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CARIBBEAN DEVELOPMENT BANK



**PROJECT COMPLETION VALIDATION REPORT
HARRISON'S CAVE REDEVELOPMENT
BARBADOS**

**EXECUTIVE SUMMARY
MANAGEMENT RESPONSE
PROJECT COMPLETION VALIDATION REPORT**

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**OFFICE OF INDEPENDENT EVALUATION
SEPTEMBER 2020**

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PROJECT SUMMARY

1. Harrison's Cave was opened as a public attraction by the Government of Barbados (GOBD) in 1981. By the mid-1990s it became evident that the full economic potential of the Cave was constrained by an aging plant, an undeveloped Cave system, restricted capacity during peak hours, limited visitor amenities and inadequate site access.
2. Given the importance of the Cave to the tourism development of Barbados, CDB provided technical assistance (TA) loan to the Government of Barbados in the amount of USD1.38 mn to finance a pre-investment study for the expansion and upgrade of the Cave and other tourism sites.
3. Following the recommendations of that study, the Board of Directors (BOD) approved a capital loan of USD16.87 mn in July 2006 to Caves of Barbados Ltd (CBL) to assist in financing the development of the Cave's facilities, road safety improvements, the replacement of tour trams and the enhancement of the equipment and operations. An additional loan of USD12.85 mn was approved by the BOD in October 2009 to finance cost overruns associated with design changes and delays in project implementation.
4. CBL was the Executing Agency. Project completion was predicted for September 2011, but actual completion occurred in December 2015.

PROJECT OBJECTIVES

5. The overall objective of the project was to establish a financially viable and environmentally sustainable basis for the tourist operations at Harrison's Cave.

EVALUATION OF PERFORMANCE

6. The assessment focused on the core evaluation criteria of relevance, effectiveness, efficiency, and sustainability, as well as the complementary criteria of CDB and Borrowers' performance.

Relevance

7. The PCR and the Evaluator rated relevance as **Highly Satisfactory** due to the project's alignment with Barbados' Tourism Development Programme, as well as the project's potential contribution to the country's economic and tourism development.

Effectiveness

8. Effectiveness is calculated as the simple arithmetic average of the ratings for project outputs and outcomes. The PCR rates the achievement of outputs as Satisfactory and the achievement of outcomes as Marginally Unsatisfactory. The Evaluator, on the other hand, rates the achievement of outputs as Satisfactory and the achievement of outcomes as Unsatisfactory. In both cases this equates to an average rating of **Marginally Unsatisfactory**.

9. The difference in the rating of outcomes by the Evaluator is as a result of the project's inability to achieve an adequate operating surplus and cash flow on an annual basis and to provide evidence of improvement in visitor satisfaction.

Efficiency

10. Both the PCR and the Evaluator rate efficiency as **Satisfactory**. The PCR calculates the revised economic rate of return (ERR) at completion as 12% in comparison with the 13% calculated at appraisal. Notwithstanding delays in implementation, the PAS criteria suggest a rating of satisfactory when the ERR is at least 12%.

Sustainability

11. The PCR rates sustainability as **Unsatisfactory** due to the failure of the project to ensure financial viability of CBL operations.

12. Financial projections at appraisal pointed to the expected realisation of surpluses beginning in 2010 and the achievement of financial stability from 2012. This was based on the implementation of an aggressive marketing plan which was expected to increase market share and visitor numbers to the Cave. However, evidence suggests that this was not realised and GOBD provided subventions to CBL every year since 2010. The Evaluator concurs with this rating.

Performance of the Borrower/Executing Agency

13. The PCR rates the performance of the Borrower as **Unsatisfactory** based on evidence which suggest that CBL did not assert ownership in a way which reflected the importance of the project to the performance of the organisation, nor did the Project Coordinator (PC) fulfil reporting and communication requirements in a timely manner. The Evaluator concurs with this rating.

Performance of the Caribbean Development Bank

14. The PCR rates the performance of CDB as **Satisfactory** noting that CDB provided regular implementation support via participation at meetings of the Project Implementation Team, supervision and site visits, and communication with CBL.

15. The Evaluator also rates the performance of CDB as Satisfactory based on the supervision exercised by CDB staff during project implementation and the fact that the Bank responded expeditiously to the request for an additional loan by CBL of USD12.85 mn to assist in financing cost increases without further delay to the project.¹ CDB also provided realistic conditions for first disbursement of the additional loan funds which recognised the challenges experienced by the Borrower and GOBD in having land acquisition matters completed.

OVERALL ASSESSMENT

16. The Evaluator rates overall project performance as **Marginally Unsatisfactory**. This rating is based on an arithmetic average of the total scores from separate assessments of the four core evaluation criteria: Relevance - Highly Satisfactory; Effectiveness – Marginally Unsatisfactory; Efficiency - Satisfactory; and Sustainability - Unsatisfactory.

17. Details of the ratings are summarised below:

¹ A review of all project supervision reports prepared over the life of the project indicate that CDB staff were aware of unfolding implementation issues and outlined potential remedial measures.

**SUMMARY RATINGS OF CORE EVALUATION CRITERIA AND OVERALL ASSESSMENT
OF THE PROJECT**

Criteria	PCR	OIE Review	Reason if any for Disagreement/Comment
Relevance	Satisfactory	Satisfactory	
Effectiveness	Marginally Unsatisfactory	Marginally Unsatisfactory	
Efficiency	Satisfactory	Satisfactory	
Sustainability	Unsatisfactory	Unsatisfactory	
Composite (Aggregate) Performance Rating	Marginally Unsatisfactory	Marginally Unsatisfactory	
Borrower & EA Performance	Unsatisfactory	Unsatisfactory	
CDB Performance	Satisfactory	Satisfactory	
Quality of PCR	-	Marginally Unsatisfactory	The Evaluator rates the quality of the PCR as Marginally Unsatisfactory due to inadequate data provided in support of ratings. (Evaluator supplemented through file review.)

Lessons

18. The following lessons, considered at appraisal stage, were drawn from the experiences of CDB and other multilateral development banks in the area of tourism-related infrastructure improvements:

- (a) It is necessary to involve key stakeholders including business operators and residents of the affected communities, throughout the entire project cycle
- (b) Designs should be finalised before the estimation of capital costs so as to reduce changes in project scope and increased cost during construction
- (c) An experienced and dedicated Project management Team is critical to minimise project costs and time overruns
- (d) Adequate maintenance of the facilities and the roads is necessary in order to preserve the design of the project.

