



**INTERIM REPORT TO THE MAIZE TRUST ON  
THE ACTIVITIES OF THE LIMPOPO  
AGRICULTURAL STRATEGIC TEAM (LIMPAST)  
APRIL-OCTOBER 2004**

*Report prepared by CPR Cronjé*



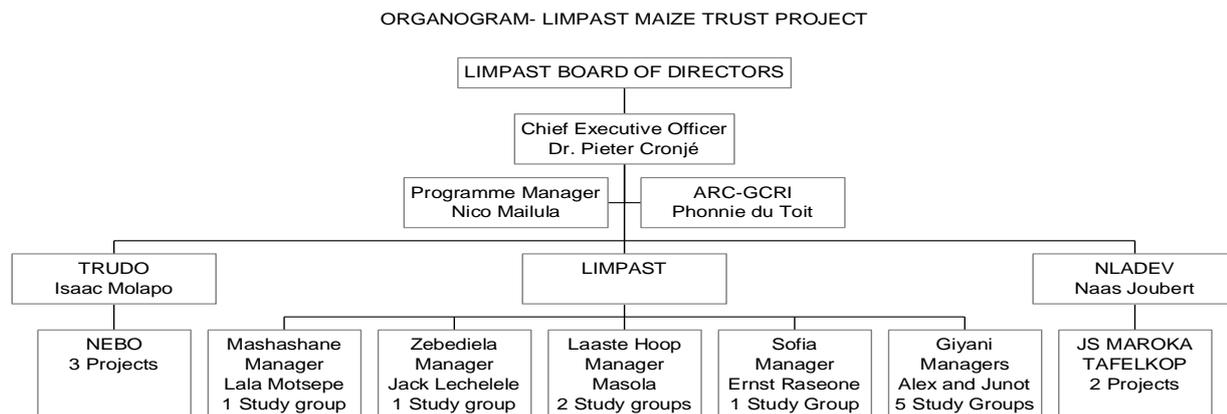
## Abstract

The project aims to improve maize production in selected areas in the Limpopo Province thus contributing to making the province more self sufficient in terms of local maize production. The project is part of a strong support structure in the form of LIMPAST as the managerial body, Progress Milling the marketing body and the ARC-GCI as the technical support arm. Within the specific agro-ecological context of the target areas the project holds promise to making a substantial contribution to improved household food security and more sustainable grain production systems. A diagnostic survey, however, conducted early in the project cycle, indicated that prospects for viable maize production in these areas are very low and that a one-sided focus on maize production is not advisable. In order to address the high risks involved with maize production, a number of alternative options were considered during the course of the first year of the project. In addition, measurements were also taken to improve the day-to-day management of the project, especially in terms of farmer participation as well as other shortcomings in the project. This interim report gives a clear exposition of the achievement of the original goals, problems encountered and suggests various changes in focus of the project.

## Identification of the project and the project leader

The Limpopo Agriculture Strategic Team (LIMPAST) is involved with the management and co-ordination of a maize production enhancement project with emergent farmers in rural areas of Limpopo.

The project management structure is as follows:



Dr. Cronjé is the project leader

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## The goals set to be achieved in the LIMPAST grain advancement programme

- Goal 1: Assessment of agro-economic potential
- Goal 2: Provision of training and information
- Goal 3: Establishment of links with service providers
- Goal 4: Facilitation of group empowerment

## Actions that have been taken with regard to the project up to date

### *Report of activities towards the end of the 2003/2004 season:*

The 2003/2004 season was again “abnormal” with significant rains only falling late December, and towards the end of January. The LIMPAST board directive to program managers was that no planting should be done where less than 40mm of rain were recorded within a two-week window. In all the trail areas this occurred in December, with Ga-Rampuru falling just outside this window. Demonstration trails could not be established at Sophia due to technical hold-ups in the area. Tree stumps that needed to be removed from the field could not be removed with the small tractor available, and no alternate area was available for trail establishment.

In all areas with the exception of Ga-Rampuru and Laaste Hoop, germination were satisfactory and early growth promising. The lack of follow-up rain in Zebediela, Laaste Hoop and Ga-Rampuru eventually caused a crop failure in these areas. The Giyani, Dihlopaneng and Mashashane areas yielded well.

