2	114.9	117.7	162.9	68.1	121.9	89.3	91.2	96.4	97.3	109.1
1990	96.3	78.9	65.3	79.2	126.3	125.4	127.0	166.6	109.4	137.0	112.6	122.2	49.4	98.2	84.3
1995	73.1	54.5	26.2	55.1	94.5	98.5	161.4	79.9	83.4	94.7	67.6	75.6	54.0	65.8	89.7
1999	66.5	52.8	26.1	53.4	105.2	86.2	87.9	146.4	23.8	79.4	81.1	82.9	41.6	38.3	76.2
% change (1980-1999)	-34%	-47%	-74%	-47%	5%	-14%	-12%	46%	-76%	-21%	-19%	-17%	-58%	-62%	-24%
% change (1980-1990)	-4%	-21%	-35%	-21%	26%	25%	27%	67%	9%	37%	13%	22%	-51%	-2%	-16%
% change (1990-1999)	-31%	-33%	-60%	-33%	-17%	-31%	-31%	-12%	-78%	-42%	-28%	-32%	-16%	-61%	-10%

Source: Zambia Central Statistical Office

Annex E: Zambia's mining revenue benchmarked against comparators



Source: IMF Zambia Country Report No. 12/200 – p. 15

Annex F: Electricity generating plants in Zambia

Name	Type	Capacity	Percentage
Kafue Gorge	hydro	990 MW	50.3%
Kariba Dam	hydro	720 MW	36.5%
Victoria Falls	hydro	108 MW	5.5%
Lunsenfwa	hydro	38 MW	1.9%
ZESCO small hydro power (SHP) plants[67]	hydro	totalling 24 MW	1.2%
ZESCO distributed energy plants	diesel	totalling 10 MW	0.5%
Copperbelt Energy Corporation (CEC) standby turbines	gas	80 MW	4.1%
Total	hydro	1,880 MW	95.4%
Total	diesel	10 MW	0.5%
Total	gas	80 MW	4.1%
Total electricity capacity		1,970 MW	100%

[67] Lusiwasi (12 MW), Musonda Falls (5 MW), Chishimba Falls (6 MW) and Lunzua (750 kW)

Annex G: Lessons learned and recommendations of the TCB projects mid- term review in June 2012

The purpose of this section is to consider the proposals put forth for future activities in view of the results achieved by the project under review.

All the stakeholders that have been interviewed during the mission have declared that the project has been considered very important for the Country needs but at the same time have declared that their expectation was much higher. All of them have understood the need of covering first the support to MCTI in designing the SMTQ infrastructure but are still expecting real actions, after the realisation of the infrastructure, for supporting the practical industrial needs in implementing their capabilities for being in conformity to the international trade requirements.

So far, explicit proposals for continued assistance in the field of SMTQ have been continuously repeated. There are still indications for the assistance needed in preparing governmental staff to work on the operational solutions in the implementation of the NQP Plan, there are equipment requirements for covering the first priorities from the reorganisation of the metrology sector to be covered by a national Agency and finally there are strong requirements for the local companies being supported in reaching a high level of competitiveness in the international market.

The last point being mainly related to the need of extra training, more testing facilities and solutions for an added value that could better support their industrial production.

The training should bring information on the standards to be used and on the new technologies to be applied in specific selected fields, i.e. in the food processing process.

The improvement of testing facilities being related to the need of accredited certificates for the measurements that will define the key characteristics of the products.

The added value to be recognised to a product could be based on information answering the increasing needs by the final customers on safety and quality products. Key elements on this point are the traceability issue, the certification mark and the various aspects in the packaging field (design, labelling, etc.).

It is clear that much work still remains to build the capacity of the NQI infrastructure to meet the existing and future needs of the domestic and export sectors. The objectives of this project are still highly relevant to the Country but extra steps are needed to reach the final goal the project has indicated. Moreover, if a second project or an extension is not considered, there is the real risk that the money spent with this project will be wasted, as the global infrastructure will collapse before being fully established.

A. Recommendations to UNIDO

- To update the logical framework, taking into account that the new Act on Metrology will fully modify the responsibilities and the objectives of the organizations involved in the scheme.

- To run further assessment visits to SMTQ organisations to monitor their implementation steps towards accreditation.

- To prepare a survey on the Country needs in the metrology/measurement area in order to schedule interventions for a suitable conformity assessment infrastructure. The surveys already organised by the project did not go into the details in this sector, regarding the type of measurements, the ranges, the level of uncertainty, the type of training and assistance required by the stakeholders that should be compared with a complete information on the numbers of laboratories (testing and calibration) working in the Country and the detailed evidence of their capabilities and services offered to the community.

