REFERENCES


Development Lessons from Applied environmental economics (pp. 352-369), UCT Press. Cape Town.


Department of Water Affairs (2003), A Mid-Year Report, Gaborone.


Miani, P.F and Fajardo, M.D.P.P (2001), Integration of Biodiversity into Environmental Assessment Procedures: Columbia Country Case Study: UNDP/UNEP/GEF.


Republic of Botswana (1999), An Assessment of the Economic Impact of Tourism in Botswana: Botswana Tourism Development Programme Project No.7 ACP. BT. 4/No. 6 ACP BT 44.

Republic of Botswana (1997), Community Based Natural Resources Management Policy. A paper on the promotion of natural resource utilization, preservation and management.


Republic of Botswana (1968), Tribal Land Act (Cap.32:02)


Roodt, V. (undated), The Shell Field Guide to the Common Tress of the Okavango Delta and Moremi Game Reserve, Shell Botswana.


US Army Waterways Experimental Station (1989), Environmental Effects of Dredging: Economic Valuation of Wetlands, EEDP, Vicksburg,


ANNEX

Household Questionnaire

1. Households characteristics

Age _____ Sex ____ Occupation_____  Years of schooling ____ Family size _____

2. Are you employed?
   01Yes [ ]  02 No [ ]

3. If yes how?
   _______________________________

4. What is your source of income?__________

   Income: 01 < 100 [ ]
   02 100-200 [ ]
   03 200-300 [ ]
   04 400-500 [ ]
   05 500-600 [ ]
   06 >600 [ ]

5. Which of the following resources do you harvest?

<table>
<thead>
<tr>
<th>Resources</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palm leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuelwood</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A REEDS

A1. Which species of reeds do you harvest and how often do you harvest?

<table>
<thead>
<tr>
<th>Species harvested</th>
<th>Where harvested</th>
<th>Frequency of harvesting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B2. What quantities do you harvest per day?

<table>
<thead>
<tr>
<th>Species</th>
<th>Quantities harvested (bundles)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A3. Who harvests the reeds in this household?

01 Women 02 Men 03 children 04 Other (specify)

A4. What equipment/material do you use in the harvesting of reeds?

01 _______________________

02 _______________________

03 _______________________

A5. How long does it take you in hours or days to complete one harvest trip?

___________ hours

A6. How far away do you harvest?

___________

A7. How do you transport the harvested reeds to your home?

01 Own transport 02 Hired transport 03 shared transport 04 Other (specify)
A8. If you use own transport, what means?
__________________

A9. If you use hired transport how much do you usually pay per load?
___________ Pula/ load

A10. Of the amount of reeds that you harvest, do you sell any?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Yes</td>
<td>(&gt;&gt;A11)</td>
</tr>
<tr>
<td>02 No</td>
<td>(&gt;&gt; A12)</td>
</tr>
</tbody>
</table>

A11. If yes, please complete the table below:

<table>
<thead>
<tr>
<th>Reeds species</th>
<th>Where sold</th>
<th>Price</th>
<th>Quantity sold</th>
<th>When sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A12. Other than selling, what do you use the reeds for?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Fence</td>
<td></td>
</tr>
<tr>
<td>02 House construction</td>
<td></td>
</tr>
<tr>
<td>03 Fish baskets</td>
<td></td>
</tr>
<tr>
<td>04 Fish wall traps</td>
<td></td>
</tr>
<tr>
<td>05 Fish spears</td>
<td></td>
</tr>
<tr>
<td>06 Fishing rods</td>
<td></td>
</tr>
<tr>
<td>07 Handicrafts</td>
<td></td>
</tr>
</tbody>
</table>

B. GRASS

B1. Which species of grass do you harvest and how often do you harvest?

<table>
<thead>
<tr>
<th>Species</th>
<th>Where harvested</th>
<th>Frequency of harvest</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B2. What quantities do you harvest per day?

<table>
<thead>
<tr>
<th>Species</th>
<th>Quantities harvested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B3. Who harvests the grass in this household?

- 01 Women
- 02 Men
- 03 Children
- 04 Other (specify)____________

B4. What equipment do you use in the harvesting of grass?

- 01 _____________________
- 02 _____________________
- 03______________________

B5. How long does it take you in hours or days to complete one harvest trip?

______________

B6. How far away do you harvest?

______________

B7. How do you bring the harvested grass to your home?

- 01 use own transport
- 02 hired transport
- 03 Shared transport
- 04 Other (specify)__________

B8. If you use own transport, what means?

_________________

B9. If you hire transport, how much do you usually pay per load?

_____________ Pula/load

B10. Of the amount of grass that you harvest, do you sell any?

- 01 Yes  (>>B11)
- 02 No  (>>C12)
B11. If yes, please complete the table below:

<table>
<thead>
<tr>
<th>Reeds species</th>
<th>Where sold</th>
<th>Price</th>
<th>Quantity sold</th>
<th>Date last sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B12. Other than selling, what do you use the grass for?

