

Inception Report on Contract No. PIOT/633-0999-00142

BUILDING A NATIONWIDE SELF-SUSTAINING PROGRAM FOR TRAINING

IN

GEOGRAPHICAL INFORMATION SYSTEMS (GIS) IN BOTSWANA

Presented to USAID/Botswana

by

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BUILDING A NATIONWIDE NETWORK FOR TRAINING IN GIS IN BOTSWANA

I. INTRODUCTION

USAID/Botswana provided funds for the calendar year 1994 under contract No. PIO/T 633-0999-00142 to conduct the first of a two year program to advance the development of GIS in Botswana. Under the scope of work for this contract, a team led by Dr. Musisi Nkambwe as the vendor will:

- a. Develop appropriate training materials based upon actual programs and projects now under way with the University of Botswana and the existing GIS training program.
- b. From students who are already in the GIS Training program, select a nucleus of local technicians and scientists to be trained in advanced GIS methodology, using ARC/INFO, so that they can form a national network of GIS trainers to service their own organizations' needs as well as those of other agencies in the SADC region.
- c. Promote and deliver a National Conference on GIS using individual projects (including GIS applications by the future trainers) as evidence of the on-going use and practicality of GIS in Botswana.
- d. Develop and deliver an advanced "train the trainers" GIS course.

II. METHODS OF IMPLEMENTATION

The methods for implementing the tasks under this contract are guided by the scope of work outlined above.

- a. Training materials

Training materials and GIS exercises will be based on two sets of data from the village of Tlokweng on the rural-urban fringe of Gaborone, and an area along the Boteti River in the Central District. The two databases are connected to two major research projects currently being conducted in the Department of Environmental Science (DES), University of Botswana (UB), on land use competition (Tlokweng) and on environmental monitoring (along the River Boteti). Between them the two databases are very relevant for training participants under this contract and, in general reflect the range of interests of the trainees as is expressed in the projects the trainees have conducted previously during their participation under the in-service training program at the University of Botswana. The training materials will be distributed to selected institutes of higher learning in the Southern African Region.

b. Selection of trainees

Discussions have been conducted with various Government of Botswana Departments and NGO's whose officers have previously been involved in the GIS training program at UB. Enthusiasm is particularly high for participation in the training to be conducted under this contract. A list of the trainees and their various projects will be presented in the next report.

c. A National Conference with individuals' projects

It is planned that there will be a three-day National Conference at which trainees to participate in this program will present results from their projects currently under way. The timing of the conference will depend on when the on-going projects will be ready for presentation. It has not been possible at this time to make a good estimate of the time required for the completion of all the projects expected to be presented, but it will probably not be later than the beginning of August, 1994. The National Conference will precede the "train the trainers" GIS course. Specific dates for both the course and the conference will be presented in the next report on this contract.

A request has been presented to the Department of Wildlife and National Parks (DWNP) to finance the National Conference so that it can be held in the Oasis Motel. A favourable response is expected based on discussions on this subject with the Deputy Director of DWNP.

d. The "train the trainers" GIS course.

A training course to start a nationwide network of trainers will be conducted soon after the National Conference as stated above. The course is specifically intended to provide training in:

i. The use of a vector-based GIS software

The trainees under this contract have been previously introduced to raster-based GIS using IDRISI. This course will build on the previous experience of the trainees to introduce vector-based GIS using ARC/INFO. Since the National Cartographic and Remote Sensing Committee, Botswana's committee that has been given the mandate to oversee the development of GIS in the country, has decided that ARC/INFO will be the standard GIS software, training prospective trainers on ARC/INFO is very appropriate.

ii. Designing a GIS project

Many GOB departments and NGO's are going through the critical stages of designing GIS projects. Training on this aspect of GIS is critical for the overall development of GIS in the country. Trainees will have carried out a project under the previous program (GIS Level

III) and will have completed a project they will present at the National Conference. This previous experience will be used as the basis for further training on designing a GIS project. Of the two databases (mentioned above in IIa), the second database from the area along River Boteti will be used in the last days of the course to allow trainees to combine data interpreted from satellite imagery with other data compiled for the area to design a GIS on environmental monitoring. After the course each trainee will design his/her own GIS project within the overall program of his/her department.

iii. Understanding a sharable GIS database

Current plans for GIS development in Botswana encourage exchanging information among developers of GIS especially different departments or units in ministries. The majority of trainees under this contract will be responsible for building or overseeing the building of sharable databases in Botswana. The training will stress the precautions and requirements of shareable databases.

iv. Communicating the appropriate use of GIS

Trainees under this contract will make the first group of trainers in what will eventually be a national network of trainers in GIS. The training manual will be designed in such a way that it can be easily used as a basis for instruction, with pages from which transparencies may be made for overhead projections for training others at the trainees' duty posts. Sample pages and the format of the manual will be presented in the second report on this contract.

III. CURRENT LEVEL OF MOBILIZATION

Since this contract was awarded, two main aspects in initiating work for the project have been concentrated on:

a. Compiling spatial databases.

Compiling spatial databases stated in IIa above has been started. The database on the village of Tlokweng and the Batlokwa Tribal Territory on the outskirts of Gaborone currently includes data on the villages' growth and expansion, land use, soils, individual residential plots and their periods of allocation, vegetation, and the road network. The Batlokwa Tribal Territory database will be the main training database for the "train the trainers" course. The second database based on data from the Rakops area along the River Boteti in Central District currently has data on vegetation change, hydrology of the area, soils, settlements and their populations at different points in time, and land use.

b. Discussions with Heads of Units/Departments

Discussions have been conducted with GOB Departments and NGO's that will participate in both the National Conference and the "train the trainers" GIS course. The discussions with prospective GOB Departments and NGO's have been directed through Heads of Units or Departments in an effort to broaden awareness on the concept of a nationwide network of trainers. Enthusiasm to participate in the project has been high with all Heads contacted, and advice to make the project more effective has been received especially from the Department of Wildlife and National Parks (DWNP) (Mr. Nchunga, Deputy Director); Ministry of Agriculture (MoA) (Mr. Mulalu, GIS Officer); and the Ministry of Local Government, Lands and Housing (Mr. V. Ranshabeng).

IV. CHANGE IN SCHEDULE OF TIMING DELIVERABLES.

This Inception Report should have been delivered to USAID/Botswana on January 31, 1994. However, the vendor received this contract in mid-February, and as a result it was impossible to keep the original deadline. It is necessary to re-schedule the timing of other deliverables. A request is hereby made that the second report originally due by the end of March, 1994, should be delivered on or before 25 April, 1994. In the second report more definite dates for the National Conference and the "train the trainers" GIS course will be given as explained above.

V. STATEMENTS EXPECTED WITH THIS REPORT NOT DELIVERED

In awarding this contract, USAID/Botswana directed that the Inception Report should be accompanied by documented proof of support for the National Conference from the Government of Botswana, and permission to use the GIS Laboratory from the University of Botswana (UB). Although verbal promise has been given from DWNP for the former, it has not been possible to obtain documentary proof from the Department at this time. For permission to use the GIS laboratory at UB, this report was considered useful for the Department to consider the request since it would be making a substantial contribution by not charging for the use of up to 14 computers for 28 working days. USAID\Botswana may therefore wish to withhold payment expected by the vendor at the presentation of this inception report until the documentary proof is forwarded.

VI. PERSONNEL.

The personnel to carry out this project remain (as in the original proposal) Dr. Musisi Nkambwe, and Dr. C. Van der Post, both of the Department of Environmental Sciences, University of Botswana. Both of these have been involved in the in-service GIS training program supported by USAID/Botswana over the last three years.