



Our partners:

Wageningen University	Universidade Eduardo Mondlane	ICRISAT	Instituto de Investigação Agrária Moçambique	Serviço Distrital Actividades Económicas Massingir
				

Overall Project Aim

To mitigate risks of human impoverishment and natural resource degradation commonly associated with population resettlement

through efforts to improve food security by means of strengthening seed security.

Specific Project Objectives

Objective 1: Explore how resettled residents adjust their livelihood activities in short term response to resettlement and increased competition for resources

Objective 2: Put in place measures to improve seed security in the post resettlement area to alleviate pressure on natural resources in and around the park

Project Activities

Objective 1

1. Continued research on the impact of resettlement on livelihoods

Objective 2

2. Collect and describe local germplasm
3. Begin a participatory varietal selection process
4. Training for local agricultural extension agents and farmers



Project Background

Post-resettlement livelihood rehabilitation important, as for any resettlement initiative

Food security in the region highly dependent on extensive agriculture

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more people on less land as a result of resettlement

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Need for intensification of agriculture

The introduction of improved varieties is a low- input way to potentially increase agricultural production.

Preliminary results, objective 1

1. Continued research on the impact of resettlement on livelihoods: Resettlement one year later



Resettlement: one year later

Agriculture

- Average land holding of 4.6 ha per family in pre-resettlement location
- Each family received 1 ha of land opened by the LNP
- These fields were only ready one year after resettlement
- Remaining land was compensated for in cash and irrigation was promised
- The area they were given is too far from the river for irrigation
- But so far the host village has not granted more land to the resettled village for irrigation



Resettlement: one year later

Agriculture

- Informally, most families have managed to borrow additional land from host village residents for rain-fed agriculture
- Land tenure of borrowed fields is uncertain: Unopened land often granted, tenant opens field and then the owner takes it back, or after one year of cultivation
- Access to land (permanent tenure) is likely to only be available for future generations through intermarriage and inheritance in the host village
- 1/3 of village have secured fields (permanent tenure) on the other side of the river, inside the park



Resettlement: one year later

Livestock

- Before resettlement residents had access to a practically unlimited grazing area for few animals (200). The area for grazing in the post resettlement location is smaller and used by 6 times more livestock units (1285).
- In the pre-resettlement location, livestock theft was rare and herds often wandered unaccompanied, sometimes for weeks at a time during dry season
- In post-resettlement, children have had to stop studying to take livestock to pasture or families have had to hire a cowboy
- Livestock has been stolen from the village leader's corral and most families rebuilt their corrals inside of village

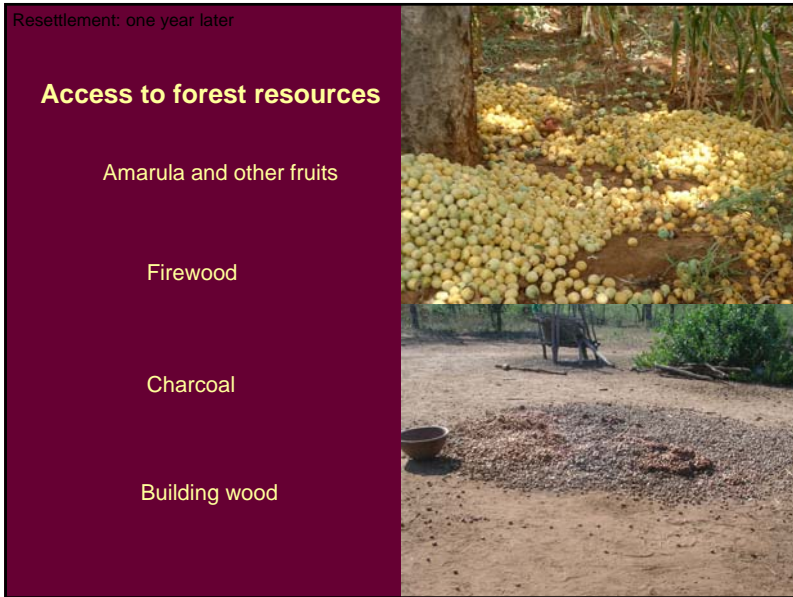


Resettlement: one year later

Market integration: labor and products

- Increase in number of families selling things
- Increase in opportunities for wage labor





Resettlement: one year later

Water from the borehole provided by the park is salty and not suitable for consumption. Residents bring water from the host village borehole and have to pay a monthly fee.

