

Payments for ecosystem services in an African protected area: exploring issues of legitimacy, fairness, equity and effectiveness

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APPENDIX 1 Household Survey in Nyungwe National Park

Village

Household ID

GPS Coordinate

Cell

Date of Interview

Interviewer ID

Verification of questionnaire (by supervisor)

Section 1 Household roster

Person interviewed is preferably the head of household. If he/she is not available find a principal respondent to answer the questions in his/her place. The person selected must be a member of the household being interviewed who is able to give information on the other household members.

1.1 Respondent name

1.2 ID Code

A. I would like to make a complete list of all the people who normally live and eat their meals together in this home. Please begin with the head of household, spouse/s (or partners) and his/her children in order of age.

ALWAYS WRITE DOWN THE HEAD OF HOUSEHOLD FIRST WITH ID CODE 01 FOLLOWED BY HIS/HER SPOUSE AND THEIR CHILDREN IN ORDER OF AGE. IF THERE IS MORE THAN ONE WIFE, START WITH THE FIRST WIFE FOLLOWED BY HER CHILDREN IN ORDER OF AGE, FOLLOWED BY THE SECOND WIFE AND HER CHILDREN IN ORDER OF AGE, AND SO ON. FOLLOWING IMMEDIATE FAMILY, INCLUDE ANY ADDITIONAL PERSONS RELATED TO THE HEAD OF HOUSEHOLD OR TO SPOUSE WHO NORMALLY LIVE AND EAT THEIR MEALS IN THE HOME. NEXT LIST ADDITIONAL PERSONS NOT RELATED TO THE HEAD OF HOUSEHOLD OR THE SPOUSE BUT WHO NORMALLY LIVE AND EAT THEIR MEALS IN THE HOUSEHOLD, E.G. SERVANTS WHO ARE NOT RELATIVES.

FINALLY LIST ANY OTHER PERSONS WHO ARE NOT NOW PRESENT BUT WHO NORMALLY LIVE AND EAT THEIR MEALS IN THE HOUSEHOLD, E.G. SOMEONE WHO IS STUDYING ELSEWHERE, WHO IS SEEKING MEDICAL TREATMENT, OR WHO IS WORKING ELSEWHERE.

THE FOLLOWING ARE STANDARD CODES TO BE USED THROUGHOUT THE QUESTIONNAIRE:

IF A RESPONDENT REFUSES TO ANSWER A QUESTION, PLEASE USE "999"

IF THE QUESTION IS NOT APPLICABLE, PLEASE USE "888"

IF THE RESPONDENT ANSWERS 'I DON'T KNOW', PLEASE USE "777"

IF THERE IS ANOTHER RESPONSE NOT LISTED, PLEASE USE "666" FOR OTHER

1.3 Head of household

1.4 Religion of head

| | |
|-------------------|-----|
| Catholic | 1 |
| Protestant | 2 |
| Adventist | 3 |
| Muslim | 4 |
| Indigenous belief | 5 |
| Other | 666 |
| None | 7 |

1.5 Gender of household head

| | |
|--------|---|
| Male | 1 |
| Female | 2 |

1.6 How far is your household's village from the forest?

| | |
|-----------|---|
| 0-0.5 km | 1 |
| >0.5-2 km | 2 |
| >2-4 km | 3 |
| >4 km | 4 |

1.7 Please list any formal organizations that the head of household is a member of:

1.8 Does your household participate in any other NGO or GOV projects? If yes, please list the organization and project period, 1.9-1.11.

1.9 Organization 1.10 Start 1.11 End

1.12 How many people are in your household?

Please give the following information for each member of the household:

(Original data collected in a table format with 1.13 being an identification number assigned to each member of the household and 1.14 being the household member's name)

1.15 Sex
Male 1
Female 2

1.16 Relationship to head of household

I am the head 1
Child of head 2
Spouse of head 3
Spouse of son/daughter 4
Grandchild 5
Father/mother 6
Brother/sister 7
Niece/nephew 8
Brother-in-law/sister-in-law 9
Daughter-in-law/son-in-law 10
Father-in-law/mother-in-law 11
Servant/employee/other 12
Partner 13

