



# Climate Change

## Adaptation Program



## Carbon Sequestration

### Financial Tool

### User Manual

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**Introduction**

You may have heard of carbon offsetting, or read about it in the papers, but what does it mean, how can you organisation benefit from it, and what are the financial implications? Whilst other parts of the “starter pack” go into detail about the technical issues of carbon offsetting and agriculture, this manual explains the **Carbon Offsetting Profit and Loss Model Feasibility Tool**, which specifically looks at the financial aspects of carbon offsetting. This tool will help you build a financial plan for your organisation and is there the financial feasibility of sequestering carbon. This will help you to analyse (in a financially sustainable way) how to:

1. Increasing farmer income
2. Build the capacity of the organization
3. Making the organization more business minded
4. Educate farmers in environmental impact, and how environmental sustainability can be profitable!

The technical aspects of carbon offsetting, i.e. international carbon offsetting standards, and field level implementation, are covered in other parts of the starter pack. This user manual (in conjunction with the CSFT technical appendix) will work you through all the financial aspects of the: how, where, when and to whom the carbon payment will be distributed. To ensure that the project is financially sustainable, it is necessary to use the three core financial tools: cash flow, profit and loss (P&L) and the balance sheet. From these, it will be possible to financially monitor the five areas where the carbon payment will go, over the life cycle of the project:

- A. Start up costs
- B. Running / operating costs
- C. Tax
- D. Payment to farmer
- E. Re-investment for long term sustainability i.e. replanting original stock

Before you start to “fill in the accompanying Excel spread sheet” there is some information that you need to find out. Some of this information the organisation should have, other information i.e. carbon value rates, you will need to ask your project manager. Once you have completed these questions, you will see (at the back of this manual), which cells you should input the information into.

1. US Dollar to MK exchange rate? \_\_\_\_\_
2. What is the lifetime carbon value / tree of? Shell \_\_\_\_\_  
Kernel \_\_\_\_\_
3. What is the international carbon value / metric ton? \_\_\_\_\_
4. How many years is the lifetime of the tree? \_\_\_\_\_
5. What is the lifecycle of trees in your project? \_\_\_\_\_
6. How long will this project be for? \_\_\_\_\_

**Number of farmers**

The amount of carbon money you receive will depend on the number of farmers, and the number of trees that the farmers can plant; the greater the number of trees that are planted the more money that can be distributed to the farmers. With this in mind, you need to estimate what will be the number of new farmers per year be.

7.

YEARS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
No. farmers																				

You also need to estimate how many trees can each farmer plant. This is calculated by the average size of land the farmer has, that they will use to plant trees, divided by the amount of space each tree needs.

- 8. Average land available to farmers \_\_\_\_\_ square metres
- 9. Number of square metres each tree needs \_\_\_\_\_ square metres.
- 10. Average number of trees each farmer will plant \_\_\_\_\_ trees

**1 hectare = 10,000 square metres (i.e. 100 metres x 100 metres) or 2.471 acres**  
**1 acre = 4,047 square metres**

Knowing the estimated cumulative number of farmers, and the average number of trees which each farmer will plant, you can multiple the two together to give the total number of trees planted.

**Total number of farmers** \_\_\_\_\_ **X average trees / farmer** \_\_\_\_\_ = **Total number of trees** \_\_\_\_\_

Knowing the cumulative number of trees to be planted, and the value of each tree (from first page) you can now calculate the total amount of carbon money that will be available (assuming 100% success rate).

**Cumulative number of trees** \_\_\_\_\_ **X value per tree** \_\_\_\_\_ = **Total carbon money** \_\_\_\_\_

There will inevitably be some failure due to poor tree hasbandery, this will effect the total number of trees which are effectively absorbing the carbon. As such, the total amount of carbon sequestered will be less, and therefore so will the carbon payment be (to reflect this).

- 11. What is your estimated failure rate? \_\_\_\_\_%

**Money in – accessing carbon money**

The first thing that needs to be considered is when and how you are going to receive the carbon money. This is vital to know so that cash flow can be properly organised. Cash flow is not about making profit, but literally is about the flow of cash i.e. ”money coming in” and “money going out”, in other words what is the availability of cash.

Though you might wish for all the carbon money to be given in one lump sum, this doesn't happen for four good reasons.

- A. It is a lot of money, and therefore could be open to corruption or fraud from various members of the association!
- B. As it is a lot of money, the buyer might not have all the money easily available
- C. You do not need all the money in the beginning, but to be spread over life time of the project.
- D. The “buyer” is paying on the lifetime value that the tree will absorb carbon. If they pay in the first year, they you could cut the tree down, start another project, and claim for more carbon money! Thus defeating the point of the project.

