



MANAGEMENT OF A SEED BANK

Trainings for the leaders of the groups

Trainer's guideline

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1- Presentation of the activity

1. What is a seed bank?

A seed bank is a stock of seeds kept at the level of a group: village, Agriculture Project Committees (APC)...

The aim of the seed bank is:

- to have access to **improved seeds** → higher yields (production increased)
- to have a **source of seeds** for the community → (problem of lack of seeds solved)

The final objective is to enable the farmers to produce more:

- to eat and therefore to fight hunger
- to sell and therefore to increase incomes and to improve livelihoods

2. How does it work?

The seeds are kept at the group level.

At the time of sowing, each member can get a loan of seeds from the seed bank. Thus there is no problem of lack of seeds anymore.

After the harvest, each member reimburses to the seed bank twice the quantity of seeds that he received. For example: a member who borrows 2 kg of seeds will have to repay 4 kg to the seed bank after the harvest.

The seeds are kept in a safe and appropriate place until the next season. Then, they will be redistributed to the members at the time of sowing.

If the group continues each and every year, there will be more and more seeds in the seed bank. The group can make different uses of these seeds:

- Each member can have a bigger loan of seeds at the time of sowing;
- New members can be welcomed in the group;
- Part of the seeds can be kept in case of poor reimbursement due to a poor harvest;
- Part of the additional seeds can be sold. The money can be used for:
 - Renewing the maize stock (every 3 years for OPV maize)
 - Buying chemicals (actellic, fertilizers...)
 - Any other purpose decided at the group level...

3. Support provided by Inter Aide

The first year, Inter Aide provides the starter pack of improved seeds to the group. Apart from the seeds, the project provides trainings on crop management and post-harvest management and, if necessary, supports the construction of granaries.

The seeds belong to the group. After harvesting, each farmer has to give reimburse the loan of seeds to the seed bank (and not to Inter Aide). From there, the farmers can continue to receive, and then repay, a loan of seeds every year from the seed bank.

2- Loan recording and distribution of the seeds

1. Who is responsible of the seed bank?

In order to work in a fair and sustainable way, the management of the seed bank has to be meticulous and rigorous:

- It should be done according to the constitution of the group. Each and every member who wants to benefit from the seed bank must agree on that constitution.
- The management is done by the chairman, the secretary and the treasurer of the group. Their duties are :
 - to record all the loans, reimbursements and the sales from the seed bank,
 - to make sure that the seeds are stored in proper conditions,
 - to organise the distributions and the reimbursements as well as the treatment of the seeds,
 - to deal with defaulters.

2. How to record the loans?

Recording the loans will be done by the treasurer with the help of the secretary and under the supervision of the chairman. The loans will be recorded in the seed bank's book. The information needed to record the loan for each beneficiary are:

- the name of the beneficiary
- the date of the loan grant
- for each crop borrowed:
 - the amount of the loan
 - the expected amount of the reimbursement and the deadline date for the reimbursement
 - leave a blank or a special page to fill the real reimbursement after the harvest
- the signature of the beneficiary

The recording of the loan and of the reimbursement can be done either on the same page or on different pages. The recording can be done in one page per crop or all the crops on the same page.

Eg: recording of the loans and of the reimbursements on different pages

Page of the loan recording:

| Name | Maize | | | | Signature |
|----------|------------|--------|------------------------|--------|-----------|
| | Loan | | Expected reimbursement | | |
| | Date | Amount | Limit date | Amount | |
| Zilombe | 12/10/2008 | 4kg | 12/8/2009 | 8kg | |
| Chaponda | 12/10/2008 | 4kg | 12/8/2009 | 8kg | |
| ... | | | | | |

3. How to prepare the seed distribution

In order to distribute the seeds safely and fairly, a special organisation should be followed **before the day of the distribution**:

- First, the pages of the book to record the distribution should be prepared before the day of the distribution.
- The leaders have to find a place for the distribution (the ground of the village for the first time, or near the granary for the old APC¹)
- The leaders have to find a date and to make sure to inform all the members of the group.
- For the old APC, the seeds needed for the distribution should be prepared in advance: the leaders can prepare special bags with the quantity needed of each type of seeds according to the registration.
- The material for distribution should be gathered in advance (basins, plates, book, pen...).
- The weight of each type of seed should be converted into local measurement in order to ease the distribution and the reimbursement.