19. Lessons from PCR:

- a) The Harrison Cave project presented a challenging mix of infrastructure improvement, community engagement, environmental management, institutional strengthening, market development and income generation. All of these elements had to be risk managed and advanced together for the project to be successful. While problems were encountered in each, and identified by CDB staff in supervision reporting, it is not clear that sufficient senior management and political level engagement were deployed to resolve them. Critically, the skills and effort deployed in business and institutional development appear not to have been sufficient to turn around what was already a challenged parastatal entity. Training courses alone were not sufficient. In future projects of this nature, institutional and business development support will need to play a stronger role alongside technical and engineering effort.
- b) Land acquisition should ideally be completed prior to project initiation. When this is not possible there is heightened risk of implementation delay and cost overruns, as experienced in this project. In cases where it is not possible to delay implementation until acquisition is either complete or assured, then detailed scenario planning and contingent contractual measures should be developed, actively monitored, and deployed as soon as obstacles are encountered.
- c) For CDB-funded projects, the contracts of consultants, project managers, and responsible executing entities should, and ordinarily do, spell out requirements for progress, completion, and ESG reporting. However, these are not always observed. Incentives and/or penalties for doing so should be included in contractual arrangements and enforced. As well, performance assessment of CDB staff should reflect whether adequate action and follow-up have been undertaken to ensure that the reporting requirements of entities under their supervision have been met.
- d) The delivery of a CDB project termination letter to a Recipient of CDB financing should be preceded by a checklist confirmation from the CDB project supervisor that the reporting requirements set out in the particular loan agreement and other monitoring, evaluation and supervision activities are completed and that reports are received and stored at CDB.

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MANAGEMENT RESPONSE

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MANAGEMENT RESPONSE

We have reviewed the Project Completion Validation Report for the Harrison Cave Development Project Completion Report (PCR) and have outlined below management responses to key observations made by the Evaluator.

1. **Evaluators Observation:** The quality of the PCR is rated as marginally unsatisfactory. The Evaluator suggests that this is due to the absence of key information in the PCR. While the Evaluator did not provide details in the report, the following key information gaps were outlined in an email to the PCR team:

- (a) Absence of ratings that are consistent with PAS methodology for project outcomes. (The PCR frequently uses ratings that are based on neither PAS nor PPES methodology. Examples: Highly Probable; Probable; Low Probability; Improbable);
- (b) Absence of ratings using PAS criteria for outputs;
- (c) No summary of PAS core criteria ratings and justifications at time of PCR preparation;
- (d) No Independent Borrower Assessment of project;
- (e) No Independent Borrower Assessment of CDB's performance; and
- (f) No minutes from Exit Workshop.

2. **Management Response:**

- (a) We note the Evaluator's observation at items 3(a), 3(b) and 3(c) above and would like to indicate that the PCR was completed in accordance to an older version of the PCR template. The consultant engaged to prepare the PCR utilised an earlier version of the PCR template. Our team accepts responsibility for not providing the latest template to the consultant. Notwithstanding items 3(a) to 3(c) above, we are confident that the content of the PCR generated some valuable lessons learnt that can assist the Caribbean Development Bank to better design and implement similar interventions in its Borrowing Member Countries.
- (b) As it relates to items 3(d) and 3(e), our records will show the PCR team made numerous attempts to get feedback on the Independent Borrower/IA Assessment of Project from Cave of Barbados Limited (CBL) (the Project Executing Agency). The draft PCR inclusive of the Independent Borrower/IA Assessment of Project was shared with CBL in March 2019, for the company's consideration. This was followed up with numerous calls and emails. However, notwithstanding the PCR team's efforts, CBL has maintained that the company is not in a position to complete the Independent Borrower/IA Assessment of

Project as many of the key staff involved in the implementation were no longer with the company and were not in a position to provide inputs to the PCR.

- (c) As it relates to item 3(f), we wish to note that the decision not to hold a workshop was made because many of the key stakeholders involved in the implementation of the Project (consultant, officials of the key Ministry staff, and contractor staff) were not available to participate in a workshop. In this circumstance, an Exit Workshop would have yielded little additional value to the PCR preparation.

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CURRENCY EQUIVALENTS

(Dollars [\$] throughout refer to United States dollars [USD] unless otherwise stated)

USD1.00 = BDS2.00

BDS1.00 = USD0.50

ABBREVIATIONS

%	-	per cent
AR	-	Appraisal Report
BMC	-	Borrowing Member Countries
BTOR	-	Back-to-Office Report
CBL	-	Caves Barbados Ltd.
CDB	-	Caribbean Development Bank
ERR	-	Expected Rate of Return
ESPU	-	Environmental Special Projects Unit
GOBD	-	Government of Barbados
mn	-	million
MTW	-	Ministry of Transport and Works
PC	-	Project Coordinator
PM	-	Project Manager
PCR	-	Project Completion Report
PIT	-	Project Implementation Team
PSR	-	Project Supervision Report
TA	-	Technical Assistance
ZSEC	-	Zone of Special Environmental Control

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1. BASIC PROJECT DATA

Project Title:	Harrison's Cave Redevelopment
Country:	Barbados
Sector:	Tourism
Loan No.:	21/OR-BAR
Borrower:	Government of Barbados
Implementing/Executing Agency	Caves of Barbados Ltd.