**Table 1: Variety ranking based on yields at 5 trail sites:**

VARIETY	YIELD IN Kg/ha	RANK
SAM 15	3776**	4
SAM 19	3771**	6
CS 621*	3912**	1
SAM 23	3568**	7
SAM 43	3433	
SAM 37	3732**	5
PHB 3253*	3133	
SAM 49	3382	
ZM 521	3359	
SAM 13	3787**	3
CRN 3549*	3314	
SAM 11	3328	
ZM 611	2972	
SAM 17	3202	
PAN 67*	3876**	2

AVERAGE YIELD 3485

\*HYBRIDS

\*\*VARIETIES PERFORMED ABOVE AVERAGE

These yields were very significantly higher than the average yields obtained in the areas, where yields of 500-700 kg/ha is common in the high-veld areas, and 1.8 to 2.2 ton/ha in the low-veld.

## **Report on current season activities**

### **1. Exhibition and information days**

The Department of Agriculture in Limpopo invited LIMPAST to exhibit at the agricultural show in Polokwane (3-8 March 2004). Several visitors were attracted to the exhibition, and 1500 cultivar information pamphlets were distributed.

Information days that included contributions by the ARC-GCRI, ARC-SCWI and Bayer were held as follows:

2004/04/06 Zebediela

2004/04/20 Mashashane

2004/04/29 Giyane

These information days were well attended, and apart from the study groups, a further 200+ people attended at each venue.

All the extension officers have completed consultative planning for their areas, and soil preparation service providers have been contractually bound to providing the necessary services for the coming season. We now all await the rain for the new season before commencing soil preparation.

## **Progress that has been made with the project**

### **New areas**

In the new areas of Nebo and JS Maroka, study groups have been formed

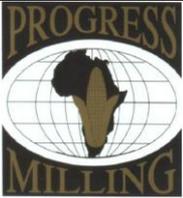
<b>Project</b>	<b>Study Group Membership</b>	<b>Number of farmers who are willing to cultivate their fields this season</b>		<b>Ha</b>
Troya (Vaalbank)	18	Min 50	Max 120	60 to 150
Rooifontein (Moretele)	30	Min 27	Max 70	35 to 110
Klipplaatdrift (Siyabuswa)	16	Min 30	Max 90	36 to 120
Tafelkop (Sekhukhune)	27	Min 30	Max 120	36 to 160

- The number of farmers participating will depend on the rainfall. Early rain showers of 50 mm and more could even lead to more participators than the maximum figure indicated.
- Generally farmers are reluctant to apply for loans at financial institutions because of the interest charged and the risk not of being able to pay back the loans.
- Majority of interested farmers are pensioners and they will finance themselves out of their personal savings.
- Four Extension Officers have attended the technical training offered by ARC-GCI at Potchefstroom, and will therefore be able to guide their study groups during this season.
- All four groups have been linked with service and input suppliers with regard to
  - Mechanisation services.
  - Seeds, Fertilizer and other inputs required.

The soil sampling and analysis in the new project areas has been concluded. LIMPAST personnel have visited all the project areas and seasonal planning was done with the inputs of the local communities.

### Links established

Since October 2003, there has been a series of meetings with various collaborators, and the following list shows current collaborators and their role in the LIMPAST program.

Logo	Name	Role in LIMPAST Program
	Progress Milling, Polokwane	Main sponsors of farmer's days. Provincial linkages to various Government Departments. Provides market for maize produced in LIMPAST program.
	Progress Community Development Forum	Discussion and collaboration forum hosted by Progress Milling. Most Provincial service providers associated with rural development are represented on this forum. LIMPAST collaborates in the forum This is the main point of contact with various service providers

	Agricultural Research Council	The ARC-GCRI is probably the mainstay of the LIMPAST program. They are collaborating in the management, training and service provision levels of the LIMPAST project.
	Limpopo Department of Agriculture	Contribute Staff- Program Manager, Assistant Program Managers. Political backing and collaboration at all levels in projects
	Broadening Agriculture Services and Extension Delivery	The German Government (GTZ) supports by the BASED program. They are responsible for mobilizing and organizing several communities around agricultural production. The collaboration with LIMPAST removes duplication and strengthens the respective programs
	ICRISAT (International Centre for Research in the Semi-Arid Tropics) Low Fertiliser Program	The collaboration with this program tests the use of fertilizer at low rates within the LIMPAST program. This portion of the program is paid for by ICRISAT. They make use of the LPDA personnel and LIMPAST study groups for their research.
	NLADCO	Collaborates in the running of 2 projects on behalf of LIMPAST in the Tafelkop and JS Maroka Municipal area. This program is supported by the Maize Trust
	Tafstermann Rural Development Organisation	A BEE company based in Nebo that runs three Maize Trust supported projects in the Nebo area in collaboration with LIMPAST
	Grain South Africa Development Farmer Program	LIMPAST is collaborating with the GSA program, and acts as Provincial Agent for the program in LIMPAST. Activities limited to attending work group meetings and distributing the Pula and Imvula to LIMPAST study groups.