1.17 Age in years (If <1 year, write zero)

1.18 What was the highest educational grade the individual has completed?

P1 1
P2 2
P3 3
P4 4
P5 5
P6 6
P7 7
P8 8
S1 9
S2 10
S3 11
S4 12
A3 13
A2 14
U1 15
U2 16
U3 17
U4 18
U5 + 19
None 20

1.19 Marital status

1.20 Number of months resident in house during past 12 months

1.21 What is the individual's main occupation?

ORTPN (RDB) 1
Own farm activities 2
Labour (farm & non-farm) 3
Fishing 4
Trader/merchant/sales 5
Transport 6
Tourism 7
NGO 8
Construction 9
Education professional/admin 10
Health professional/admin 11
Other professional/admin 12
Secretary/clerical 13
Factory worker 14
Restaurant/bar/hotel 15
Skilled trades 16
Student 17
Other 666

1.22 Is this individual currently present in the household?

1.23 Number of years the individual has lived in the village

Section 2 Livelihood and activities

2.1–2.4 Which are the sources of livelihood for your household?

ENTER THE TOP 10 THAT APPLY IN BOXES TO LEFT AND THEN ASK THE THREE MOST IMPORTANT SOURCES AND WRITE CODES IN BOXES ON RIGHT.

ORTPN 1
Own farm activities 2
Labour (farm & non-farm) 3
Fishing 4
Trader/merchant/sales 5
Transport 6
Tourism 7
NGO 8
Construction 9
Education professional/admin 10
Health professional/admin 11
Other professional/admin 12
Secretary/clerical 13
Factory worker 14
Restaurant/bar/hotel 15
Skilled trades 16
Student 17
Other source 18
No other source 19
No source 20

2.5 Does the most important livelihood source listed above account for more than half of your household's livelihood?

2.6 Who earns the majority (or most, if no majority) of the household's income? (Write 55 if individual is outside household)

2.7 Are you employed for an organization working in Nyungwe National Park?

2.8 Do you consider your household:

Wealthy 1
Middle income 2
Poor 3

2.9 What is your income classification at the village level?

Poor 1
Middle income 2
Wealthy 3

Please fill in Yes (1) or No (2) for each season.

3.7 What is the main source of your household's drinking water over the course of the year?

Well with pump 1
Well without pump 2
Tap 3
River/stream/canal/lake (public lands) 4
River/stream/canal/lake (in Park) 5
Rainwater 6
Other 666

3.8 Do you share this source with other households?

3.9 If yes, how many households share this source?

A, Yes (1) no (2) B, Short dry C, Long rainy D, Long dry E, Short rainy

2.10 Are there busy times of year for harvesting?

2.11 Are there busy times of year for preparing cultivated foods?

2.12 Are there times of the year when food is very scarce?

Section 3 Housing and access to facilities

3.1 Who owns the house that you live in?

Owned by household 1
Relative 2
Person in village, unrelated 3
Other 666

3.2 How long has your household lived in this home?

<1 year 1
1 to ≤3 years 2
>3 to <10 years 3
≥10 years 4

3.3 How much land does your household cultivate (in ha)?

3.4 How much of this cultivated land is owned by your household?

All 1
Some 2
None 3 (go to 3.6)

3.5 Do you have a title for any of the land that your household owns?

3.6 Who owns the land that is not owned by your household but which you cultivate?

Relative 1
Person in village (unrelated) 2
Government 3
Cooperative 4
Other 666
Not applicable (I own all the land that I cultivate) 888

3.10 How far is this source from your home?

Within premises 1
<0.5 km 2
0.5–1 km 3
>1–2 km 4
>2 km 5

3.11 Is this water from this source ever scarce?

Yes 1
No 2 (go to 3.13)

3.12 Where does your household get water if this source fails? (Use source code from 3.7)

3.13 How far away is this source from your home? (Use distance code from 3.10)

3.14 What is the total amount that your household paid for drinking water in each period?

(IF NOTHING, WRITE "0")

Short dry (January–February)

Long rainy (March–May)

Long dry (June–August)

Short rainy (September–December)

3.15 What type of latrine do you use?

No latrine 1
Pit latrine 2
Flush/septic 3
Other 666

3.16 Do you share this latrine with other households?

3.17 How many households share this latrine?

3.18 What is the main source of lighting for your home?

| | |
|-------------|-----|
| No lighting | 1 |
| Electricity | 2 |
| Kerosene | 3 |
| Firewood | 4 |
| Candles | 5 |
| Other | 666 |

3.19 Over the course of a year, what is the main kind of fuel your household uses?

| | |
|---------------|-----|
| Firewood | 1 |
| Charcoal | 2 |
| Kerosene | 3 |
| Gas | 4 |
| Crop residues | 5 |
| Other | 666 |