- The Survey on the Metrology Country needs should cover not only the industrial needs for facilitating the trade but all the fields related to the social quality of life (health, environment, energy saving, food safety, consumer protection, etc.).

- To support the SMTQ organisations in becoming service providers of training and assistance activities to offer the industrial companies and public organisations solutions and services in the standardisation, measurement and verification fields (i.e. the offer of calibration services may not be sufficient if the users do not know how to manage the measurements; users need guidelines and training that explain how to implement the standards in their own systems.).

- To strengthen the participation and cooperation with international organisations (ISO, OIML, WELMEC, EUROLAB, etc.) for taking advantage of the existing documents and for developing the national competence thanks to exchange of experts, discussions and participation to technical Committees. This being easily supported by the decision that NQP has made the point a government responsibility in terms of funding provision.

- The NQP and the Implementation Plan should be completed with the preparation of a national operational strategy in the Metrology and Conformity Assessment fields, defining the financial and operational steps in the short-term period (3 years) and long-term period (5-10 years). The project should assist as well the Government in preparing a correct cost analysis related to the full implementation of the Plan.

- The import/export sector should be assisted with service providers offering indications and solutions for improving the companies' capabilities. INFO points on EU and international rules, access to databases on limits to be applied to imported goods in the different Countries, connection to international Organisations and assistance in the preparation of documents, etc. could be offered by a national Agency like the Zambia Development Agency or by the Chamber of Commerce via a specific Office.

- To prepare specific trainings on IT solutions in the field of conformity to ISO 17025 and ISO 17020.

- To support ZW&MA in the cooperation programme with the Customs for the inspection at the borders.

- To assist the SMTQ organisations in the definition of marketing awareness solutions for improving the dissemination of the information on the importance of the field (use of radio and TV spots, awareness CDs, Web pages, advertising material and gadgets permitting to reach not only the stakeholders but as well the public operators and educational institutions).

- To invest in the new generation with advanced studies offered by the Universities in the quality assurance field and in the measurement sector.

- To introduce into the Project staff some local people to be trained as future managers on SMTQ coordination activities (Capacity Building Unit), in order to prepare the exit strategy when the project comes to an end. Such Unit should have to be linked directly to the Cabinet Office to grant the coordination of activities covering different Ministries.

- In the event of an extension of the project, it should be important to impose a larger involvement of local staff and the use of a part time CTA, to grant a more effective capacity building of the counterpart.

- To organise an international Conference on SMTQ issues in Lusaka, inviting representatives from international organisations, to be informed on the solutions applied in Europe and to present the infrastructure under development in Zambia.

- To prepare an internal report with a monitoring and evaluation plan to ensure collection of the information required to judge impact and sustainability. The document should include as well clear suggestions, discussed with the stakeholders, to prepare an exit strategy.

- The present metrology capacity in Zambia is still insufficient to meet international standards and the level of services to the private sector is still inadequate to meet demand. Future support to Metrology should concentrate on accreditation of testing and calibration services.

B. Recommendations to the Government of Zambia

- To speed up the approval and implementation steps for the operational and functional establishment of the new Agency for Metrology.

- To speed up the assignment of the new ZABS director to permit a new phase in the cooperation ZW&MA –ZABS, and to facilitate the suggested organisation of the new Metrology Infrastructure.

- To clearly state which is the coordination staff or Office under the PS, in the period the new Technical Regulation Office is not yet in place, covering the steps

related to the revision and application of the existing regulations in conformity to EU and international rules.

- The project for a National Accreditation Body established in the Country should start from the creation of a local group of qualified Assessors and Experts working as SADCAS Team for all the accreditations in Zambia. A credible and recognised AB needs in fact more than 5 years before becoming operational according to international rules.

- To strengthen the cooperation with Universities and Research Centres to run training and awareness addressed to the creation of new professionals in the SMTQ field.

- The bureaucratic system of the MCTI, resulting in unnecessary delays for the project activities, should be considered and solved.

- Additional investment is needed to support the NQP in Zambia during its implementation period and the Government should analyse the possible funding solutions.

- The funding for the Implementation Plan cannot be covered by the MCTI Budget only and the involvement of the whole Government must be assured not to risk the whole exercise.

- Attention to the statute of the public NQ Institutions, to grant financial independence and autonomy for the services offered to the clients.

- The awareness campaign on the SMTQ elements should be a continuous effort and should involve training and information dissemination, starting from secondary school and University levels, leading to the formation of a new class of teachers and industrial managers.