01 thatching
02 weaving
03 Other (specify)_________________

B13. How much of this is used in your own household?


C. PALM LEAVES

C1. Where do you harvest and how often do you harvest palm leaves?

<table>
<thead>
<tr>
<th>Where harvested</th>
<th>Frequency of harvesting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C2. What quantities do you harvest per day?

<table>
<thead>
<tr>
<th>Quantity harvested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C3. Who harvests palm leaves in this household?

01 Women  02 Men  03 Children  04 Other (specify)______

C4. How many hours or days does it take you to complete one harvest trip?

__________ hours

C5. How far away do you harvest?

__________
C6. Of the amount that you harvest, do you sell any of them?
01 Yes □ (>>C7) 02 No □

C7. If yes, please complete the table below:

<table>
<thead>
<tr>
<th>Where sold</th>
<th>Price</th>
<th>Quantity sold</th>
<th>Date last sold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. WILD FRUITS

D1. Which wild fruits do you harvest and what is the frequency of harvesting?

<table>
<thead>
<tr>
<th>Species</th>
<th>Where harvested</th>
<th>Frequency of harvesting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D2. What quantities do you harvest per day?

<table>
<thead>
<tr>
<th>Species</th>
<th>Quantities harvested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D3. Who harvests the plants in this household?
01 Women □ 02 Men □ 03 Children □
04 Other ________

D4. How many hours or days does it take you to complete one harvest trip?
__________

D5. How far do you harvest?
__________
D6. Of the amount that you harvest, do you sell any?
   01 Yes (>>next) 02 No (>>E12)

D7. If yes, please complete the table below:

<table>
<thead>
<tr>
<th>Plant</th>
<th>Where sold</th>
<th>Price</th>
<th>Quantity sold</th>
<th>Date last sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D11. Of the amount that you harvest do you use some at home?
   01 Yes (>>next) 02 No (>>E14)

D12. How much is used at home?
   __________

E. MEDICINAL PLANTS

E1. Which species of medicinal plants do you harvest and how often do you harvest?

<table>
<thead>
<tr>
<th>Species</th>
<th>Where harvested</th>
<th>Quantity sold</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E2. What quantities do you harvest per day?

<table>
<thead>
<tr>
<th>Species</th>
<th>Quantities harvested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E3. Who harvests the plants in this household?
   01 Women 02 Men 03Children

F4. What equipment do you use in the harvesting of medicinal plants?
E5. How long does it take you in days or hours to complete one harvest trip?


E6. How far away do you harvest?


E7. Of the plants that you harvest, do you sell any?

01 Yes
02 No

E8. If yes, please complete the table below:

<table>
<thead>
<tr>
<th>Plant</th>
<th>Where sold</th>
<th>Priced</th>
<th>Quantity sold</th>
<th>Date last sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E9. Have you consulted a traditional doctor in the past three months?

01 Yes
02 No

E10. For what purposes did you consult doctor?


E11. Did he/she give you medicinal plants?

01 Yes
02 No

E12. What plant medicine did he/she give?


E13. How much did you pay for consulting?


E14. How much did you pay for the medicine?
________________

E15. How often do you see a traditional doctor in a month?
________________ times

F FUELWOOD

F1. Which species of fuelwood do you harvest and how often do you harvest/collection?

<table>
<thead>
<tr>
<th>Species harvested</th>
<th>Where harvested</th>
<th>Frequency of harvesting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F2. What quantities do you harvest/collection per day?

<table>
<thead>
<tr>
<th>Species harvested</th>
<th>Quantities harvested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F3. Who harvests/collection fuelwood in this household?

01 Women 02 Men 03 Children 04 other specify __________

F4. How is fuelwood harvested/collectioned?

01 Picking up dead wood 02 Cutting dead trees 03 Cutting live trees 04 Other (specify) __________

F5. What equipment do you use in the harvesting of fuelwood?

01 ____________________ 02 ____________________ 03 ____________________
F6. How long does it take you in hours or days to complete one harvest trip?

________

F7. How far away do you harvest?

________

F8. How do you bring the fuelwood to your home?

01 use own transport  
02 shared transport  
03 hire transport  
04 other (specify) __________

F9. If you use own transport, what means?

________________________

F10. If you use hired transport, how much do you usually pay per load?

________

F11. Of the amount of fuelwood you harvest/collect, do you sell any?

01 Yes  (>>F12)  02 No  (>> F13)

F12 If yes, complete the following information:

<table>
<thead>
<tr>
<th>Species</th>
<th>Where sold</th>
<th>Price</th>
<th>Quantity sold</th>
<th>When sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F13. Of the fuelwood that you harvest do you use some for cooking and heating?

01 Yes  (>>F14)  02 No  (>>H15)

F14. How much of a day’s harvest is usually reserved for this purpose?