3.20 What is the second most important source of fuel?
(USE CODES FROM 3.19)

3.21 If your household uses firewood as a fuel source, where is the wood primarily collected?

| | |
|--------------------------------------|-----|
| From the Park | 1 |
| Purchase from tree plantation | 2 |
| Trees grown on own land | 3 |
| Do not use firewood (not applicable) | 888 |
| Other | 666 |

3.22 Does your household use a stove? (If no, go to 3.24)

3.23 What kind of stove do you use? If more than one, please list primary.

| | |
|-------------|-----|
| Rondereza | 1 |
| Mbabula | 2 |
| Electric | 3 |
| Natural gas | 4 |
| Amashiga | 5 |
| Other | 666 |

3.24–3.27 Does your household use wood for the following activities?

| Description | Yes (1) or no (2) |
|--------------------------------|-------------------|
| 3.24 Cooking | |
| 3.25 Heating for the home | |
| 3.26 Purifying water | |
| 3.27 Heating water for bathing | |

3.28 How many person hours in a week does your household spend collecting firewood?

| | |
|-------------|---|
| 1–8 hours | 1 |
| 9–21 hours | 2 |
| 22–35 hours | 3 |
| >35 hours | 4 |
| None | 5 |

3.29 Does the time that your household spends collecting firewood vary seasonally?

Yes (1)

No (2, go to 3.31)

Do not collect firewood (3)

3.30 How many hours a week does your household spend collecting firewood by season?

(USE CODES FROM 3.28; if firewood is not collected write 888)

| A, Short dry | B, Long rainy | C, Long dry | D, Short rainy |
|--------------|---------------|-------------|----------------|
| | | | |

3.31–3.40 In order of importance to your household, list the main uses of your land (i.e. crops grown and/or livestock grazed). List up to 10 items.

| Description | Code | Description | Code |
|---|------|------------------------------|------|
| Aubergine | 1 | Citrus fruits | 23 |
| Avocado | 2 | Japanese plum | 24 |
| Beans | 3 | Mango | 25 |
| Cabbage | 4 | Maracuga | 26 |
| Cassava | 5 | Papaya | 27 |
| Cooking banana | 6 | Pineapple | 28 |
| Cooking greens (sombe, spinach, amaranth) | 7 | Sweet banana | 29 |
| Irish potato | 8 | Other fruits | 30 |
| Maize | 9 | Chicken | 31 |
| Onions/garlic/leeks | 10 | Eggs | 32 |
| Peas | 11 | Cow | 33 |
| Squash (courgette/ pumpkin) | 12 | Milk (fresh) | 34 |
| Sweet potato | 13 | Goat | 35 |
| Tomatoes | 14 | Fish | 36 |
| Other vegetables | 15 | Pig | 37 |
| Yogurt | 16 | Sheep | 38 |
| Alcohol (homemade) | 17 | Other meat/animal product | 39 |
| Wheat | 18 | Millet | 40 |
| Sugar cane | 19 | Rice | 41 |
| Sorghum | 20 | Other grains | 43 |
| Palm oil | 21 | Tea | 44 |
| Other oils | 22 | Coffee | 45 |
| | | Not applicable | 888 |

Section 4 Goods & services from the Park

4.1 Medicinal plants

4.2 Bamboo

4.3 Meat (forest)

4.4 Fruit (forest)

4.5 Minerals

4.6 Firewood

- 4.7 Honey
- 4.8 Water
- 4.9 Yams
- 4.10 Mushrooms
- 4.11 Beanpoles
- 4.12 Insects
- 4.13 Timber (construction)

Please collect the following information for each item listed above, 4.1–4.13 (original data collected in table format).

A. Do you collect [ITEM] from:

| | |
|------------------|-----|
| Park | 1 |
| Buffer zone | 2 |
| Both | 3 |
| Other | 666 |
| I do not collect | 888 |

B. How many days per year do you spend collecting [ITEM]?

C. During which season(s) is [ITEM] collected?

D, E, F. What percentage of [ITEM] is consumed by your household, sold for cash, or traded?
(If nothing, write “o”. Should add to 100%.)

G. When [ITEM] is available, what quantity do you collect in a day?

H. How much annual income is generated from the sale of [ITEM]?
(If nothing, write “o”)

I. What is the average distance that you travel into the forest to collect [ITEM]?

J. What is maximum distance that you have travelled into the forest to collect [ITEM]?

K. When [ITEM] is available how many hours do you spend collecting it during 1 week?

L. When someone enters the forest to collect [ITEM], what is the average amount of time that they stay in the forest?

4.15–4.20 What animals do you collect over a 12 month period?