- The involvement of the private sector in the governance of the national quality infrastructure should be considered a norm.

- To allow UNIDO to sit in MCTI Senior Management Meetings chaired by the Minister which would be the appropriate forum for submissions and general updates to government on the elements related to ownership, and monitoring of the project?

C. Recommendations to the Donor

- The Mid-term review Expert does recommend considering the continuation of this project to support the Beneficiaries with the scheduled activities.

- Further support to development of the NQP for Zambia is needed as the local capacity of implementing the plan with operational solutions is weak and there is an important risk to stop the transition to a new scheme, losing all the results achieved up to now. Technical support to the local companies is still weak and the recommendation reflects the need to implement the

metrological services (calibration and testing) that support the Quality infrastructure.

- The Mid-term review Expert would recommend that NORAD continue to work with implementing organisations such as UNIDO to make sure that projects are designed and managed according to well defined and internationally recognised rules, avoiding overlaps and non-uniform development of assistance activities.

Annex H: Project LogFrames

A. Revised TCB project LogFrame

Intervention Logic	Verifiable Indicators	Sources of Verification	Assumptions
OBJECTIVE: To enhance the trade performance of the Republic of Zambia by creating conditions for strengthening the national legislative framework supporting standards, technical regulations, metrology, testing and quality, addressing deficiencies in standards, metrology and testing capabilities, establishing a credible conformity assessment infrastructure and fostering integration into the multilateral trading system. Internal trade benefits to accrue concomitantly.	Zambian National Quality is implemented. NQI re-engineered in line with best practices. At least 70 % of public blocks for fully functional standards and national metrology organizations in place. Public conformity assessment institutions streamlined and those providing services for public good accredited.	Baseline and after-intervention assessment. Private sector perception survey.	Government commitment and ability to finance good of public functions of NQI and its re-engineering.
OUTCOME 1: Project implementation and monitoring system established and well-functioning to ensure quality of deliverables.	Positive final evaluation.	Physical records.	Efficient HQ-field-UNDP coordination.
OUTPUT 1.1: Project office set-up and functioning with appropriate staff.	Satisfaction of project counterparts.	Evaluation report.	-
OUTPUT 1.2: Inception report finalized and approved by Steering Committee.	Inception report.	Physical records.	-
OUTPUT 1.3 Project governance system established and regular reporting/monitoring takes place.	Steering Committee/ progress reports.	Physical records.	-
OUTCOME 2: Government of the Republic of Zambia develops and approves a National Quality Policy and amends as necessary the legislative framework surrounding MSTQ. This includes a strategy and tools to	National quality policy is approved.	Physical records.	MCTI already has committed to developing NQI policy as per Strategic Plan 06-11, as well due to regional level commitments. Political willingness to finalize the

Intervention Logic	Verifiable Indicators	Sources of Verification	Assumptions
encourage the quality culture in Zambia.			process.
OUTPUT 2.1: Draft of National Quality Policy for Zambia developed and submitted to Government of Zambia through MCTI.	Draft of national quality policy in place.	Physical records.	Willingness of MCTI to accept and act on recommendation as to restructuring of the MSTQ infrastructure .
OUTPUT 2.2: Review the existing Standards Act and make recommendations for positioning ZABS as the peak standards body in Zambia.	Standards Act redrafted and submitted to MCTI.	Physical records.	NQI policy is approved.
OUTPUT 2.3: Review the existing Metrology and Calibration Act and update as necessary in line with NQI policy.	Metrology and Calibration Act redrafted and submitted to MCTI.	Physical records.	NQI policy is approved.
OUTPUT 2.4: Review the Weights and Measures act and make recommendations to upgrade it to a Legal Metrology activity if accepted through NQI.	Legal Metrology Act redrafted and submitted to MCTI.	Physical records.	NQI policy is approved.
OUTPUT 2.5: Draft Technical Regulations Framework developed and submitted to Cabinet.	Technical Regulations Framework drafted in line with SADC TBT annex and submitted to the Cabinet office.	Physical records.	NQI policy is approved.
OUTPUT 2.6: Assist in the development and operational plan for accreditation body in line with the NQI policy.	Operational Plan for accreditation developed and submitted to the MCTI.	Physical records.	If the approved NQI policy foresees a National Accreditation Body.
OUTPUT 2.7: Develop material and support to an awareness campaign in all regions to highlight the importance of quality and standards for consumers safety and export expansion.	Availability of awareness material, number of events.	Project reports.	Availability and interest from counterpart institutions (chambers of commerce, schools, consumer groups).
OUTCOME 3: Standards development, adoption and information provision	Number of national standards adopted, number of standards information	ZABS records-comparison with	Managerial capacity at ZABS, increased interest in public