Generally you will be given up to 20% of the total carbon money at the beginning of the project, this is to pay for start up costs and is usually the most expensive time of the project. You will have a relatively large amount to spend on capital expenditure i.e. buildings, vehicles, computers etc. One of the reason for the concept of carbon offsetting payments is to financially help those projects with start up capital, which otherwise would not have taken place due to financial constrictions. The second instalment probably won't be till year 5, by which time it will be clear (from M&E) if the project is working as envisaged.

You should anticipate when the money will come into the organisation. You should take into account times when your costs are higher i.e. buying new / more vehicles / motorbike, investing in capital i.e. storage, greenhouses etc. When your money out increases, so should your money in, thus you will have available cash to pay for the costs.

12.

YEARS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MONEY IN %	20																			

Your project may be more (or less) than twenty years, so change the table accordingly, but remember that the total “money in” needs to be **100%**.

You may get money from other sources, i.e. grants, selling fruit from the trees. These “incomes” should also be taken into account and at appropriate time and included into the revenue section of the planning tool.

**Money out – costs / operational expenses**

Once you know what money is coming in, you need to discuss how and when you are going to spend the carbon money i.e. “money out”. As discussed you will get “money in” from the selling of the carbon, money will go out in numerous ways; it is vital to know all costs, to see if you are going to be profitable, but also in terms of cash flow. Though you can work out the cost per tree, it will be easier to estimate your costs if you use a higher number i.e. cost per 100 trees.

13. How many trees are you using as a base figure to estimate costs: \_\_\_\_\_ trees

**14. Purchasing seedlings to planting**

- a. Purchase seedlings \_\_\_\_\_
- b. Nursery management \_\_\_\_\_
- c. Tree distribution (transport) \_\_\_\_\_
- d. Mapping \_\_\_\_\_
- e. Planting \_\_\_\_\_

**15. Tree welfare**

- f. Tree husbandry \_\_\_\_\_
- g. Pest control \_\_\_\_\_

**16. Monitoring and evaluation exercises**

- h. Internal operational M&E \_\_\_\_\_
- i. Certification \_\_\_\_\_ (this will have an industry standard cost – check with project manager)
- j. External M&E \_\_\_\_\_ (this will have an industry standard cost – check with project manager)
- k. Impact analysis / Social Performance Analysis \_\_\_\_\_

**17. Extension workers and staff**

- l. Administrator \_\_\_\_\_
- m. Management \_\_\_\_\_
- n. Extension workers \_\_\_\_\_

**18. Training**

- o. Staff training \_\_\_\_\_
- p. Farmer training \_\_\_\_\_

**19. Administration and office costs**

- q. Transport \_\_\_\_\_
- r. Rent \_\_\_\_\_
- s. Water \_\_\_\_\_
- t. Electricity \_\_\_\_\_
- u. Phones /airtime \_\_\_\_\_

- v. Insurance \_\_\_\_\_
- w. Tax \_\_\_\_\_ check with tax authority  
what is the relevant tax bracket – ask if tax exempt.
- x. Stationary \_\_\_\_\_
- y. Miscellaneous \_\_\_\_\_

**20. Capital expenditure**

- z. Vehicles, motorbikes etc \_\_\_\_\_
- aa. Storage facilities \_\_\_\_\_

21. You will also have associated costs to your capital expenditure i.e. for motorbikes:

- a. Maintenance \_\_\_\_\_
- b. Vehicle tax \_\_\_\_\_
- c. Petrol \_\_\_\_\_
- d. Insurance \_\_\_\_\_

You need to include all associated costs of all capital expenditure. i.e. if you are also buying cars, then you need to estimate maintenance, tax, petrol etc for the car.

22. If you have capital expenditure, it is important to know that at a later date you will need to replace the items i.e. motorbikes. In financial planning this is known as depreciation. This is usually calculated by the value of the item divided by the number of years it will be used for i.e. a new motorbike will last 5 years (before it needs to be replaced) therefore depreciation is 20% / year. What is your depreciation rate? \_\_\_\_\_%

Though you need to calculate depreciation (in terms of financial planning) the item will still have a residual value, even though it may have no value on the balance sheet. Due to this, you may after the five years sell the motorbike to someone, this will act as income (to the organisation) and should be reflected in the revenue section of the profit and loss table.

23. It is important to also have a contingency fund, in case your costs are more than expected; this is a % of your total estimated costs. Usually a contingency fund will be between 3% - 10%. What is your contingency fund? \_\_\_\_\_%

**Farmer payments**

Approximately 60% of the money that the organisation receives will be needed for operational expenses (as above); that means that approximately 40% will be given to farmers in one form or another. Below are a few options that you should discuss:

### Payment direct to farmer

The carbon offsetting project has been set up, for a number of reasons, one of which is to increase member's income.