4.21–4.27 Does your household use the Park for the following activities?
(WRITE 1 FOR YES AND 2 FOR NO)

- Recreation
- Spiritual/worship
- Transit (e.g. from one village to another)
- Grazing animals
- Beehives

- Charcoal production
- Other

Section 5 Food consumption

5.1–5.46 The following information was collected on an exhaustive list of food items, for complete list please e-mail corresponding author.

A. Has your household consumed [FOOD] during past year?

IF THE ANSWER TO A IS YES, THEN ASK B–F.

B. How much of [FOOD] did your household consume in the past week?

C. How much of [FOOD] did your household consume in the past year?

What percentage of [FOOD] consumed in the past year did your household ...

(If nothing, write “o”; Should add to 100%)

D. purchase?

E. receive in-kind (e.g. in exchange for labour or other goods)?

F. produce?

5.47–5.92 The following information was collected on the same list of food items above (5.1–5.46).

A. Has your household produced [FOOD] during the past year?

IF THE ANSWER TO A IS YES, THEN ASK B–E.

B. What quantity of the [FOOD] did your household grow in the past 12 months?

C. What percentage of [FOOD] was for household use?

D. What percentage of [FOOD] was for market sale?

E. What percentage of [FOOD] was for other use?

Section 6 Expenditures and durable goods

What is the monetary value of the amount purchased or received in-kind by your household during the past 30 days for [ITEM]? (If nothing, write “o”)

| Description | RWF |
|---|-----|
| 6.1 Alcohol (mass produced) | |
| 6.2 Medical supplies (bandages, medication) | |
| 6.3 Medical care (office visit, procedures, transport, including dental and vision related) | |
| 6.4 Charcoal | |
| 6.5 Cheese | |
| 6.6 Electricity | |

| Description | RWF |
|--|-----|
| 6.7 Household cleaning items (laundry soap, bleach) | |
| 6.8 Kersosene | |
| 6.9 Maggi cubes | |
| 6.10 Matches, candles, lantern, lighter, etc. | |
| 6.11 Milk powder | |
| 6.12 Bread | |
| 6.13 Soap, toothpaste, shampoo, or other personal care items | |
| 6.14 Tinned meats, fish, vegetables, or fruits | |
| 6.15 Transport | |
| 6.16 Wages for servants, field help, etc. | |
| 6.17 Wood | |
| 6.18 Cigarettes/tobacco | |
| 6.19 Batteries | |
| 6.20 Other prepared foods | |

What is the money value of the amount purchased or received in-kind by your household during the past 12 months for [ITEM]? (If nothing, write "o")

| Description | RWF |
|---|-----|
| 6.21 Clothing & footwear for children | |
| 6.22 Clothing & footwear for men | |
| 6.23 Clothing & footwear for women | |
| 6.24 Social expenses (weddings, deaths, rites, etc.) | |
| 6.25 Health insurance | |
| 6.26 Religious expenses | |
| 6.27 Agricultural materials (seeds, pesticides, fertilizers, tools) | |

A. Do you own any of the following items?
IF YES, ASK B & C.

| | B. How many does your household own? | C. What is the current estimated total value of the item(s)? |
|-------------------------------|--------------------------------------|--|
| 6.28 Bicycle | | |
| 6.29 Computer | | |
| 6.30 DVD player/VCR | | |
| 6.31 Fan | | |
| 6.32 Heater | | |
| 6.33 Motorcycle/scooter | | |
| 6.34 Radio/cassette/CD player | | |

| | B. How many does your household own? | C. What is the current estimated total value of the item(s)? |
|--|--------------------------------------|--|
|--|--------------------------------------|--|

- 6.35 Refrigerator/freezer
- 6.36 Telephone (mobile or landline)
- 6.37 Television
- 6.38 Vehicle
- 6.39 Washing machine
- 6.40 Wrist watch
- 6.41 Zinc roof
- 6.42 Chickens
- 6.43 Cows
- 6.44 Goats
- 6.45 Pigs
- 6.46 Sheep
- 6.47 Other livestock

A. Are any individuals in your household are enrolled in [SCHOOL]?

B. If yes, how many individuals?

- 6.48 Nursery school
- 6.49 Primary
- 6.50 Secondary
- 6.51 University (undergraduate)
- 6.52 University (postgraduate)

Section 7 Willingness-to-pay

The next question we ask is about how much you value any resources that your household currently collects from the Park and that you expect to collect in the future. Think about all ways in which you use Park resources, including any resources that you collect: do you graze any cattle or goats in the Park? Do you harvest firewood, beanpoles, wild honey, minerals, timber or animals?