Intervention Logic	Verifiable Indicators	Sources of Verification	Assumptions
capacities of ZABS updated/streamlined.	requests registered.	baseline information.	outreach.
OUTPUT 3.1: Provide expert assistance to ZABS in streamlining procedures and operations.	ZABS procedures revised.	Technical reports.	Willingness of ZABS to provide staff time and resources.
OUTPUT 3.2: Management training/exposure (senior and middle management level) for ZABS.	Improved management practices.	Business perception survey results-comparison with baseline.	Willingness of ZABS to provide staff time and resources.
OUTPUT 3.3: Standards Information Services strengthened .	Increase in quantity of services .	Technical reports	Willingness of ZABS to provide staff time and resources.
OUTCOME 4: National institutions for scientific and legal metrology upgraded in line with the recommendations of NQI policy.	National measurement capacity of Zambia recognized, Legal Metrology conforms to SADCMEL recommendations.	BIPM data, OIML and SADCMEL.	Government commitment to finance scientific and legal metrology fully.
OUTPUT 4.1 Assistance towards recognition of National measurement capacity (scientific/industrial metrology).	Accreditation of at least one scope in ZABS metrology.	Accreditation certificate.	Sufficient number of technical staff made available to ZABS, Government willing to cover running costs.
OUTPUT 4. Inspection and Verification Services of Zambia Weights and Measures Agency (ZWEMA) improved.	ZWMA inspectors able to cover more than 2 districts, as well as prepackaged goods.	Project reports.	Sufficient number of technical staff made available to ZWMA, Government willing to cover running costs.
OUTCOME 5: National testing laboratories upgraded in line with the recommendations of NQI policy, laboratory baseline assessment -with a aim towards achieving	Reduced unit costs of certifying/testing products for export reduced time to issue test reports from 8 weeks to 3-5 days maximum.	Laboratory reports.	Demand for testing services increases, sufficient number of technical staff available/retained.

Intervention Logic	Verifiable Indicators	Sources of Verification	Assumptions
accreditation.			
OUTPUT 5.1: Conduct baseline assessment of the capacity and scope of public and private analytical laboratories in Zambia, compare the existing capacities, mandates and potential for accreditation.	Baseline assessment available.	Project reports.	Willingness of public and private laboratories to take part in assessment and allow the expert on their premises.
OUTPUT 5.2: Preventive maintenance, good laboratory upkeep training for ZABS.	Preventive maintenance manual developed, lab staff trained.	Project reports.	ZABS can recruit 1-2 instrumentation specialists to work full time.
OUTPUT 5.3: Laboratory Management software installed and computer based equipment inventory.	Lab management software installed and used.	Physical records.	ZABS designates IT specialist support and is willing to keep records up to date.
OUTPUT 5.4: Management systems implementation assistance .	SOPs, Quality Manuals developed.	Physical records.	Technical competency of staff, staff retention.
OUTPUT 5.5: Support towards accreditation for selected key labs.	Accreditation of at least one scope in ZABS testing.	Accreditation certificate.	Sufficient number of technical staff made available to ZABS.
OUTCOME 6: The Zambian Quality Chain with regard to testing and export certification of products in selected sectors strengthened.			
OUTPUT 6.1: In cooperation with the Honey Partnership programme also funded by Norad, assist in development and publication of Zambian standards based on Honey Council field standards, and establishment of code of practice, including for traceability.	Code of Practice developed.	Physical records.	Clear understanding among Honey Partnership programme stakeholders.

Intervention Logic	Verifiable Indicators	Sources of Verification	Assumptions
OUTPUT 6.2: Based on the findings of business perception survey and interviews, identify key quality problems affecting Non-Traditional exports and organize relevant training of trainers in quality management systems.	Increased quality awareness among producers, number interested in applying management system.	Project reports.	Increase in demand for Zambian exports especially from South Africa and Europe.
OUTCOME 7: Trade policy and negotiations capabilities of the Government of Zambia is strengthened.	Zambian negotiators actively participating in meetings, holding important chair positions in committees.		
OUTPUT 7.1: Organizing a general capacity building seminar for four days covering all the major agreements such as services, TRIPS, agriculture etc.	Positive evaluation of training session.	Training evaluation reports.	Availability and interest from counterpart institutions.
OUTPUT 7.2: Training course on SPS and TBT Agreements.	Positive evaluation of training session.	Training evaluation reports.	Availability and interest from counterpart institutions.