Material to prepare for the distribution:

- the APC book
- some basins and plates that correspond to unit weight for each seeds
- a table

The day of the distribution:

- Each leader has a specific role to play: eg. the secretary checks the loans and records the signature of the members, the treasurer weights and gives the seeds to the member, the chairman checks if everything is in order.
- The procedure of distribution can be as follow :
 - o Each member come one by one to the table of the secretary
 - o The member and the secretary check if the registration of the loan is ok
 - o The member goes to the treasurer and collects his seeds after checking the weight or the number of plates/basins required.
 - o The member goes back to the secretary to sign the record sheet at the right place.

NOTE: The members have to come with bags or basins to collect their seeds.

¹ Agriculture Project Committees

3- Seed bank reimbursement

Objective of the training

To train the committee members of each APC (chairman, secretary, treasurer) to:

- Organize and conduct the meetings for seed repayment
- Fill the different forms for members follow-up

1. Introduction

*Ask the question: **What is the objective of a seed bank?***

Facilitate the answer: to provide access to sufficient and quality seeds to the members.

*Ask the question: **What is the importance of reimbursing good quality seeds?***

Facilitate the answer: to increase the viability of seeds for next season.

*Ask the question: **What is the importance of reimbursing twice the amount received?***

Facilitate the answer: to distribute more seeds for the next season and/or to welcome new members and/or to sell a part in order to buy chemicals for good post harvest treatment.

2. Roles of each APC committee member

Remind the role of each committee member concerning the seeds repayment by asking first what they remember from the training on Group Dynamics:

➤ The Chairman

- To organize a meeting to remind the members of the group about the importance of seeds reimbursement for the seed bank.
- To organize meetings (date and place) for the reimbursement of each type of seeds.
- To control the quality of the seeds reimbursed (chairman can accept or reject seeds brought by a member).
- To visit and remind members who failed to repay.
- To ensure that seeds are kept in a safe place.
- To ensure that the procedures for a good and efficient storage are followed (post-harvest treatment).
- To facilitate the repayment by sensitizing the members on the aim of the seed bank and on the importance of reimbursing quality seeds and the amount required.

➤ The secretary

- To record all members who have paid and those who have not paid.
- To inform members on the date and place for the meetings.

➤ The treasurer

- To record the weight of seeds borrowed and weight of seeds reimbursed for each member (each member has to sign on the record book after repayment).
- To record the contribution of each member (members' signature are required).
- To find a safe place to keep the seeds.

3. The Agenda for the seed reimbursement

| When | What |
|--|---|
| April | Awareness meeting for seed reimbursement. The Chairman: - reminds to the members the objective of the Seed Bank and the importance of the repayment - reminds the limit date of repayment for each crop - informs about the date/place for the first repayment |
| Soon after the harvest of each crop | Meeting for the reimbursement of the crop. The members come with the amount of seeds to be repaid and the committee board members record and keep the seeds. |
| Soon after the repayment | The committee members in charge of the Seed Bank apply good storage measures for the seeds (to find a place; treatment for storage...) |
| After the reimbursement of all the seeds | The treasurer and the secretary make the whole calculation of the reimbursement and keep the data about the seed stock. The committee board members keeps safe measures for the seed storage. |

4. The Agenda of the meetings for each seed reimbursement

| | Who | What |
|---|------------------------|---|
| 1 | Chairman | Presents the objective of the meeting. Presents the organization of the repayment for the seed |
| 2 | Committee, all members | For each member, proceed to the repayment: 1. Quality controlled by the chairman 2. Weight controlled by the chairman 3. Data recorded by secretary and treasurer 4. Signature of the members who have repaid |
| 4 | Treasurer | Records the total quantity of seeds in the store. Keeps the seeds in a safe place. |
| 5 | Chairman | Controls that the seeds are put in the safe place. |

5. Recording of the reimbursement

The recording of the reimbursement should be done **by the treasurer and the secretary**. The way of recording depends on how the secretary and the treasurer have recorded the loan at the beginning:

- if – in the loan recording table – they have left blank cells in order to record the reimbursement and the signature of the members, they can proceed.
- If they didn't do so, they will have to create a new table and copy the amount of seeds taken and the amount to be reimbursed for each member and for each type of seed.