Now, having thought about how you value your current and future use of the Park, think about how much you would be willing to pay as a tax to the government for them to look after these resources and ensure their availability in the future.

NOW ASK RESPONDENTS EACH OF THE FOLLOWING QUESTIONS IN TURN (YOU CAN STOP AS SOON AS THE RESPONDENT HAS ANSWERED YES TO AN AMOUNT)

7.1 Would you be willing to pay _____ each year?

- | | |
|-------------------|---|
| >90,000 RWF | 1 |
| 60,000–90,000 RWF | 2 |
| 30,000–59,000 RWF | 3 |
| 15,000–29,000 RWF | 4 |
| 5,000–14,000 RWF | 5 |
| <5,000 RWF | 6 |
| Nothing | 7 |

7.2 If you answered ‘nothing’ to 7.1, are you not willing to pay an amount because _____? True (1) or false (2)

- Our household does not use any Park resources
- We should not have to pay the government to look after the Park’s resources
- Even if we paid to look after the Park, the government would not allow us to use resources
- We cannot afford it
- Other

This question is also about how much you value your household’s use of Park resources. However, instead of telling me how much money you are willing to pay to maintain the availability of Park resources, I want you to tell me how much money you would be willing to accept to stop using these Park resources.

NOW ASK RESPONDENTS EACH OF THE FOLLOWING QUESTIONS IN TURN (YOU CAN STOP AS SOON AS THE RESPONDENT HAS ANSWERED YES TO AN AMOUNT):

7.3 Would you be willing to accept _____ ?

- | | |
|-------------------|---|
| <5,000 RWF | 1 |
| 5,000–14,000 RWF | 2 |
| 15,000–29,000 RWF | 3 |
| 30,000–59,000 RWF | 4 |
| 60,000–90,000 RWF | 5 |
| >90,000 RWF | 6 |
| No amount | 7 |

7.4 If you answered no amount to 7.3, are you not willing to accept an amount because _____? True(1) or false (2)

- The forest is too valuable a resource to give up
- A one-time payment cannot provide for my household
- I do not know
- Other

Section 8 Attitudes towards conservation

8.1 How many National Parks are there in Rwanda?

8.2 Does your household benefit from living near the Nyungwe National Park? (If no, go to 8.4, if don’t know, go to 8.5)

8.3 Does your household benefit from the Park through the following?

(List all that apply)

- A. Soil erosion control
- B. Employment
- C. Social service projects
- D. Climate control
- E. Harvesting of forest products
- F. Protection of natural resources
- G. Tourism
- H. Pollination of agricultural crops by bees
- I. Availability of water
- J. None of these
- K. Other

8.4 Do you feel that you do not benefit from the Park because of the following? (List all that apply)

- A. Lack of land
- B. Crop-raiding by wild animals
- C. No access to forest products (e.g. animals, medicinal plants, wood)
- D. No reason
- E. Other

8.5 Does your community benefit from Nyungwe National Park? (If no, go to 8.7)

8.6 Does your community benefit from the Park through the following?

- A. Soil erosion control
- B. Employment
- C. Social service projects
- D. Climate control
- E. Harvesting of forest products
- F. Protection of natural resources
- G. Tourism
- H. Pollination of agricultural crops by bees
- I. Availability of water
- J. None of these
- K. Other

8.7 Does your country benefit from Nyungwe National Park? (If no, go to 8.9)

8.8 Does your country benefit from the Park through the following?

- A. Tourism
- B. Employment
- C. Refuge in insecurity
- D. Climate control
- E. None of these
- F. Other

8.9 Does the Park (forest) have any cultural importance to you? (If no, go to 8.11)

8.10 What is the cultural importance of the Park to you?

- A. Hunting
- B. Traditional medicine
- C. Traditional products
- D. Honey collection
- E. Timber
- F. Ceremonies
- G. Burial grounds
- H. None
- I. Other

8.11 Do you ever interact with Park staff (ORTPN/RDB)?
(If no, go to 8.14)

8.12 Have these interactions with Park staff been

- Positive 1
- Mostly positive 2
- Neutral 3
- Mostly negative 4
- Negative 5

8.13 How have your interactions with Park staff changed in the past 10 years?

- Much improved 1
- Improved 2
- No change 3
- Worse 4
- Much worse 5

8.14 Do you benefit from the Park staff's presence? (If no, go to 8.16)

8.15 How do you benefit from the Park staff's presence?

- A. Assistance with crop-raiding animals
- B. Control of insecure areas
- C. Revenue sharing
- D. Social services
- E. Other