B. Renewable Energy project

LogFrame – Logical framework for SFZAM10001					
		Intervention Logic	**Objectively verifiable Indicators**	**Sources of verification**	**Assumptions**
Development goal/impact.	What the target group achieves (benefit).	Through the provided energy services in the Shiwa Ngandu project area has economically and socially developed through and increased income generation in the local population. Living conditions have improved as well as the local income situation.	- Increase of income for local population with associate indicators for social well – being including local GDP, health and education.	- Project evaluation - National statistics - Regional surveys.	
Outcome(s) immediate objective(s).	What the target group does differently? (change in behaviour).	**OUTCOME1**: The project facilitated local opportunities through augmenting off – grid rural electrification by setting up a mini hydropower plant (1 MW). Availability of reliable supply of electricity will catalyze productive uses in the project area, and promote agri – businesses, tourism and other allied activities. Through the erection of distribution lines through Rural Electrification Authority (REA), and linking energy services that will become available with productive uses in poverty reduction in and around Shiwa Ngandu project area jobs are created for the local population and possibilities for improved health care and education are established and frequented by the population. A target population of 20.000 inhabitants will benefit from the services	**OUTCOME 1:** - Number of jobs created/ percentage of population employed - Number of business created - Number of created or improved community centres for health and education.		• Timely funding will be contributing by the ZESCO; • Commitment of ZESCO and national/ local institutions to provide logistic support and operational facilities in terms of local clearances,

LogFrame – Logical framework for SFZAM10001					
		provided through the minigrid. **OUTCOME 2**: As a secondary outcome, knowledge of decision makers, experts and technicians about micro – hydro power technologies and programmes will be enhanced, which will lead to scaling up of SHP programme in Zambia with the aim to help combating energy poverty also in other regions.	**OUTCOME 2** - National stakeholder and political decision makers are trained on the potential benefits of hydropower.		land and information and in etc.; • Timely erection of the distribution lines in the mini grid area by the Rural Electrification Authority; • Local communities and enterprises located within vicinity of the project may derive varying degree of benefits depending upon their absorption capability; • Ownership of the project
Outputs (results)	What the project achieves (create a potential)	**OUTPUT 1**: 1MW SHP based power plant is set up and made operational at Shiwa Ngandu with distribution lines in place to selected local villages/ communities - the local population is able to access the energy. **OUTPUT 2**: A sufficient number of local technicians is trained to be able to operate the power plant and is able to undertake basic maintenance and supervision for continued operation. **OUTPUT 3**: The local community (including decision makers and the private sector) is informed and trained about the new opportunities (by the developed plan of action) see activity 3) and enables local counterparts to make use of the new energy opportunity.	**OUTPUT 1:** Plant is commissioned and running for one month. Communities receive electricity. **OUTPUT 2:** training reports, tests and certification is undertaken with qualified local personnel. **OUTPUT 3:** Plan of action available and agreed upon with local counterparts and made publically	**OUTPUT 1:** - Project documentation. - Site visit. **OUTPUT 2:** - Project documentation. - Site visit.	

LogFrame – Logical framework for SFZAM10001					
			available.		will be critical to the success of the process. Hence, strong linkage need to be established between the energy produced and the potential productive and social benefits will be very important ; and • Information dissemination may be difficult.
Activities	What the project does	**ACTIVITY 1**: Civil construction including buildings, power station, procurement and installation of equipment and commissioning of the power plant (UNIDO and ICSHP). **ACTIVITY 2**: Capacity building and training on design, operation and maintenance of SHP power plant for the local technicians through the organization of at least 3 workshops and the provision of learning material and external expertise. **ACTIVITY 3**: A plan of action for productive activities is developed and discussed with the local authorities. The plan contains a detailed analysis of opportunities for employment and income generation with the produced power from the Shiwa Ngandu power plant and is designed to enable local counterparts to make use of the new energy opportunity.	**ACTIVITY 1**: Mini Hydropower plant (1MW) becomes fully operational **ACTIVITY 2**: - Workshops prepared and conducted - Training material available - External experts conducted training **ACTIVITY 3**: - Plan of action prepared	**ACTIVITY 1:** - Project documentation. - Site visit. **ACTIVITY 2:** - Project documentation. - Site visit. **ACTIVITY 3:** - Project documentation. - Site visit.	

Printed in Austria
ODG/EVA/12/R.19 - October 2013-60

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