See the following example:

Table of seed reimbursement for maize:

| Name of member | Number of kg issued | Number of kg to be reimbursed | Number of kg reimbursed | Date | Signature of the member |
|-----------------|---------------------|-------------------------------|-------------------------|----------|---|
| Lawson Chaponda | 4 | 8 | 8 | 30/05/09 |  |
| Joefrey Zilombe | 4 | 8 | 8 | 30/06/09 |  |
| ... | | | | | |

4- Preparation of a new season for the seed loan

1. Reminder on the duties of the leaders

Refer to the training guideline on group dynamics.

2. Organizing a meeting to prepare the activity on Seed Bank for the second year

a. Purpose of the meeting

The leaders should organize a meeting with all the members of the group in order to present the results of the Seed Bank and to plan for the coming season. **It is very important that all the members attend this meeting because it will be the time for registration of the loans for the new season.** If some members can not come, they should absolutely send a representative.

b. How to present the results of the group

Some different data should be collected by the leaders in advance in order to be presented to the group during the meeting (*the data can be found in the books of the treasure and the secretary*):

- The money owned by the group;
- The main incomes (membership fees, selling of seeds...) and expenditures (Actellic...);
- **The amount of seeds in the granary and the reimbursement rate.**

After the presentation of the data, the members can discuss and ask questions.

c. How to plan for the next year

After presenting the data and discussing about it, it is the time to plan for the coming season. **The leaders should lead the discussion:**

- For each crop, start from the quantity that is in the Seed Bank (*ex: 160 kg maize*);
- For each crop, ask the members how many of them want to take that crop (*ex: 20 people*);
- For each crop, divide the quantity in the seed bank by the number of people interested, this will give the maximum quantity that can be taken per member (*ex: 160/20= 8Kg/member*);
- Then, the committee members can decide with the group a maximum amount to be distributed per crop: it can be the maximum (*in our example: 8Kg/member*) or it can be less (*for example: 4Kg/member*). In that case, there will be some seeds remaining in the store.

Then, the leaders can register the wishes of each member in the book of the secretary; there can be one page per type of crop, with the following information:

Maize

| Name | Surname | Quantity to receive |
|---------|---------|---------------------|
| Joefrey | Zilombe | 5 Kg |
| Owen | Tsoka | 6 Kg |

At the end of the registration of the wishes, it is very important that the secretary calculates the total quantities of the loan for each crop in order to make sure that there were no mistakes:

- if the quantity of seeds in the seed bank is less than the total quantity registered, then the maximum quantity to be given per member should be reduced;
- if the quantity of seeds in the seed bank is more than the total quantity registered, then the group can decide what they want to do with the seeds (sell it in order to buy inputs, etc.).

Then, if there are some seeds remaining, the leaders can facilitate a discussion with the members to decide what to do with the remaining seeds:

- New members can be welcomed;
- Some seeds can be kept in the store in case of poor harvest.
- Some seeds can be sold in order to:
 - renew the maize seeds after 3 years (OPV);
 - buy chemicals (fertilizers, actellic) at the group level;
 - buy other types of seeds;
- Any other use, as long as the decision is taken at the group level.

3. How to prepare the distribution of seeds

Refer to the 2nd training (page 3).

5- Post-harvest treatment

A- Introduction

Remind to the farmers the main objective of the Seed Bank: to improve food security by having an access to improved seeds and to solve the problem of lack of seeds.

How does it work: the members will reimburse the seeds to the committee. The seeds reimbursed still belong to them: they will store them properly as a group. Therefore, they will already have seeds in their seed bank to sow for next season.

Quantity of seeds: if all members reimburse well, they will have twice the quantity that they had this year (*Give an example*). This quantity will allow them to distribute more seeds to the members next year and/or to welcome new members and/or to sell a part in order to buy chemicals for post harvest treatment.