## **Results that have been achieved so far**

### **Group formation**

The Limpopo province has very few “empowered” small-scale commercial farmers. The climate and other conditions are more suitable for livestock farming than agronomy. The farmers that are involved with sustainable agronomy/horticulture are all involved with cash crops or citrus production. As such, the potential of the small-scale maize farmer to develop beyond a household subsidy/food security level of maize production is limited. This type of scenario is repeated in parts of KwaZulu-Natal and the Eastern Cape. In spite of this, some of these farmers succeed in producing enough maize to sell to mills.

The common starting point for all the LIMPAST regional projects are the formation of groups to facilitate co-operative effort. This is one aspect that can make the small-scale production more profitable and sustainable. It also facilitates easier technology access to the groups.

### **Technology**

In the LIMPAST program we have to find solutions to limited production potential. It is clear that conventional practises would have to be revised in order to put maize production on a sounder economic footing in most rural areas in Limpopo. Lengthy discussions with the various role-players in the LIMPAST program have taken place during the recent months, and the following strategies discussed:

- The variable and usually very low rainfall is probably the main yield-limiting factor for maize production by the emergent farmer
- The soil potential in most of the high-veld areas is low. Soil is often very depleted in nutrients, and generally unsuitable for maize production
- It is clear that in spite of these factors, maize will continue to be produced by the rural farmer as a crop of choice, a case in point being the size of plantings and eventual yields obtained in the Ga-Rampuru district. This sub-marginal maize production area achieved a district-wide yield averaging 2 ton/ha with maize planted very late during the past dry season.

- It is accepted that little can be done to ensure a consistently reliable yields in these areas. We need to consider the limitation of production cost as probably a more important aspect in economically viable maize production in these marginal areas since the vagaries of rainfall cannot be quantified.
- In this regard the use of low doses of fertilizer, the careful selection of varieties (mainly open pollinators), rainfall harvesting, moisture conservation and the costs of soil preparation can all contribute towards making the production of maize more profitable.
- On all of these aspects of cost/risk mitigation, the LIMPAST team has made significant progress over the past two years.

## **Problems that have been encountered with the project;**

### **Farmers:**

The small-scale farmers has highlighted the following problems as the biggest production constraints:

- In most cases we found pest control to be the problem that they want to be assisted with
- The lack of fencing around their own land
- The new pattern of mid-summer droughts.
- Need of access to more land- most units are too small for dry-land production
- More training in order to have knowledge on modern technology about crop production in order to move from hand to mouth production to profit making production
- unavailability of mechanisation.
- Market access problems due to scale of production
- availability of inputs at reasonable prices
- Alternative crops to establish new production options. The suggested crops are
  - Groundnuts
  - Bambara
  - Cowpeas

Most of these aspects are under control to an extent, and is indicating a need for the training and facilitation role of LIMPAST should continue.

### **Institutional matters**

The aspects that LIMPAST do not have direct control over and are cause for increasing concern is the following:

#### *Capacity of the ARC-GCRI*

There has been a consistent and increasing manpower problem with the ARC-GCRI personnel involved with the LIMPAST project. In essence we have moved from the direct involvement of approximately 6 personnel two years ago to just one for the current season. Although we have planned for this to an extent, the decline in capacity is of serious concern. The LIMPAST is one of the top 10 projects at the ARC-GCRI (see table below), and still the capacity to service this project is declining annually.

*ARC-GCI TOP 10 PROJECTS (2004)*

<b>Project Number</b>	<b>Project Title</b>
M105/10	Comparison of integrated crop rotation, tillage systems and fertiliser application on economic and sustainable crop production on the Highveld
<b>M171/31</b>	<b>Grain production advancement (LIMPAST)</b>
O15/05	Bacterial diseases of dry beans
O15/02	Fungal diseases on dry beans and the development of resistant lines
M101/10	Evaluation of maize cultivars and open pollinated maize varieties for different production systems
M102/01	Determine the malting- and processing quality of sorghum cultivars and varieties
<b>M161/80</b>	<b>Participatory evaluation and identification of maize varieties for small holder farmers in the Limpopo Province</b>
M141/60	Soybean rust: Risk analysis, loss assessment and quantification of the epidemiological value of intervention technologies
M181/10	Maize Information Guide (MIG)
<b>M171/160</b>	<b>Sustainable mass food (grain) production for resource-poor farmers</b>