<u>Approval and Disbursements (\$ mn)</u>	<u>OCR</u>	<u>CDB LOAN</u> <u>SFR</u>	<u>Total</u>
Loan Amount (Original)	16.87	-	16.87
Additional Loan	12.85	-	12.85
Total Loan Disbursed	28.02	-	28.02
Cancelled	1.7	-	1.7

<u>Project Milestones</u>	<u>At Appraisal</u>	<u>Actual</u>	<u>Variance (months)</u>
Original Loan: Board Approval	2006-07-13	2006-07-13	-
Loan Agreement signed	2006-09-12	2007-02-14	(5.1)
Loan Effectiveness ²	2006-10-30	2008-04-02	(17.1)
Add. Loan: Board Approval	2009-10-14	2009-10-14	-
Loan Agreement signed	2009-12-14	2010-01-22	(1.3)
Loan Effectiveness ³	2010-02-13	2010-01-22	0.70

<u>CDB Loan</u>	<u>At Appraisal</u>	<u>Actual</u>	<u>Variance (months)</u>
First Disbursement Date	2006-11-30	2008-07-01	(19)
Revised Terminal Disbursement Date	2011-12-30	2014-12-31	(36)
TDD Extensions (number)		4	

<u>Project Cost and Financing (\$ mn)</u>	<u>At Appraisal</u>	<u>Actual</u>	<u>Variance (mn)</u>
CDB Revised Loan	29.71	29.94	(0.23)
Counterpart	12.71	12.71	-
Total	42.42	42.65	(0.23)

<u>Terms</u>	<u>Interest Rate</u>	<u>Repayment</u>	<u>Grace Period</u>
CDB Loan (OCR)	5.32% variable	17 years inclusive of 5 years grace	5 years

<u>Implementation</u>	<u>At Appraisal</u>	<u>Actual</u>	<u>Variance (months)</u>
Start Date ⁴	2006-09-12	2007-02-14	(5.1)
Revised Completion Date	2011-09-30	2014-10-31	(37.0)
Implementation Period (years)	5.16	7.7	(2.6 years)

<u>Economic Rate of Return (%)</u>	
At Appraisal (Revised Loan)	13%

² Date Conditions to First Disbursement satisfied.

³ Date Conditions to First Disbursement satisfied.

⁴ Implementation begins with signing of Loan Agreement

2. PROJECT DESCRIPTION

Rationale

2.01 The Tourism Sector is recognised as the main catalyst for economic development in Barbados. Consequently, the main objective of the Barbados National Tourism Policy is to ensure the sustainable development and full potential of tourism assets, while conserving the natural environment.

2.02 Harrison's Cave was opened as a public attraction by the Government of Barbados (GOBD) in 1981 and within a few years became the most popular tourist attraction with over 100,000 visitors per year. It is the only "drive-in" cave in the Caribbean and one of only three in the world. By the mid-1990s it became evident that the full economic potential of the Cave was constrained by an aging plant, an undeveloped Cave system, restricted capacity during peak hours, limited visitor amenities and inadequate site access.

2.03 In an effort to address these constraints, GOBD commissioned a feasibility study to assess the viability of the redevelopment of the Cave and evaluate the potential for expansion and enhancement with an overall aim to improve its long-term sustainability as a major contributor to the tourism sector. Recommendations from the study included the: (a) expansion of the viewing area to improve visitor experience and capacity; (b) streamlining of technical and financial operations to optimise income generation and employment opportunities; and (c) implementation of an amended business and marketing strategy to increase the Cave's value and contribution to the national economy.

2.04 In view of the importance of the Cave as a National Heritage site and the potential for enhancing output, quality and competitiveness of the tourism sector, GOBD accepted the recommendations of the study and requested assistance from the Caribbean Development Bank (CDB) for implementation.

Expected Impact

2.05 The project was expected to contribute to the enhancement of the local tourism product and the marketability of Barbados as a sustainable tourist destination; increase employment opportunities from the operation of ancillary services; positively impact the country's Gross Domestic Product and Central Government's fiscal operations over the medium to long term; and improve the institutional and financial performance of the Cave.

Objectives or Expected Outcomes

2.06 The objective of the project was to establish a financially viable and environmentally sustainable basis for the operations of Harrison's Cave. In addition, the project sought to improve the Cave's prospects for long-term sustainability as a major contributor to tourism performance.

Components and/or Outputs

2.07 The project comprised fourteen main components, namely:

- (a) Pre-Investment Study completed in accordance with Appraisal Report (AR)
- (b) Building and Civil Works completed by December 2009
- (c) Furniture and Equipment installed by December 31, 2009
- (d) New Trams procured by December 31, 2007
- (e) Land Acquisition completed by December 31, 2006
- (f) Road Improvement completed by December 31, 2011
- (g) Signage completed in accordance with AR
- (h) Institutional Strengthening completed by December 31, 2010
- (i) Marketing and Promotion activities completed in accordance with AR

- (j) Geo-Technical Stability Study completed in accordance with AR
- (k) Environmental Monitoring Equipment procured in accordance with AR
- (l) Environmental Monitoring Consultancy Services (TA) completed in accordance with AR
- (m) Engineering and other Professional Services completed in accordance with AR
- (n) Full complement of Project Management personnel in place during implementation.

Provision of Inputs

2.08 In 1997 and 1998, CDB provided a TA loan totalling USD1.38 mn to finance pre-investment studies for the expansion and upgrade of Harrison's Cave and other natural tourism sites.⁵

2.09 On July 13, 2006, the Board of Directors approved a loan to Caves of Barbados Ltd (CBL) in the amount of USD16.87 mn to assist in financing the development of the Cave's facilities, road safety improvements, the replacement of tour trams and the enhancement of the equipment and operations. This approved amount represented 65% of the estimated project costs.

2.10 As a result of delays in project implementations and cost overruns associated with design changes, total project costs were estimated to increase from USD25.86 mn to USD42.42 mn. Consequently, on 14 October 2009 CDB approved an additional loan of USD12.85 mn to CBL increasing its financing contribution to 70% of overall project costs. The remaining 30% was provided through the counterpart financing by GOBD and CBL. The terms and conditions of the Original Loan were applicable to the Additional Loan.

Implementation Arrangements

2.11 CBL was the Executing Agency throughout the Project. As a condition to the loan, a seven member Project Implementation Team (PIT), which included the Managing Director and Operations Manager of CBL, was established to develop operational plans for the new facility and undertake overall responsibility for project execution. The Head of PIT reported directly to the Chairman of the Board of CBL. A Project Coordinator, who was also a member of the PIT, was assigned to facilitate day-to-day management of operations. The Environmental Special Projects Unit (ESPU) of the Ministry of Energy and the Environment provided administrative and technical support to the office of Project Coordinator. Two Project Managers⁶, reporting to the Project Coordinator, were appointed with responsibility for road works and construction work at the Cave.

2.12 An Environmental Officer with overall responsibility for the Cave's environmental monitoring programme was appointed to ensure compliance with the requirements of the Zone of Special Environmental Control (ZSEC).