8.16 Do you think any of the following are problems with the Park staff?

- A. Park staff do not permit access to forest products
- B. Park staff give harsh punishments
- C. Park staff do not permit travel through the forest
- D. Park staff have low contact with community
- E. None of these
- G. Other

8.17 Would the following activities help to improve relations with your community and Park authorities?

- A. Consultation with the community
- B. Allow use of buffer zone
- C. Employment
- D. Education on conservation
- E. Compensate for crop-raiding
- F. Move away from the forest

G. Allow access to non-timber forest products

H. None of these

I. Other

8.18 How would you describe your relationship with Park staff?

- Very good 1
- Good 2
- Neutral 3
- Bad 4
- Very bad 5

8.19–8.35 Rate respondent's answer to the following statements on a 6-point scale where 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree, and 6 = don't know.

8.19 The forest causes many problems.

8.20 The forest provides many goods and services.

8.21 The benefits of living near the forest are greater than the costs.

8.22 The population density around the Park is a threat to conservation.

8.23 Declining fertility of agricultural lands is leading to greater pressure on resources within the Park.

8.24 Local people have no choice but to collect firewood from within the Park.

8.25 Local people should be allowed to collect some goods from the Park, such as wild yams, medicinal plants and honey.

8.26 The main factor that stops people entering the forest (Park) to carry out illegal activities is the level of law enforcement (ORTPN).

8.27 The main factor that stops people from entering the forest to carry out illegal activities is the level of involvement they have in planning and managing the Park.

8.28 The main factor that stops people entering the forest to carry out illegal activities is the level of environmental education they receive.

8.29 The main purpose of Nyungwe National Park must be the preservation of the environment.

8.30 RDB has a duty to support economic development of local people.

8.31 Local people should be more fully included in the process of deciding how the Park is managed.

8.32 The current way of managing the Park is good.

8.33 The current way of managing the buffer zone around the Park is good.

8.34 The rules of the Park are fair.

8.35 The rules of the buffer zone surrounding the Park are fair.

8.36 Does your household do anything to help reduce problems of crop-raiding? (If no, go to 8.38)

8.37 Do you do any of the following to reduce crop-raiding? (List all that apply)

- A. Grow crops that are less vulnerable
- B. Construct fences or other barriers
- C. Use children to guard crops
- D. Use other household members to guard crops
- E. Use guard dogs
- F. Other

8.38 Does the community do anything to help reduce crop-raiding? (list all that apply)

- A. Communal construction of fences/barriers
- B. Community guards
- C. Other (Specify: _____)

8.39 In the last year, has anybody in your household helped RDB in any of the following ways? (List all that apply)

- A. Preventing or stopping a fire
- B. Informing about an illegal activity such as poaching
- C. Informing about problem animals
- D. Other

8.40 Do you think that ORTPN/RDB listen to local peoples' concerns and opinions about the Park?

8.41 Has your household suffered from crop damage by animals in the last year?

8.42 In the last year, what proportion of your crop do you estimate you have lost to wild animals?

| | |
|-----------|---|
| <5% | 1 |
| 6–10% | 2 |
| 11–25% | 3 |
| 26–50% | 4 |
| >50% | 5 |
| No damage | 6 |

8.43 Which initiative (or initiatives) do you think would best protect Nyungwe National Park?

- A. Agroforestry
- B. Tourism
- C. Education
- D. Use of rangers to patrol against illegal activities
- E. Nothing
- F. Other

APPENDIX 2 Conservation services agreement relating to measures to support the conservation of Nyungwe National Park, between ReDirect Project (Reconciling Biodiversity and Development through Direct Payments for Conservation) and Shaba Cell, Kitabi Sector, Nyamagabe District, March 2010

This agreement is made between

- 1 The “Contractor”: ReDirect, based at the University of East Anglia, in the United Kingdom, with an office in Kitabi, Rwanda
- 2 The “Service provider”: Shaba Cell, Kitabi Sector, Nyamababe district, Rwanda

It is agreed as follows:

1. Definitions

“Conservation services” are activities undertaken to reduce threats to the Nyungwe National Park, as specified in Section 4.

“Monitoring” is activities undertaken to evaluate and verify the extent to which services have been provided, as specified in Section 5.

“Payments” are monies paid to the cell and its constituent households in return for verified services.