________

G. Preservation of the Okavango Delta.

1. Please keep in mind that the following question is a hypothetical experiment intended to provide an economic measure of how strongly you value the preservation of the Okavango delta.
Question: The Okavango River is increasingly being viewed as a source of water for development by the governments of Namibia, Botswana and Angola. In 1996 the Namibian government proposed to abstract about 17 million cubic metres of water annually from the Okavango River. Hydrological simulations indicate that as a result of water abstraction, the maximum loss of inundated area would be approximately 7.5 square kilometres. This loss is equivalent to 0.1% of the total inundated area of the delta. Assume that the Permanent Okavango River Basin Commission (OKACOM) wishes to establish an Okavango River Conservation fund (ORCOF) with the main aim of supporting activities that will help in conservation of the Delta. Assume also that the funds will be used in the best possible way you can think of. Would you be willing to contribute to this fund?

Would you be willing to contribute to such a fund?

01Yes  02No

2. If you would be willing to contribute, how much would you be willing to contribute as one time payment to such a fund? Pula____________________

3. If you would not be willing to contribute to such a fund, please state the reason(s) for not being willing.

1_________________________________
2_________________________________
3_________________________________
4_________________________________

4. Thank you very much for your time Do you have any comments or questions in relation to what we were asking you?

____________________________________________________________

Tourists Questionnaire

1. Background

Country traveling from_____________________ Nationality__________________
Sex:_______ Age________ Family size________ Profession________
Years of schooling________

2. Where are you currently a resident?
    Place ______________ Country____________

3. How long will you be (or have you been) away from home?
    _______________ days

4. Which other destinations in Botswana/elsewhere have you visited?
    01________________    02_______________ 03________________

5. What mode of transport did you use to come to the delta?
    01 Air                  02 Road                                        03 Other specify_____________________

6. Have you visited the delta before?
    01 Yes 02 No

7. If yes, how many times during the past 10 years?
    ________________ times

8. What is/has been the purpose of your trip?
    01     Wildlife viewing
    02 Photographing
    03 Hunting
    04 Visiting historical sites
    05 Sport and recreational fishing
    06 Bird watching
    07 Horseback safaris
    08 Elephant back safaris
    09 Other (Please specify)_____________

9. How much of your time have you allocated to recreation related activities in the delta?
    ____________ days
10. In what accommodation are you staying?
   01 Hotels ☐  02 Game lodges ☐  03 Hunting camps ☐  04 campsites ☐
   05 Other specify__________

11. What is the total cost of your holiday? (Please specify the currency)
    ______________________

12. How much of these costs have you spent in visiting the delta in Botswana?
    ______________________ Pula

13. Please indicate, if possible, a break-down of all your costs including park entry fees, vehicle fees and
    camping fees, and whether these were paid separately or as an accommodation package

<table>
<thead>
<tr>
<th>Cost item</th>
<th>Cost (Pula)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

14. Please approximate your annual income
    ______________________ Currency___________

15. What is the most important aspect of the delta that you have valued most and why?
    ______________________________________
    ______________________________________

16. Do you consider your trip worth the money spent?
    01 Yes ☐ (Q>>>18)  02 No ☐ (>>17)

17. If not, and assuming you were to return on the same trip, please suggest a value in relation to your
    present costs by which you think your costs should be reduced to induce you to return?
    *The present costs should be reduced by
    01 10% ☐  02 20% ☐  03 30% ☐  04 40% ☐  05 50% ☐  06 >50% ☐

18. If yes, please suggest a value in relation to the present cost level that you will consider high enough to
    have prevented you from coming.
    *I would not have come if the present costs level were higher by:
19. How much of the Okavango delta do you think should be preserved?
   01 all of it  02 half  03 only one quarter  04 none

20. Please keep in mind that the following question is a hypothetical experiment intended to provide an economic measure of how strongly you value the preservation of the Okavango delta.

Question: The Okavango delta is increasingly being viewed as a source of water for development by the governments of Namibia, Botswana and Angola. In 1996 the government of Namibia proposed to abstract 17 million cubic metres annually from the Okavango River. Hydrological simulations indicate that as a result of water abstraction, the maximum loss of inundated area would be approximately 7.5 square kilometres. This loss is equivalent to 0.1% of the total inundated area of the delta.
Assume that the Permanent Okavango River Basin Commission (OKACOM) wishes to establish an Okavango River Conservation Fund (ORCOF) with the aim of supporting activities that would help in the conservation of the Okavango Delta. Assume also that the funds will be used in the best possible way you can think of. Would you be willing to contribute to this fund?
   01 Yes  02 No

21. If yes, and given your annual income and other regular expenses, how much would you be willing to contribute as a one-time payment to this fund? : Pula___ or any other currencies_____

22. If no, kindly indicate the reason(s) for not being willing to contribute?
   i)_________________________________________________
   ii)________________________________________________
   iii)________________________________________________

We thank you very much for your assistance in this important study. We would be grateful if you could mail the questionnaire to us using the self addressed envelop or leave the questionnaire at the reception of the hotel /lodge, or leave it with Air Botswana personnel at Maun Airport.