2.13 At Appraisal it was specified that a procurement notice for the road works would be published by September 2006 and a contract awarded no later than May 2007. However, after further consultation it was agreed that the Ministry of Transport and Works (MTW) would undertake the road works.⁷ The Chief Technical Officer, MTW was responsible for oversight of the road works with support from the Project Manager (Road Works) and other engineering, technical and clerical staff. The road works ran concurrent with the main construction work at the Cave.

⁵ TA Loan No 11/OR-BS in the amount of USD850,000 approved in March 1997 and USD530,000 approved in March 1998. Of this total USD683,508 was allocated for the formulation of an integrated development programme for Harrison's Cave and associated sites.

⁶ Required to be Engineers

⁷ This was included as a condition precedent to first disbursement in the new Loan Agreement. Caves of Barbados was required to provide CDB with an agreement between themselves and GOBD for the completion of the road works.

2.14 CDB's project officers were required to supervise the project in accordance with the project's supervision plan.

2.15 Initially the project was expected to be implemented over a 24-month period commencing July 2006 and a project launch workshop organised within one month of satisfaction of conditions precedent. The revised project was estimated to be completed over a 64-month period with completion projected to September 2011. Actual completion occurred in October 2014.

Identification of Risks and Mitigation Measures

2.16 The project was designed to minimise any potential negative environmental impacts and enhance environmental protection and management of the Cave and its environment, notwithstanding this, the following risks and mitigation measures were identified at appraisal:

TABLE 1: RISKS AND MITIGATION MEASURES

Risks	Mitigation Measures
Improper maintenance could affect the life cycle of the plant and lead to potential environmental degradation.	The development and implementation of a maintenance plan was stipulated as a condition of the loan.
Delays in land acquisition could increase project cost and erode net benefits.	Consultations for the acquisition of land commenced prior to project approval. In the event that a satisfactory agreement was not reached between the parties, the process of compulsory acquisition was to be initiated.
The possibilities of ineffective implementation and management/monitoring both at the environmental and operational level.	Suitably qualified and experienced staff were employed in key strategic leadership positions. In addition, a Training Plan, a Business Plan, a Strategic Marketing Plan and an Environmental Management Plan was to be drawn up to provide guidance to management. TA was provided by CDB to assist with the establishment of an environmental monitoring programme and there was expected to be annual consultations between CDB and CBL.
Industry and financial risks associated with visitor arrivals to the country and visitor attendance at the Cave.	A marketing strategy which focused on product diversity and ongoing marketing and promotion programmes nationally and internationally was implemented.

3. EVALUATION OF DESIGN AND IMPLEMENTATION

Relevance of Design and Formulation

3.01 The ESPU of the Ministry of Energy and the Environment was responsible for managing the design phase of the project which, to a large extent, was informed by feasibility studies, as well as extensive consultations with CBL staff, tour operators, taxi drivers and the residents of neighbouring communities.

3.02 Four design options were considered and evaluated by the engineering consultants against the following criteria: land use; environmental, social and community benefits; visitor capacity and handling;

interpretive potential; and economical financial and organisational structure. Option C⁸: “*the construction of a new Visitor’s Reception Centre on the cliff top and relocation of other facilities to that area, renovation of the existing Cave Interpretive Centre / Visitor Reception Centre, and the transformation of existing parking into a garden/park*” was chosen as the most viable alternative. A nature-based theme was used in the project design and consistently displayed through the building features, landscaping, signage, and graphics.

3.03 The new design allowed for a maximum visitor capacity of 4,840 per day, assuming a one-hour visit, however when taking into account visitor experience, employment opportunities and social impacts, a maximum throughput of 1,548 visitor per day was recommended.

3.04 Given the amount of water resources required, the design allowed for the redistribution of water through the recycling of wastewater for landscape irrigation. This was supplemented by the harvesting of rainfall from roof surfaces into a 22,700-litre storage tank. Significant use was also made of drought tolerant native species around the Cave.

3.05 The installation of two new ventilation shafts ensured that there were improvements in air flow / quality and that carbon dioxide and radon were contained to acceptable levels. The solar power system was expanded to supply up to 60% of the Cave’s energy requirements. This power supply was integrated into the Barbados Light and Power grid. A system of controlled lighting was installed in the security and visitor areas and a generator and fuel storage tanks were on standby for use as an emergency power supply. Overall, the infrastructure design was consistent with the Barbados Building Code and mitigated against natural disaster hazards such as hurricanes, floods and earthquakes.

3.06 The PCR highlights that the overall project design contributed positively towards the success of the project. The Evaluator concurs with this assessment and rates project design and formulation as satisfactory. However, as noted in the PCR, the design could have promoted a more active marketing and customer engagement strategy which would have positively impacted ticket sales.

Project Outputs

3.07 Project outputs were completed over a protracted implementation period of approximately eight years.

3.08 At appraisal, the project was scheduled to be implemented over an 18-month period commencing July 2006 and ending December 31, 2007. In the revised AR, the implementation period for outputs was extended by 46 months to September 2011. The construction period for the civil works component was estimated at 41 months, with substantial completion by December 2009. The construction period for roadworks was estimated at 39 weeks with a completion date in November 2010. The PSR of 2012 states that all major works on the Cave were completed by February 2012. Delays were reportedly due to problems with land acquisition.

3.09 The *Land Acquisition* component allowed for the construction of a Visitors Reception Centre, Cave ventilation systems and emergency access points. Easement rights were to be sought to secure the natural entrances of the Cave. The PCR assessed the unspecified period of delay in the acquisition of seven parcels of land as Unsatisfactory.

3.10 The *Building and Civil Works* component was originally expected to be completed in 18 months (December 31, 2007) but was extended to December 31, 2009 in the revised appraisal. The PCR states

⁸ The other options included: Option A – Minimal modification of the existing facilities; Option B – Extending the VRC/CIC Centre to include staff facilities, relocation of car park, and transforming existing car park to garden/park; Option D – Similar to Option C but locating VRC on government-owned land and transporting visitors from Sturges to the Cave (Consideration was given to use a cable car to avoid traffic congestion)

that all outputs of this component were achieved with delays spanning eight months to two years as a result of delays in land acquisition.

3.11 The project provided for the procurement of six customised electric *trams* to transport visitors into and out of the Harrison’s Cave. These were scheduled to have been in operation by February 2008. The PSR of 2010 indicates that they were acquired in November 2007 and, according to the PCR, were in operation by the end of the project.