“Indicators” are activities and outcomes which are monitored in order to assess the level of service provision.

“Performance” is a measure of service provision used to determine the level of payment.

“Payment schedule” is a specification of the amount to be paid according to the level of service provision. It also specifies dates for those payments.

“The Park” refers to the designated territory of the Nyungwe National Park. This does not include the Buffer Zone.

“Primary school” refers to six to nine years’ education programme.

2. Contractor’s obligations

The contractor agrees to:

Provide payment to the service provider in accordance with the Payment Schedule in Sections 7 and 8.

3. Service provider’s obligations

The service provider agrees to:

Provide conservation services to support the Park, as specified in Section 4.

4. Conservation services

The Service Provider agrees to help protect the Park against the following activities:

- i) Hunting of animals using snares, dogs or other means.

- ii) Cutting of Park trees for beanpoles, firewood, construction, honey collection and other purposes.
- iii) Mining of minerals, including coltan and gold.

In addition the Service Provider agrees to undertake the following activities in support of park protection:

- iv) Ensuring that people living in the cell are aware of the benefits of supporting RDB/NNP's work in and around the Park, including the partnership between ReDirect and RDB.
- v) Ensuring that people living in the cell are aware of the ReDirect project, including the services to be provided and the payment schedule.
- vi) Work to reduce conflict with the Park by devising and executing village plans to help reduce crop-raiding. These plans must ensure that children are not required to miss school in order to guard crops.
- vii) Reduce the long-term dependence on forest resources by planting appropriate tree and/or bamboo species on private lands.
- viii) Support RDB in caring for the Park by providing accurate and timely information relating to threats.

5. Indicators and monitoring

The table below identifies

- a) The indicators that will be used to assess whether, and to what level, the conservation services have been provided.
- b) The principle method for monitoring these indicators

| Service | Indicators | Monitoring |
|---------------------------------|---|---|
| 1. Protect against hunting | i) Combined 'Encounter Rate' (observations per KM) | Park surveys by threat monitoring team |
| 2. Protect against tree cutting | ii) New trails observed in Park | Data from RDB |
| 3. Mining | Observation of active mine | Park surveys by threat monitoring team |
| 4. Conservation sensitization | Proportion of cell inhabitants aware of key aspects of ReDirect Proportion of cell inhabitants aware of key aspects of NNP and RDB | Questionnaire survey of random sample of population |

| Service | Indicators | Monitoring |
|---|---|--|
| 5. Reduce conflict with Park through reduced crop-raiding | i) Effort to organize and carry out actions to reduce crop-raiding ii) Primary school attendance rates iii) Number of complaints to RDB | Data collected by community monitoring team RDB records |
| 6. Reduce demand for Park resources | Number of trees and bamboos planted | Community monitoring team, plus ReDirect verification |
| 7. Support RDB with information | i) Provide map showing areas used for snares by people outside of Shaba ii) Other attempts to assist RDB through provision of information | Community monitoring team, plus RDB verification |

Monitoring will take place throughout the year. At the end of the year it will be used to assess the level of performance and thus the level of payment to be made.

Monitoring responsibilities are as follows:

Services 1, 2 and 3 will be monitored by the Threat Monitoring Team, made up of ReDirect Staff, an RDB representative and a community representative.

Service 4 will be monitored by the ReDirect team.

Services 5, 6 and 7 will be monitored by the Community monitoring team, financed through the Component 1 of the budget in section 7, below. Tools for recording performance will be provided to the community team, and training given. Community team reporting will be subject to cross-checking by ReDirect team (for services 5 and 6) and RDB (service 7).

When reports from the monitoring teams are available, assessment of performance will be made by an evaluation team composed of ReDirect, RDB and community representatives.

6. Threats and baseline

During a consultation meeting in Shaba in November 2009, participants identified the following threats to the neighbouring area of Park:

- Hunting with snares
- Cutting trees for cooking and beanpoles, as well as for construction and furniture
- Collection of grasses for animal fodder

Since that consultation meeting the threat team has undertaken an initial survey in the Park. The main findings were:

The team observed evidence of hunting with snares, as well as some tree cutting and fodder collection.

The Encounter Rate was 0.8 (the lowest of the cells surveyed), meaning that there was an average of 0.8 observations of illicit activities (the majority being snares) for each kilometre walked in the forest. This Encounter Rate provides a baseline that we will use for assessing improvements in park protection.

7. Payments

Payment will be made to the cell, depending on provision of services, in accordance with the schedule detailed below for 2010. Payment in 2011 will be subject to a new schedule and will be subject to a new agreement.

