



# An Examination of the DWNP's Integrated Database Development

## Final Report

Submitted to:

Department of Wildlife and National Parks, MCI, Government of Botswana  
United States Agency for International Development, RCSEA  
BIOFOR Task Order 802

Submitted by:

Chemonics International Inc.

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## TABLE OF CONTENTS

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|  |   |        |
|--|---|--------|
| DWNP INTEGRATED DATABASE SPECIALIST                                    |   | 1      |
| A. Introduction  |   | 1      |
| B. Background  |   | 1      |
| C. Why Integrated Database Development?                                |   | 2      |
| D. Report on Main Activities   |   | 2      |
| D1. Developing Priorities for the Current Technical Assistance (TOR )1 |   | 2      |
| D2. Documentation of Existing Databases (TOR 2                         |   | 3      |
| D3. Technical Assistance for Current Databases (TOR 3)                 |   | 4      |
| D4. Awareness Raising Among Senior Managers (TOR 4)                    |   | 9      |
| D5. Development of a Framework for Database Integration (TOR 5)        |   | 9      |
| D6. Production of Training Guidelines (TOR 6)                          |   | 10     |
| E. Discussion and Recommendations                                      |   | 11     |
| F. Acknowledgements  |   | 15     |
| <br>   |   |        |
| ANNEX A  | TERMS OF REFERENCE  | A-1    |
| ANNEX B  | INCEPTION REPORT  | B-1    |
| ANNEX C  | REVISION NOTES FOR DEVELOPING METADATA FORMS WITH IDEALIST SOFTWARE                         | C-1    |
| ANNEX D  | EXAMPLE OF TREND ANALYSIS FOR KEY CBO DATA  | D-1    |
| ANNEX D(1)   | REVISION NOTES FOR THE CREATION OF CBO MONITORING GRAPHS USING MS ACCESS REPORTS AND CHARTS | D(1)-1 |
| ANNEX D(2)   | REVISION NOTES FOR DEVELOPING QUERIES IN MS ACCESS  | D(2)-1 |
| ANNEX E  | EXAMPLES OF REPORTS DEVELOPED FOR THE QUOTA DATABASE  | E-1    |
| ANNEX F  | INTRODUCTION TO USING DWNP DATABASES: REVISION NOTES FOR SENIOR MANAGERS                    | F-1    |
| ANNEX G  | FRAMEWORK FOR DEVELOPING DATABASE INTEGRATION AT DWNP                                       | G-1    |
| ANNEX H  | TRAINING GUIDELINES FOR DWNP DATABASE MANAGEMENT AND MAINTENANCE                            | H-1    |

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## Executive Summary

DWNP collects a wide range of biophysical and socioeconomic data and there is a strong need to find ways of integrating or sharing this data so that management and policy decisions can be made in both a wildlife and community context.

The consultant was engaged for 26 days to provide support to selected DWNP databases and assist DWNP tackle various issues involved with database integration. The technical support was carried out during three visits to Botswana in February, May and June 2000. The technical assistance specified for this contract was designed to build on the work of previous consultants (Stuart Hill and Wills, 1999) who conducted a wide ranging review of information systems and databases in DWNP and presented a conceptual design for the development of a centralised integrated database system.

It is clear from a review of the current databases that despite the development of the conceptual design for an integrated database system (Stuart Hill and Wills 1999) DWNP is still a long way from having a functional integrated database system. However, the prototype information system developed during that consultancy had encouraged the individual development of some of the databases and there has also been some significant advances in computing and information system development over the last 10 months at DWNP with a network installed at the head quarters building and new computers and peripheral equipment recently purchased. These advances show real progress in moving towards an improved information system and there appears to be an opportunity to continue this growth and foster the integration of these databases.