3.12 *Road Improvement* works were estimated for completion by February 2008. This was extended to November 2010 in the revised appraisal. The PCR indicates that this component was implemented with an approximate delay of 24 months. The PSR of 2012, however, states that the contract for road works improvement was completed in November 2014 which represents a delay of approximately four years. According to the PCR, these improvements were mainly intended to facilitate pedestrian safety and the delay did not impact CBL operations.

3.13 The *Institutional Strengthening* component was intended to address gaps in the skills and competency of staff and focused on those areas where staff was expected to have basic skills which would enable them to function successfully in their work environment. In 2007 CBL began the execution of its comprehensive training programme in the following areas: Interpretive Training, Computer Applications and Customer Service, Security Officer Training, Braking and Final Drives Systems, First Aid and Conversational Spanish. The PSRs note that by project completion 16 of the 17 training courses had been completed and 8 of the 12 supervisors were trained in Supervisory Management.

3.14 *Marketing and Promotion*: Correspondence to CBL from CDB (August 2009) noted that the Strategic Marketing Plan indicated “business as usual” since it did not discuss the opportunities for development of additional markets and products, the competition within the market or the development of any tactical marketing or implementation plans to build on the proposed marketing activities.

3.15 *Geo-technical Stability Study*: The Committee set up to review the final report of the Geotechnical Stability Study (2011) was of the view that the recommendations made by the Consultant were not justified and a request was made for more in-depth analysis. This additional information was not provided by the Consultant and therefore a second study had to be commissioned. As at 2014, only the TOR for the new study was developed but no consultant had been engaged. No further information is recorded with regards to this component.

3.16 The following additional outputs were also included in the project: Pre-Investment Study; Directional Signage; Engineering Services; Project Management; Furniture and Equipment to be installed by December 31, 2009; Marketing and Promotion; Environmental Monitoring Equipment and Environmental Monitoring Consultancy Services. The PCR indicates that these outputs were satisfactorily achieved but provides no additional information or justification of individual ratings. However, based on a review of the information available on CDB’s Registry files and PSRs, the evaluator concurs with the Satisfactory rating assigned. Table 2 provides a summary of project outputs.

Table 2: Matrix of Project Outputs

No.	Planned Outputs at Appraisal	Outputs Achieved	Rating
1	Pre-investment Study	Pre-investment study satisfactorily completed	Satisfactory
2	Acquisition of 7 parcels of land	Delayed acquisition of the seven parcels of land	Unsatisfactory

No.	Planned Outputs at Appraisal	Outputs Achieved	Rating
3	Civil Works were planned for the following areas: (a) visitor reception centre, (b) tram storage building; (c) three glass fronted elevators; (d) retrofit cave interpretive centre; (e) drainage and sewerage works; (f) car park; and (g) other ancillary works	All outputs were achieved with approximately 8 to 24 months delay due to delays in land acquisition. These included: (a) construction of visitor reception centre and tram storage building; (b) installation of three glass fronted elevators; (c) refurbishment of Retrofit Cave Interpretive centre; (d) construction of drainage and sewerage works; and construction of car par and other ancillary works.	Satisfactory
4	Seven trams operational	Seven trams operational by November 2007.	Satisfactory
5	Engineering and Other Professional Services performance rated and satisfactory	Engineering and other professional services performance rated satisfactory (as per PMCW's Final Report dated December 31, 2012)	Satisfactory
6	Regional Signage	Regional signage installed	Satisfactory
7	Project Management satisfactorily performed	Project Management satisfactorily performed	Satisfactory
8	Furniture and equipment procured and installed	Furniture and equipment procured and installed	Satisfactory
9	Institutional strengthening	Institutional strengthening activities conducted	Satisfactory
10	Marketing and promotion	Marketing and promotional activities conducted	Satisfactory
11	Geo-technical stability study	Geo-technical stability study conducted	Unsatisfactory
12	Road Improvement	Road improvement implemented with approximately 24 months delay. The road improvements were mainly intended to facilitate pedestrian safety and the delay did not impact CBL operations.	Satisfactory
13	Environmental Monitoring Equipment	Environmental Monitoring Equipment installed	Satisfactory
14	Environmental Monitoring Consultancy Services performed	Environmental Monitoring Consultancy Services performed	Satisfactory
Average Rating			Satisfactory

Project Cost and Disbursements

3.17 The PCR provides a Matrix of Project Costs and Financing Plan which sets out the revised planned and actual expenditure for the project. However, the matrix does not reference the original cost at project appraisal which had been 65% lower. The 2009 AR for the additional loan notes however that while the project scope had remained unchanged, additional funding was necessary to finance cost overruns which resulted from design changes, delays in project implementation and the increased cost of specialist items associated with the civil works component of the project. These revised costs were considered reasonable by CDB.

3.18 The PCR notes that additional variations in cost resulted from: disruption of work due to weather events; temporary opening of the Cave for Cricket World Cup to take advantage of the increased visitor arrivals; inordinate excavation work, work related to a second sewerage treatment Plan; delays in land acquisition; changes in key personnel during the course of the project; and a claim in the amount of USD1.8 mn for Loss and Expenses by the Contractor as a result of the elongation of the contract. At project completion, cost overruns of 8% were experienced on the revised project cost. Table 3 provides a comprehensive summary of the projects' cost.

**TABLE 3: SUMMARY OF PROJECT COSTS AND FINANCING PLAN
(USD '000)**

Item	CDB				Counterpart			
	Original Costs	Revised Costs	Actual	Variance	Original Costs	Revised Costs	Actual	Variance
Pre-investment Study	-	-	-	-	1,367	1,367	1,367	0
Land Acquisition	-	-	-	-	904	1,839	1,839	0
Civil Works	20,734	43,547	44,351	1.8	2,853	5,992	7,604	26.9
Trams	3,644	3,619	3,340	(7.7)	1,288	2,360	2,360	0
Engineering and Other Professional Services	-	-	-	-	5,600	6,937	4,350	(37.3)
Regional Signage	20	20	-	-	-	-	-	-
Project Management	-	-	-	-	2,000	2,139	3,917	83.1
Furniture and Equipment	-	-	-	-	500	573	573	0
Institutional Strengthening	317	-	-	-	2,458	1,500	1,500	0
Marketing and Promotion	-	-	-	-	250	432	432	0
Geo-technical Stability Study	-	-	-	-	56	359	359	0
Road Improvement	2,956	3,947	4,957	25.6	-	453	453	0
Environmental Monitoring Equipment	170	170	170	0	-	-	-	-
Environmental Monitoring Consultancy Services	29	41	41	0	12	-	0	-
Total Base Costs	27,869	51,324	52,859	3.0		23,971	24,774	3.3
Physical Contingency	1,831	1,535	-	-	469	802	-	-
Price Contingency	980	804	804	0	235	648	648	0
IDC	3,051	5,765	5,765	0	-	-	-	-
Commitment Fee	-	0	0	-	-	-	-	-
Currency	-	0	454	-	-	-	-	-
Total Project Cost	33,732	59,428	59,882	0.8		25,421	25,422	0
Total Project Cost – USD	16,866	29,714	29,941	0.8		12,711	12,711	0