## **Development duplication in some areas**

In the process of government departments becoming more aware of service delivery, there has been a spate of project development that did not include consultation with all role players. This inevitably led to the duplication of similar projects in areas where LIMPAST have been active for some time. Some of these problems have been sorted out, but LIMPAST would prefer to service areas where there is no government assistance or projects to avoid duplication of effort and costs. LIMPAST has discussed the problem with the Limpopo Department of Agriculture, and are now collaborating closely with the BASED program.

## **Sub-marginal areas**

These areas remain a challenge. Maize is produced, and sometimes even substantial yields obtained, but over time the trend is sub-economic production. LIMPAST cannot support these programs with the Maize Trust funding for any period of time, but also do not have the financial capacity to assist these farmers to find alternative crops or maize cropping technical adjustments. The need for intervention is there, but cannot be addressed at present.

## **Milestones which may not have been achieved and the reasons therefore**

### **Technology**

### **Replacement crops and cropping opportunities**

The lack of conclusive results in our demonstration trails continues to hamper the obtaining of definitive answers regarding the best varieties and cropping practices. The purpose of the trials is to identify varieties adapted not only to conditions of low soil fertility but to low production potential circumstances in general. The majority of these varieties are open pollinating varieties (OPV'S). The purpose of this is to address the problem of high seed costs to small-scale farmers. In addition, the lowering of risks involved with high input rates (high-expense) for high potential/higher risk varieties is also strongly considered. Thus, the motivation for OPV's is

- a) to curb high seed costs and
- b) to lower the risks of maize production.

Solutions for low soil fertility will also remain to be an important part of improved yield objectives. A sub-project with ICRISAT forms part of the LIMPAST projects. The aim is to search for solutions to the low soil fertility problem in the project areas.

Crop diversification and introduction of legumes into cropping systems will surely contribute to more sustainable farming units. The demonstration trails includes blocks of alternative crops this year (Funded by the ARC-GCRI)

Conservation tillage. Although a very new concept in practice, this is strongly promoted in the areas where the potential for success exist- Giyani and Sofia.

These technology challenges will eventually met, but the variability of rainfall continues to hamper rapid progress.

### **Assessment of the adequacy of the funding to complete the execution of the project in the form of an expenditure statement**

There have been little expenses so far during the current financial year. The major expenses usually occur when we move into the planting, growing and harvesting cycle. We are on track with the proposed budget, and all planned actions will be covered by the existing Maize Trust donation.

We need to point out that most of our training and other activities coincides with this, and therefore the major expenses are scheduled for the period October-February annually. We currently show a surplus of approximately R21 000.00 for the current financial year.

A spreadsheet showing the actual expenses to September 2004, and the budget from October 2004 to February 2005 is shown on the following page. Audited financial statements for the period March 2003 to February 2004 are available at the LIMPAST offices.



### Estimated duration of the project.

The table below summarises the changes in the LIMPAST program. It has clear that there has been a shift in activities during the program development. The duration of the project needs to be on an ongoing basis, since several regions in Limpopo are not currently included, and has the same need of intervention.

The scientific part of the LIMPAST program requires another three years to complete, but the training and assistance portion will be on-going.

Year	Areas Included	Areas Excluded	Comments
2002-2003	Ga-Rampuru Mashashane Dihlopaneng Laaste Hoop Zebediela Gyani (1 site) Mothiba Sophia		Sub-Marginal Sub-marginal but well managed Detrimental Political influences- No extension officer Marginal Some political influence- marginal Good development Marginal- no extension officer Good area- poor extension participation
Total	8 sites		
2003-2004	Mashashane Laaste Hoop Zebediela Gyani (3 sites) Sophia Nebo (3 sites) Tafelkop (1 site) JS Maroka (3 sites)	Ga-Rampuru Dihlopaneng Mothiba	Sub-Marginal: Good yield last year Sub-marginal but well managed No extension officer- in BASED program area Marginal- consider expansion to serve two farmer groups Marginal but with good theoretical potential Good development Marginal- no extension officer- community offers to take responsibility for trail themselves Good area- poor extension participation (On probation) In collaboration with TRUDO In collaboration with NLADEV (separate funding) In collaboration with NLADEV(separate funding)
Total	14 sites		