24. What is the total percentage (of the carbon money) that you are going to give to members for the number of trees that they plant? \_\_\_\_\_%

**Share dividend** – This will be a yearly payment and act as an incentive to the “mother” association, the sub associations and their members. A few ideas of how it could be split:

- A. The money is kept at the “mother association for capacity building purposes.
- B. Every active member of the association gets an equal amount / share
- C. Only those farmers with 80% (or above) good tree management get a share i.e. with some not qualifying, those who do (qualify) get a larger %
- D. The money is split between participating sub associations for: capital expenditure, other IGAs, loan capital etc – i.e. % relative to the number of their members involved in carbon project. - 5% of members – 5% of lump sum.

25. What percentage is going to be used for a share dividend? \_\_\_\_\_%

**When added, the operational costs, farmer payment and share dividend should come to 100%**

**Operational costs** \_\_\_\_\_%

**Farmer payment** \_\_\_\_\_%

**Share dividend** \_\_\_\_\_%

Once you have researched and decided all these figures, you should input into the accompanying Excel spreadsheet, as indicated. Some of the figures do not need entering into spreadsheet, but need to be known for own research purposes.

There is a technical manual which accompanies this user manual, and explains how the Excel spreadsheet works. You should use that manual to understand how all calculations are made.

- 1. US Dollar to MK exchange rate? **Data Input AND SUMMARY – ROW 3**
- 2. What is the lifetime carbon value / tree of? Shell **Data Input AND SUMMARY – ROW 4**  
Kernel **Data Input AND SUMMARY – ROW 4**
- 3. What is the international carbon value / metric ton? **Data Input AND SUMMARY – ROW 5**
- 4. How many years is the lifetime of the tree?

- 5. What is the lifecycle of trees in your project?
- 6. How long will this project be for? **Data Input AND SUMMARY – ROW 2**

**7. Data Input AND SUMMARY – ROW 11**

YEARS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
No. farmers																				

- 8. Average land available to farmers square metres
- 9. Number of square metres each tree needs
- 10. Average number of trees each farmer will plant **Data Input AND SUMMARY – ROW 12**
- 11. What is your estimated failure rate? \_\_\_\_\_% **Data Input AND SUMMARY – ROW 13**

**12. Data Input AND SUMMARY – ROW 17**

YEARS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
MONEY IN %	20																			

- 13. How many trees are you using as a base figure to estimate costs: \_\_\_\_\_ trees

**Answers 14 – 23 are to be completed for each of the “year worksheets”; you may need to add additional rows. SOMETIME IT WILL BE A ONCE A YEAR COST, OTHERS WILL NEED TO BE INCLUDED FOR EACH MONTH (THE WHOLE ROW) I.E. TREE HUSBANDAERY.**

**14. Purchasing seedlings to planting**

- a. Purchase seedlings **B22**
- b. Nursery management **B27**
- c. Tree distribution (transport) **B23**
- d. Mapping **B26**
- e. Planting **B24**

**15. Tree welfare**

- f. Tree husbandry **B25**
- g. Pest control **B30**

**16. Monitoring and evaluation exercises**

- h. Internal operational M&E **B29**
- i. Certification **Data Input AND SUMMARY – ROW 6**
- j. External M&E **Data Input AND SUMMARY – ROW 7**
- k. Impact analysis / Social Performance Analysis **B28**

**17. Extension workers and staff**

- l. Administrator **B34**
- m. Management **B35**
- n. Extension workers **B36**
- 18. Training**
  - o. Staff training **B40**
  - p. Farmer training **B41**
- 19. Administration and office costs**
  - q. Transport **B42**
  - r. Rent **B43**
  - s. Water **B45**
  - t. Electricity **B45**
  - u. Phones /airtime **B44**
  - v. Insurance **B46**
  - w. Tax **B47**
  - x. Stationary **B48**
  - y. Miscellaneous **B49**
- 20. Capital expenditure**
  - z. Vehicles, motorbikes etc
  - aa. Storage facilities
- 21. You will have associated costs to capital expenditure i.e. for motorbikes:
  - e. Maintenance
  - f. Vehicle tax
  - g. Petrol
  - h. Insurance
- 22. Depreciation % **ROW 57**
- 23. Contingency rate % **ROW 54**
- 24. Farmer payment % Automatically generated **Data Input AND SUMMARY – Cell H 55**
- 25. Share Dividend % Automatically generated **Data Input AND SUMMARY – Cell H 57**