The current technical assistance was designed to enable DWNP to take the first steps towards the development of integrated database systems by; providing support for the database managers to solve technical problems in the existing databases; developing a metadata base for existing data, advising database managers on how to integrate databases; developing training guidelines and giving short introductory training courses to senior managers. The following progress was made over the period of the consultancy:

- A. An initial period of consultation produced an assessment of the current status of the individual databases and priorities for the current technical assistance which were developed into a workplan for the consultants visits. An inception report was produced for the consultancy.
- B. Support was given for the documentation of existing data at DWNP and the use of the metadata database. Two DWNP staff were trained in the use of the prototype metadata database and in the use advanced of the idealist software to modify and further develop the database.
- C. Technical assistance was provided to two main databases, the CBO and Quota databases. For the CBO database assistance was concentrated on solving problems with the existing database and providing training in the use of analysis techniques to monitor data quality and the trends in CBO performance. For the Quota database assistance was concentrated on converting the previous spreadsheet data to a database, training staff in the use of the prototype database, a general introduction to the use of MS access and refining the database to match the requirements of the DWNP staff.
- D. An awareness raising exercise was carried out on a "one to one basis" with senior managers to introduce them to databases currently under development at DWNP and discuss the need for an integrated database system to match the monitoring and information requirements of the department.

- E. Assistance was provided on the integration of existing databases and how a realistic framework for integration can be developed by DWNP staff. Jointly with DWNP staff the potential for integration and current problems with existing databases was discussed. A framework for database integration was then proposed which aimed to take advantage of existing strengths in DWNP database development and set out a realistic plan for phased development of an integrated monitoring system.
- F. In consultation with DWNP staff guidelines for training DWNP staff in database management and maintenance were drawn up to support the current needs of the department and support the future development of integrated database systems and monitoring at the department.

Following on from the experience gained during the consultants visits a number of recommendations are made in the report.

1. Appoint staff member responsible for the development of the integrated database system.

DWNP need to actively manage and control the development of individual databases and the development of an integrated database system. This requires a staff member to lead the process and be responsible for ensuring that the activities are carried out and targets are met.

2. Workshop on monitoring and information needs

DWNP should hold an internal workshop to discuss the monitoring and information needs of the department and prioritising the development of individual database and the overall integrated database/monitoring system.

3. Prioritise staff training and ensure adequate budget for retraining

DWNP staff require the skills to maintain and operate existing databases and the development of new databases and integration in the future. Training for all database managers and support staff as indicated in the training guidelines (Appendix H) should be considered a high priority for assistance.

4. Increased support for developing databases and information systems

DWNP requires a resource person who can provide internal assistance to all the DWNP databases in problem solving, database maintenance and the further development of databases. It is recommended that a suitable staff member (such as the Head of the Computer Unit) be trained to take on the role of database support person within the department.

5. Implement plan presented in the framework for database integration

It is recommended that there should be a phased development of integrated monitoring and database development – concentrating on some core databases and expanding the system when new databases are considered ready. The framework for database integration presented in Appendix G gives a flexible and phased plan which is recommended as a model for growth of the system from its current status.

6. Initiate the development of other databases which are urgently needed

Once the information needs of the department have been prioritised resources need to be made available to initiate the development of priority databases. There is a clear need to develop a poaching database to support wildlife law enforcement and supply valuable data to Community Services Division.

7. Budget for external assistance to support current databases and the development of integrated monitoring system

External assistance to from a local consultancy company will be required to support the further development and maintenance of databases. It is recommended that DWNP budget for the provision of external assistance to help the Computer Unit in database development and integration

8. Further development of the BASIS system

The BASIS system represents an excellent model for the development of spatial data integration through the use of GIS. It is recommended that the BASIS system be used as platform for wider data integration and that DWNP actively persue the further development of the BASIS system to include the ability to include CBO and Quota data. This would require a further contract with the consultants who designed the BASIS system and an approach could be made to the EU to fund this additional work.

9. Develop back up system for digital data

As more and more data is stored on computers at DWNP it is essential that a regular automated back up system is installed to guard against loss or corruption of data.