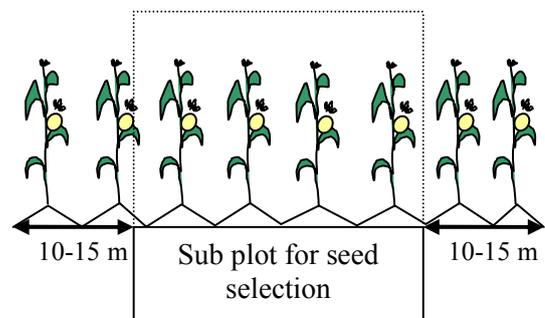
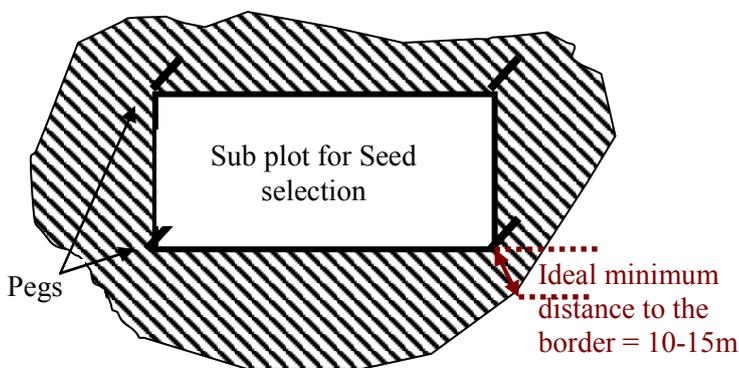
Quality of seeds: the seeds reimbursed have to be of very good quality. Ask the farmers why? Facilitate the answer: the seeds selected will be sown and will be the basis for the plants of the next season: good seeds will lead to a good growth of the plants and to a higher production. Therefore it is very important to select the better seeds for the reimbursement to the APC.

B- Seed selection²

Seed selection from the field

➤ Demarcation of a sub-plot in the middle of the garden

Select a plot from the centre of the field since the ones on the boundary are polluted by other crops surrounding (especially when there are crops of the same specie).

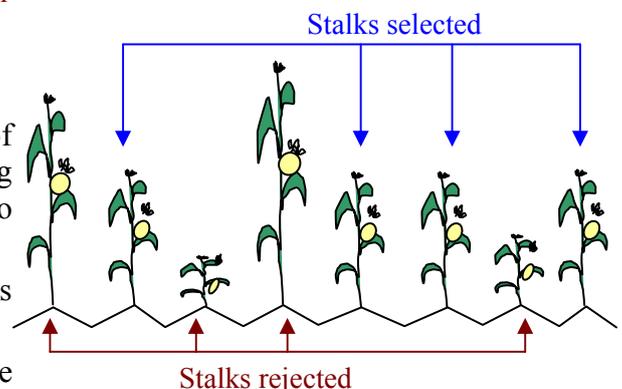


➤ Maize stalk selection

64 standard cobs size should give around 8kg of grains. Maize stalks must have a good general looking and an average height of 2.5m for OPV maize (not too high, not too small).

Selection should not be made on anthills and in places where crop residues were heaped.

Detassel (cut the top part) or peg the plant. This will be used as a marker to identify the selected plant.

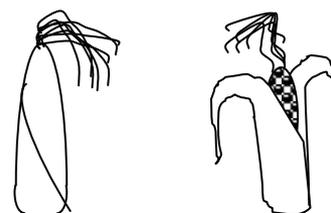


² Source : Daniel Rupp, programme manager « Agro-Chikowi » in Malawi since November 2006.

➤ **Cobs selection**

Cobs selected must have closed tips as on following drawing:

Cobs must be harvested when fully dry. It means that the maize stalk and leaves are completely dried.

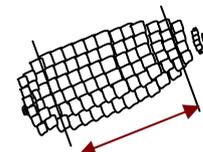


Closed tips cob
Cob selected

Open tips cob
Cob rejected

➤ **Seed selection from the cob**

First select the cobs by rejecting the smallest and the ones presenting diseases or not general good looking. Check that grains are in straight lines on the cob. Grains from the middle part of the cob are kept for seeds.