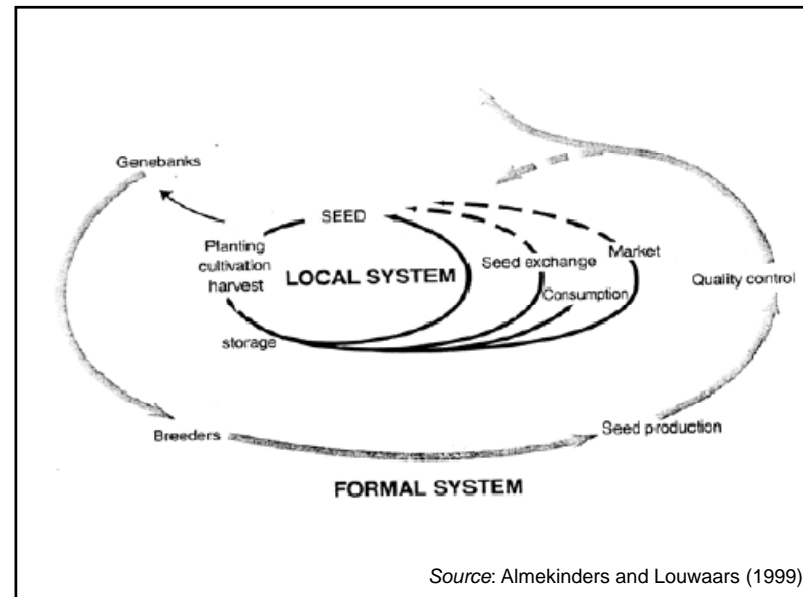
Access to potable water was free in pre-resettlement from the underground waters in the river bed

No family has drastically changed livelihood strategy yet

BUT in general there is an increased dependence on money and decreased access to natural resources in comparison to pre-resettlement conditions.

Preliminary results, objective 2

Objective 2: Put in place measures to improve seed security in the post resettlement area to alleviate pressure on natural resources in and around the park



2. Collect and describe local germplasm.

Seed collection trip

Seeds were collected (27 landraces from 9 crops) in 4 villages inside the LNP in March 2009

Maize and sorghum landraces are being characterized by the National Genebank



Seed fair in Chinhangane

Awards were given to farmers with the best quality seeds and the most agro-biodiversity. Three seed companies were also invited to sell their seed.

We documented agro-biodiversity difficult to perceive through interviews

We hoped to explicitly send the message that despite our work with improved varieties, the conservation of landraces is also important for seed security.



3. Begin a participatory varietal selection process

- Two rounds of variety trials on two agricultural associations in the host village
- On-farm trials for 75 farmers including resettled and host residents
- Multiplication and conservation of seed of preferred varieties

Variety trials

1st Round

RESULTS

3 varieties of maize

Evaluations pre and post harvest (taste)

2 varieties of sorghum

3 varieties of cowpea

2 varieties of maize (Djanza and Changalane) and 2 of cowpea (IT16 and IT18) chosen as most preferred

2 varieties of pigeonpea



Survey carried out to explore more about preferences and plan second round of variety trials



Variety trials

- 3 varieties of maize
- 2 varieties of cowpea
- 4 varieties groundnut
- 5 varieties sweet potato
- 3 varieties cassava

2nd Round

Trials are still in the vegetative/flowering state.



On-farm trials: spreading the seed

Seed from 6 varieties of 4 crops was distributed to 75 farmers

Follow-up of the farmers' perception of these varieties will be carried out



Seed multiplication

Losses due to pests in first round of trials, lack of availability in the formal seed system and high demand for seed resulted in a need to multiply seed.

Unfortunately our first attempt was decimated by a hungry elephant.

But our second attempt so far is going well.



Seed conservation

Post-harvest losses are considered by farmers to be among the top 3 threats to food security (together with elephants and heat).