The payment for 2010 will be made up of two components:

- 1 A fixed budget of 1,500,000 RWF, paid during April 2010.
This amount covers the following:
Monitoring team wages: 500,000 (duties to be specified)
Support for households wishing to start/improve tree nurseries: 400,000
Start-up costs for village crop-raiding committees: 250,000
Expenses for community meetings and sensitization activities: 200,000
Transport and cellphone cards: 50,000
Secretary wage to provide accounts and end of year cell report: 100,000 (duties to be specified)
- 2 A variable amount, based on performance, up to a maximum of 15,000 RWF per household and down to a minimum of 5,000 RWF per household. With 1,145 households registered at the start of the project, this leads to a maximum total of 17,175,000 RWF. During 2010 this amount will be paid in two installments. One third of the amount (5,725,000 RWF) will be paid in advance, in April 2010. The rest will be paid between December 2010 and January 2011, following the end of year performance evaluation.

The fixed budget is to be managed centrally at cell level, for investments in project management and in activities to ensure performance with regard to service provision.

8. Variable payment schedule

The variable payment is worked out by beginning with a figure that is 50% of the maximum payment. 50% of 17,175,000 equals 8,587,500.

So Shaba starts with 8,587,500 RWF and this figure will rise with successful performance on indicators, but also fall where performance is not good.

The maximum it can rise to is 17,175,000 RWF.

The minimum it can fall to is 5,725,000 RWF (the amount of the April instalment).

The following performance criteria will determine how much the starting amount grows (or declines):

| Performance Indicator | Performance | Amount added (deducted) |
|---|---|-------------------------|
| Combined encounter rate (wood cutting and snares) | < 0.4 | +4,000,000 |
| | 0.5–0.6 | +3,000,000 |
| | 0.7–0.8 | +1,000,000 |
| | 0.9–1.2 | –1,000,000 |
| | > 1.2 | –3,000,000 |
| New trails | Each new trail | –400,000 |
| Mining | Each active mine | –1,000,000 |
| Sensitization (NNP/RDB) | >80% aware | +500,000 |
| | 60–80% aware | +250,000 |
| | 40–60% aware | 0 |
| | <40% aware | –250,000 |
| Sensitization (ReDirect) | >80% aware | +500,000 |
| | 60–80% aware | +250,000 |
| | 40–60% aware | 0 |
| | <40% aware | –250,000 |
| Effort to organize and carry out actions to reduce crop-raiding | Each village with organized activity during year | +500,000 |
| Primary school attendance rates | Any fall in primary school attendance during 2010 | –1,000,000 |
| Number of crop-raiding complaints to RDB | Decline in incidents between April and December | +1,000,000 |
| Number of new trees planted (indigenous species) | Per plant | +700 |

| Performance Indicator | Performance | Amount added (deducted) |
|---|--|-------------------------|
| Number of new trees planted (exotic species) | Per plant | +350 |
| Community provides map showing areas used for snares by people outside of Shaba | Map received | +100,000 |
| Other attempts to assist RDB through provision of information | RDB reports of number of incidents of receiving good information | +200,000 |

Assessment against these criteria will be made in late 2010.

20% of each installment of the variable payment will be distributed to individual households. Distribution will be organized by the cell executive. If possible this will be paid directly into a savings account. If not possible it will be distributed as cash payments. The remaining 80% of the variable payment is available for collective action, at cell or village level.

Transfer of monies

Payments will initially be made to the bank account of the cell:

Account number:

Bank name:

Term of agreement

The term of this agreement is until end of 2010.

We expect a new agreement to be negotiated in 2011. The new agreement will be similar although the payment amounts and indicators will vary to reflect the experience during 2010.

Termination of agreement

This agreement can be terminated by the service provider at any time. This must be done in writing by the executive secretary of the cell and sector, and approved by the Mayor.

The contractor will only terminate the agreement if forced to do so by unforeseen circumstance, such as a request made by the Government of Rwanda, or a withdrawal of funding. The contractor will take all reasonable steps to ensure that such events do not occur.

If monies received by communities are not used and distributed in ways specified in this agreement, the contract may be terminated and any enquiry will be handled in accordance with Rwandan law.

This Agreement is hereby executed.

Chief Executive,

International Development UEA

Cell Executive Secretary

Shaba Cell

Approved by

Sector Executive Secretary

Kitabi Sector

Chief Park Warden

Nyungwe National Park

Mayor of Nyamagabe District