Selected grains

➤ **Re-dry seeds before storage**

Seeds have to be spread on the mats and dried under the sun (0.5-1 day according to moisture).

Grading

The seeds have to be graded. Only the first and best grade will be used for repayment. All the weevilled, broken, deformed and shrivelled seeds should be removed for home use and the rotten ones should be thrown away.

Before resowing the seeds, a germination test can be done to ensure that the seeds kept are good. Following is the procedure to be used:

4. Take a sample of 100 seeds, plant them on a seed bed and water as necessary.
5. Count the number of seeds germinated → this gives the percentage of germination on 100 seeds: below 80%, the percentage of germination is too poor / above 80 %, the percentage of germination is good / above 90 % the percentage is very good.

C- Seed storage techniques

Ask the question: *What is the importance of efficiently storing seeds?*

To ensure safe seeds keeping and to minimize seeds loss for next season

Ask the question: *What are the reasons for seed loss during storage?*

For each reason mentioned, ask: *What are the solutions to reduce loss during storage?*

| Reasons of loss during storage | Solutions |
|--------------------------------|--|
| Pests/insects attack | Natural and chemical treatment |
| Rodents attack | Traps, poison, rat guards |
| Humidity causing moulds | Good ventilation and well dried seeds |
| Human theft | Good and strong warehouses in a safe place |

Present the staking method: bags of seeds should be placed on pallets which are 0.5m from the wall, to avoid moisture.

Preventing measure taken before harvesting

- Remove infested cobs before storage.
- Check pest presence on seed before storage.
- Complete cleaning and repairing of the granaries or the place where seeds are stored.
- Selection of store location, far from insect infested areas.
- Choice of time of harvesting, not too early or too late.

Pest and disease control

Natural Treatments

- Wood ash (from kitchen stoves or blue gum), fine sand, inert dust / clay dust: to be added on top of grains into different layers. A large quantity is required. Ash and dust cause the death of insects while sand prevents their migration from one bag to another.
- Tephrosia vogelli (1g/Kg) and/or Neem seeds of leaves crashed into powder

In any case, all seeds have to be cleaned before consumption.

Chemical Treatment

☠ Actellic is the most common chemical treatment for seed storage but it is dangerous for human health and environment. Therefore, encourage the farmers to use more natural treatments. As it is a poisonous product, it must be manipulated with protection (mask, gloves...). Bags/bottles waste should not be thrown in nature.

Application recommendation: 25g per 50kg bag / for liquid actellic, check the label instructions.

Storage location and construction of granaries

Ask the question: *Where will the seeds of the group be stored?*

Write the answer on the flip chart and facilitate participants to give advantages and disadvantages of each answer. Encourage them to make a choice in a short and long run.

| Storage method | Advantage | Disadvantage |
|-----------------------------|---|--|
| At each group members house | Safe place to keep seeds | Misappropriation of seeds (used instead of kept for next season) |
| At local leaders' house | Safe place to keep seeds | Misappropriation of seeds. Lack of place. Less control from treasurer. |
| At the treasurer's house | Safe place to keep seeds. No misappropriation of seeds. Information well kept by the treasurer. | Lack of place to store the seeds. |
| At a communal warehouse | Enough place. Good storage conditions. Same advantages as for treasurer's house. | Needs contribution from each member for construction. |

If farmers decide to build a granary to store the seeds in a long run, advices can be given:

- Good and strong racks should be made of stones footings (or concrete footings if cement is available). Plastic can also be used on the footings.
- The whole body can be made of bamboo. The roof can be made of bamboo + grass and covered with plastic paper to protect from rains.

In any case, the room for storage should be well ventilated and roomy to avoid moisture and well protected to avoid termites, rats and thieves.

C- Right food content planning

Most farmers tend to have troubles to plan for their own food to eat throughout the whole season. Sometimes, the food harvested is enough but it runs up during the food gap in the months of Jan, Feb and March, due to the following problems:

1. Overselling of the productions especially when the prices are high.
2. Lack of margin analysis, profit calculations and plannification: just after harvesting, farmers carelessly cook food in very large amount ending up starving from Jan, Feb...
3. Too much importance given to *nsima*: farmers can also eat rice, cassava, sp, pumpkins.

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