Disbursements

3.19 At initial project appraisal it was estimated that disbursements would occur over a 24-month period with the first disbursement by November 2006 and final disbursement by November 2008. However, the PSRs indicates that first disbursement occurred in July 2008, 20 months later than the appraisal estimate.

3.20 The PSR also notes that progress required to satisfy conditions precedent for disbursement of the additional loan was unsatisfactory. By the end of 2010, none of the funds approved under the additional loan had been disbursed as a result of the loan guarantee by GOBD not being received. The Terminal Disbursement Date was extended four times with the final disbursement date on 31 December 2014. At project closeout the undisbursed balance of USD1.7 mn was cancelled.

Conditions and Covenants, Procurement and Contractor Performance

Conditions and Covenants

3.21 CBL was unable to satisfy the conditions precedent in a timely manner. One issue mentioned in the PSR was the failure of CBL to hire suitably qualified persons for key positions despite the engagement of a Human Resources consulting firm. In addition, adequate arrangements were not put in place to acquire three small parcels of land which were required for the placement of ventilation shafts and an emergency access to CBL. On November 8, 2007, CBL made a formal request for a waiver of these conditions to allow for disbursement of funds and additional time to address these matters, however, this request was not granted since other conditions precedent such as the signature of the Loan Guarantee and the preparation of the legal opinion had also not been satisfied. The request for a Variation in Terms and Conditions was eventually tabled for approval in April 2008 to allow disbursement of the civil works component of the project. Correspondence requesting further extensions were received from CBL on August 12, 2008 for an extension to December 1, 2008 and in November 2008 for an extension to March 31, 2009. These extensions were granted by CDB in order to allow the project implementation issues to be addressed.

3.22 The PCR also notes that Cave of Barbados failed to comply with the financial reporting and audit requirements of the covenant, particularly Section 7:01, Schedule 1, Article V11 of the Loan Agreement.

Procurement

3.23 The PCR notes that there were no reports of unsatisfied procurement requirements. However, the 2012 PSR highlights that the procurement process for the roadworks was significantly protracted.

Contractor/Consultant Performance

3.24 The PCR rates Contractor's performance as Satisfactory but outlined that the final report of the Project Manager (Civil Works) highlighted that performance was hampered by a less than ideal quality workforce; a refusal to increase staff as required and inadequate supervision of subcontractors. The PSR notes that due to weak project management systems, conformance to reporting requirements was unsatisfactory and progress reports were being submitted quarterly instead of monthly.

Monitoring and Evaluation Design, Implementation and Utilisation

3.25 Environmental monitoring of ZSEC was critical to the long-term management of the Cave. A draft Environmental Monitoring and Maintenance manual provided the monitoring protocols for measurement of key parameters. In addition, supervising consultants were required to monitor compliance with the Town and Country Planning's approved environmental plan and report in accordance with stipulated reporting requirements.

3.26 The AR notes that, as a condition to the Loan, the PC was responsible for providing CDB with progress reports to facilitate monitoring of project implementation. These reports were to have included CBL's annual financial statements and reports of investment costs, maintenance and environmental reports and monthly progress reports.

3.27 CDB staff were required to monitor implementation for compliance with the environmental requirements of the contract, as well as perform supervision visits and attend CBL's Board Meetings and annual consultations.

3.28 The PCR outlines that compliance with the M&E system was unsatisfactory and its design needed to be re-examined. In addition, reporting requirements were only satisfied in part, for example, no interim reports were prepared and there was only a final report by the PC in January 2014 and the Project Manager (Civil Works) in December 2013. These reports did not address the issues of cost, quality, and timeliness of implementation.

4. EVALUATION OF PERFORMANCE (PCR ASSESSMENT AND VALIDATION)

Relevance

4.01 The PCR rates Relevance as **Highly Satisfactory**. The project was consistent with GOBD's National Strategic Plan and Tourism Development Programme which sought to ensure the sustainability of tourism development and reduce industry operating costs. The AR notes that growth in the tourism industry was expected to increase steadily, outpacing the expansion of other industries/sectors, hence, GOBD's efforts to maintain competitiveness by rehabilitating/rebuilding the country's tourism infrastructure, of which the Harrison Cave was an important component.

4.02 In addition to being consistent with CDB's strategy of tourism development within Borrowing Member Countries (BMCs), it was also consistent with CDB's strategic objectives of promoting broad-based economic growth, and its corporate priority of strengthening and modernising the infrastructure and improving the competitiveness of business enterprises within BMCs. There was also alignment with the Barbados Country Strategy which sought to contribute to: (a) the improvement and diversification of the tourism product; (b) reduction in youth unemployment and crime; and (c) the improvement of basic social services.

4.03 The project was also expected to address the issue of poverty by providing opportunities for residents to engage in small business activity, however, the PCR notes that no new goods or services were marketed by residents since project implementation.

4.04 The Evaluator concurs with the PCR's rating of **Highly Satisfactory**, since the project responded to the country's development needs.

Effectiveness

Achievement of Outputs

4.05 *PCR Assessment:* The PCR rates the achievement of outputs as **Satisfactory** in spite of the delayed achievement of planned outputs by six months to two years. In its justification the PCR states that the delays were primarily linked to land acquisition but once construction commenced, the contractor performed competently.

4.06 *Evaluator’s Assessment:* Considering the average ratings in the matrix of project outputs, the Evaluator awards a rating of **Satisfactory** which concurs with that of the PCR.