To increase sustainability of project activities, the associations have begun to build improved graineries to store the multiplied seed and basic seed of all tested varieties.



4. Training for local agricultural extension agents and farmers

- Capacity building for farmers: seed multiplication, seed conservation, cooperation, leadership, gender
- Capacity building for extension agents: training of trainers in commercial and non-commercial seed multiplication
- Farmers visit private and public variety trials
- Workshop to bring together formal and informal seed systems



Visit to MIA (private company) variety trials



Visit to National Research Station variety trials

Dilemma of agricultural development models





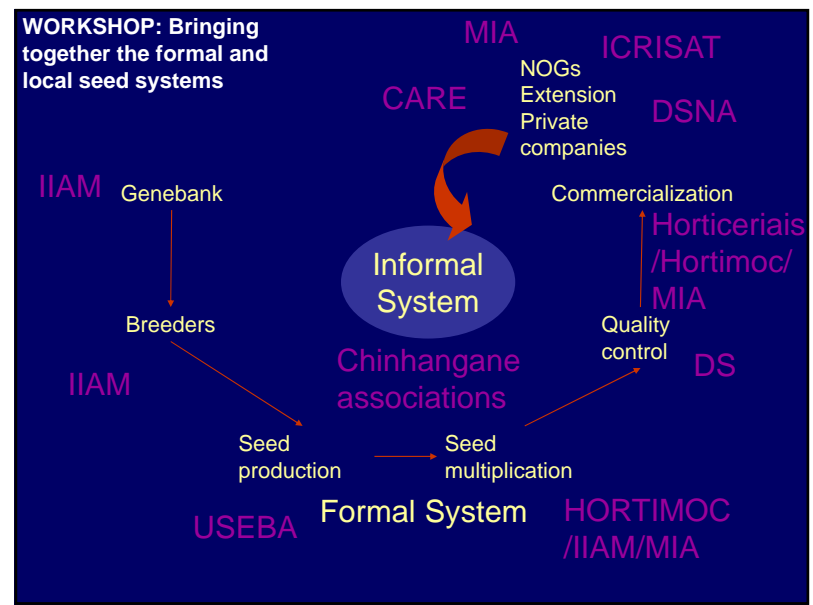
↑ Training of trainers



Trainers training farmers ↓







The second day of the workshop was dedicated to developing action plans for improving availability of seed in rural areas through local seed production



Farmers were invited to the workshop. To prepare their presentation, they were given disposable cameras to take pictures of their seed system and write a narrative to accompany the pictures.



Project Impact/ Output

The question of how much this work on seed security has contributed to improving food security can only be answered in the future.

But glimpses of changed practices were caught in the field (see pictures).

And the introduced varieties have already been planted in fields outside of any project activities indicating initial stages of adoption.

Networking between the district level agricultural services and the national research institute

Drafts of two scientific papers have been written



Infected plants are being removed from seed multiplication plots



Seed is being selected from the middle of the cob.

Catalyzing action of the project: new initiatives

- Commercial seed production in Massingir (sub-contract by the seed company MIA with private farmers, accompanied by SDAE and certified by the National Department of Seed).



- The debate and action plans that emerged from the workshop and from the training sessions with farmers and extension agents inspired local partners to develop a proposal for future work.

Reflections

1) The learning process over the course of the project was more important than the results of the variety trials (WHAT IS A SEED??)

2) The biggest challenge was breaking down farmers' perceptions of 'project' to attain meaningful participation

3) Social integration between resettled and host villages can be facilitated through this sort of initiative

4) The host village benefitted more than the resettled residents because of lack of access to irrigation by the resettled village.

Conclusions

The right to sufficient land for agriculture needs to be allocated to resettled residents to avoid that they return to the park area looking for fields or other resources such as game

If there is not enough land available, the park must provide tangible, immediate alternatives to land-based livelihoods for resettlement to be sustainable, or decide not to resettle villages

Improvement of the agricultural system through improving seed security is one potential intervention, but insufficient to balance out the costs of resettlement for both the people resettled and the surrounding environment



Thank you AHEAD for this opportunity!