Achievement of Outcomes

4.07 *PCR Assessment:* The PCR rates the achievement of the development objective (Outcome) as “Low Probability” (i.e. Marginally Unsatisfactory). It states, as seen in Table 4 that this rating was selected in light of the fact that the planned objective of financial viability was not established, and the absence of scheduled environmental reporting was a major issue.

Table 4: Matrix of Project Outcomes

Planned outcomes at Appraisal	Outcomes Achieved as per PCR	PCR Rating
To establish a financially viable and environmentally sustainable basis for the operations at Harrison’s Cave	<ul style="list-style-type: none"> Financial viability not established. GOBD subventions have been provided every year since 2010. Continuous environmental monitoring is conducted at three locations within the Cave and one location outside. 	<p>Marginally Unsatisfactory</p> <p>Justification: financial viability not established and environmental reporting to CDB was unsatisfactory.</p>

4.08 *Evaluator Assessment:* At appraisal it was expected that adequate operating surplus and cash flow would have been realised on an annual basis to cover operating expenses, including depreciation and debt service. It was also expected that environmental monitoring indicators would show no negative changes and there would have been improvement in visitor satisfaction. Evidence provided by the PCR highlights that during the period 2013-16, the average operating deficit covered by GOBD subventions totalled BBD5.1 mn. In addition, it was noted that occasionally there had been higher than normal build-up of carbon dioxide in one area of the cave despite efforts to extract the air or pump fresh air into the cave. It could not be determined how long this issue had persisted.

4.09 The Evaluator therefore awards a rating of **Unsatisfactory** for the achievement of outcomes.

Rating of Effectiveness

4.10 **PCR Assessment:** The PCR gives a rating of Satisfactory (3) for achievement of outputs; and Marginally Unsatisfactory (2) for achievement of outcomes. Given that the Effectiveness rating is a simple arithmetic average of the ratings for project outputs and outcomes, this equates to a rating of Marginally Unsatisfactory (2.5).

4.11 **Evaluator’s Assessment:** On the basis of the composite score which resulted from the Evaluator’s ratings of Outputs (Satisfactory - 3) and Outcomes (Unsatisfactory - 1), the Effectiveness rating, calculated as an arithmetic average, is **Marginally Unsatisfactory** (2).

Efficiency

4.12 The PCR rates efficiency as **Satisfactory** with the justification that implementation of the revised scope of the project enhanced the expected economic and qualitative benefits.

4.13 With respect to cost and benefit analysis, the least cost option was employed in the selection of project options and the award of bids. This was balanced against the need to select the most appropriate project design and Consultants for the project.

4.14 At appraisal of the original loan, the economic rate of return (ERR) was estimated at 16%, however, this was re-estimated at 13% on appraisal of the additional loan due to an escalation of project cost which occurred mainly as a result of poor project implementation and contract extensions.

4.15 The PCR calculates the revised ERR at project completion as 12%. This was an indication of CBL's efforts to reduce its operating costs from BBD13.8 mn in 2013 to BBD8.9 mn in 2016. According to CDB's Performance Assessment System (PAS 2013), *projects with an ERR of ≥ 12 and ≤ 16* are rated **Satisfactory** reflecting the extent to which economic benefits outweigh the economic costs, to return an economic rate of return that exceeds the real social opportunity cost of capital⁹.

Sustainability

4.16 The PCR rates sustainability as **Unsatisfactory** due to the failure of the project to ensure financial viability of CBL operations. At Appraisal, the adequacy of cash flow was deemed a barometer for the company's financial disposition and sustainability. The project was expected to yield financial rates of return of 14%, 36% and 34% on total resources, equity before tax and equity after tax, respectively, over the life of the project.

4.17 Projections of financial viability were based on the prospective implementation of an aggressive and innovative strategic marketing plan, as well as an enhanced product offering which would result in surpluses beginning in 2010 and financial stability from 2012¹⁰. It was projected that market share would increase from 6.96% in 2005 (base year) to 20% by 2010 and 26% by 2013. Growth in visitor arrivals was expected to increase by 3% annually in 2006 to 4% over the period 2007-2012. Ticket sales¹¹ was estimated to represent over 90% of CBL's income based on an average customer arrival of 1.3 mn visitors annually.

4.18 At the time of these projections prospects for the tourism sector were favourable, however by appraisal of the additional loan, the onset of the global financial crisis had affected visitor arrivals into Barbados and resulted in declining patronage and revenues at the Cave. During the period 2011-16, visitor arrivals to the Cave did not exceed 110,000.

4.19 The projected income statement estimated a final deficit in 2010 of BBD1.3 mn and surpluses thereafter. However, the 2010 financial statement indicated a loss of BBD6.8 mn and an accumulated deficit of BBD20.5 mn. According to the PCR and PSR, this created significant doubt about the company's viability as a going concern and had negative implications for sustainability. Consequently, in a letter dated August 4, 2009, CDB requested that GOBD assume the role of Borrower for both loans. The PCR and PSR note that GOBD provided subventions to CBL every year after 2011¹². In 2019, CBL signalled its intention to CDB to lease the commercial operations of Harrison's Cave. This request was agreed in principle by CDB with the condition that the details of the loan agreement would be adhered to by the successful bidder.

4.20 The Evaluator concurs with the rating of **Unsatisfactory** on the basis that the project failed to register a profit in the years following 2010.

⁹ PAS Manual – Public Sector Investment Lending and Technical Assistance, Page 14. The real social opportunity cost of capital used by CDB is 12%.

¹⁰ CBL was expected to be repositioned as a “must see” attraction and achieve a market share of 20% long stay arrivals, 12% cruise passengers and 5% residents.

¹¹ Entrance fees were increased to from USD30 to USD40 non-residents (adults) and from USD20 to USD30 for residents (adults). Children were granted 50% off the adult fees.

¹² The average operating deficit covered by GOBD subventions during the period 2013-16 was BBD5.1 mn. Subventions from GOB increased from BBD7.4 mn in 2015 to BBD11 mn in 2016

Performance of the Borrower and Executing Agency

4.21 The PCR rates the performance of the Borrower as **Unsatisfactory**. The PSR notes that CBL did not appear to place a high priority on advancing the implementation of the project other than the building works component. Satisfaction of conditions occurred 22 months after loan approval. There were delays in filling critical management vacancies, the signature of the loan guarantee, land acquisition and other conditions which impacted on the rate of disbursements and project implementation. The road improvements and cave operations were completed behind schedule by two years and six months, respectively. In addition, monthly progress reports and quarterly reports of investment cost were not submitted in a timely manner, thereby creating difficulty in keeping track of cost.

4.22 The Back-to-Office (BTOR) of April 2009 notes that CBL had been under the management of three Boards of Directors during project implementation. In addition, the PSR highlights that coordination of project management responsibilities had been unsatisfactory and communication between the PC and CBL management had been strained due to the absence of a direct reporting relationship. It was also noted that the appointment of the PC contravened the conditions of Article V1 Section 6.03 of the Loan Agreement¹³. In addition, the PC did not fulfil reporting and communication requirements in a timely manner nor did CBL assert ownership of the project in a way which reflected the importance of the project to the performance of the organisation.

4.23 Given the above, the Evaluator concurs with the rating of **Unsatisfactory**.

Performance of the Caribbean Development Bank

4.24 The PCR rated the performance of CDB as **Satisfactory** with the justification that there was regular interaction with CBL, and implementation support was provided via a Project Launch Workshop in May 2007. The PCR also notes that the PSRs and BTORs were detailed and timely and written reminders were sent to CBL when required.

4.25 The Evaluator also rates the performance of CDB as **Satisfactory** based on supervision by CDB staff throughout project implementation and the fact that the Bank quickly approved the request for an additional loan by CBL of USD12.85 mn to assist in financing cost increases associated with implementation of the project. CDB also provided realistic conditions for first disbursement of the additional loan funds which recognised the challenges experienced by the Borrower and GOBD in having land acquisition matters completed.

5. OVERALL ASSESSMENT

5.01 Based on the foregoing analysis and available data, the Evaluator assigns a rating of **Marginally Unsatisfactory** to overall project performance. The overall project performance rating was determined by separately evaluating and ranking the four core evaluation criteria: Relevance (Satisfactory); Effectiveness (Marginally Unsatisfactory); Efficiency (Satisfactory) and Sustainability (Unsatisfactory). Each core criterion was assigned a whole-number rating on a scale of 1 to 4. The overall performance score of the intervention is an arithmetic average of the total scores for the core criteria and ranges between 1 and 4¹⁴. Both PCR and PCVR concur on the individual ratings of the core criteria.

¹³ The Article stipulated that the PC was to be assigned exclusively to the CBL project and not hold any other substantive position. However, the PC was also the Director of an independent Government agency (the National Heritage Department). In his role as a Director, the PC had the ability to exercise control over the CEO of CBL. This presented a governance issue. A new PC was appointed toward the end of 2009.

¹⁴ Paragraph 2.62 of CDB's Performance Assessment System (PAS) 2013.

5.02 Details of the ratings and justification for differences between those of the PCR and Evaluator are presented in Table 5.

TABLE 5: SUMMARY RATINGS OF CORE EVALUATION CRITERIA AND OVERALL ASSESSMENT OF THE PROJECT

Criteria	PCR	OIE Review	Reason if any for Disagreement/Comment
Relevance	Satisfactory	Satisfactory	
Effectiveness	Marginally Unsatisfactory	Marginally Unsatisfactory	
Efficiency	Satisfactory	Satisfactory	
Sustainability	Unsatisfactory	Unsatisfactory	
Composite (Aggregate) Performance Rating	Marginally Unsatisfactory	Marginally Unsatisfactory	
Borrower & EA Performance	Unsatisfactory	Unsatisfactory	
CDB Performance	Satisfactory	Satisfactory	
Quality of PCR	-	Marginally Unsatisfactory	The Evaluator rates the quality of the PCR as Marginally Unsatisfactory due to inadequate data provided in support of ratings. (Evaluator supplemented through file review.)

Lessons

5.03 The following lessons, considered at appraisal stage, were drawn from the experiences of CDB and other multilateral development banks in the area of tourism-related infrastructure improvements:

- (a) It is necessary to involve key stakeholders including business operators and residents of the affected communities, throughout the entire project cycle
- (b) Designs should be finalised before the estimation of capital costs so as to reduce changes in project scope and increased cost during construction
- (c) An experienced and dedicated Project management Team is critical to minimise project costs and time overruns
- (d) Adequate maintenance of the facilities and the roads is necessary in order to preserve the design of the project.

5.04 Lessons from PCR:

- (a) The Harrison Cave project presented a challenging mix of infrastructure improvement, community engagement, environmental management, institutional strengthening, market development and income generation. All of these elements had to be risk managed and advanced together for the project to be successful. While problems were encountered in each, and identified by CDB staff in supervision reporting, it is not clear that sufficient senior management and political level engagement were deployed to resolve them. Critically, the skills and effort deployed in business and institutional development appear not to have been sufficient to turn around what was already a challenged parastatal entity. Training courses alone were not enough. In future projects of this nature, institutional and business development support will need to play a stronger role alongside technical and engineering effort.
- (b) Land acquisition should ideally be completed prior to project initiation. When this is not possible there is heightened risk of implementation delay and cost overruns, as experienced in this project. In cases where it is not possible to delay implementation until acquisition is either complete or assured, then detailed scenario planning and contingent contractual measures should be developed, actively monitored, and deployed as soon as obstacles are encountered.
- (c) For CDB-funded projects, the contracts of consultants, project managers, and responsible executing entities should, and ordinarily do, spell out requirements for progress, completion, and ESG reporting. However, these are not always observed. Incentives and/or penalties for doing so should be included in contractual arrangements and enforced. As well, performance assessment of CDB staff should reflect whether adequate action and follow-up have been undertaken to ensure that the reporting requirements of entities under their supervision have been met.
- (d) The delivery of a CDB project termination letter to a Recipient of CDB financing should be preceded by a checklist confirmation from the CDB project supervisor that the reporting requirements set out in the particular loan agreement and other monitoring, evaluation and supervision activities are completed and that reports are received and stored at CDB.

6. COMMENTS ON PCR QUALITY

6.01 The Evaluator rates the quality of the PCR as *Marginally Unsatisfactory* as a result of key information gaps in the report

7. DATA SOURCES FOR VALIDATION

7.01 The primary data sources for this validation exercise were CDB's AR and Loan Agreement; CDB's PSRs; and CDB's Registry files in respect of the project.

8. RECOMMENDATIONS FOR FOLLOW-UP

8.01 CDB should follow up on the arrangements to be put in place by CBL with regard to the leasing of the Harrison Cave.

