



# ***Turning unproductive waterways from drylands into banana fields***

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**Theme: Production**

# Introduction

- Banana has been grown on the high areas of Arusha region which have satisfactory water requirements for their growth.
- Little banana growing on the lower areas and the areas on the leeward side
- Introduction of bananas in these areas has facilitated poverty alleviation in the households

# Intro.....

- Likamba village is in northern Tanzania, Arusha district, Arusha region. Likamba stands on the leeward side of mount Meru and therefore receives little rains. It is endowed with hills and valleys and is residence to pastoralist tribe of Waarusha/Wamaasai. The little rains that fall on the hills concentrate into valleys to form short lived floods and before this project, these valleys lay waste with no beneficial/productive use.

## Introduction contd....

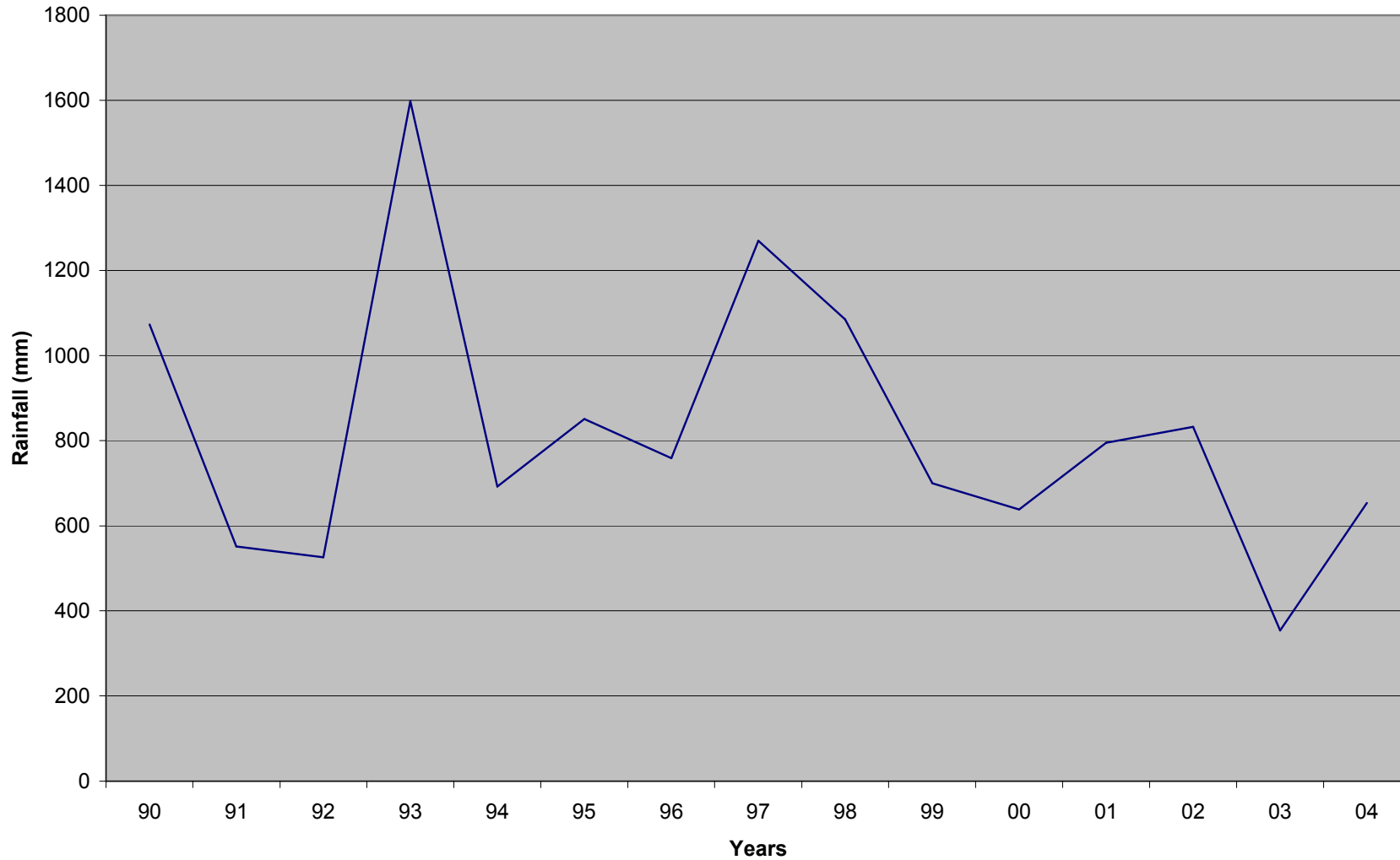
- Rainfall pattern is bimodal with short rains between October and December and long rains between February and May.
- Being on the leeward of Mount Meru, rainfall is relatively low and unreliable i.e. the amount of rainfall ranges from 400mm in the lowlands to 900mm in the highlands; but the average is below 600mm.

- Sometimes heavy storms that last for few minutes to hours in bare soils may result into accumulation of a lot water which further results into soil erosion and has contributed directly to low crop production, leading to food insecurities.
- There is a rainfall decline since 1997 when the annual rainfall amount recorded was 1,220mm but dropped to less than 400mm in year 2003 (TPRI rainfall recording station).

- In between the hills are waterways which during the rainy season collect a lot of water and form a river-like flow which is limited to a few minutes after the rains, leaving a major degradation of the soil and destruction of the landscape.

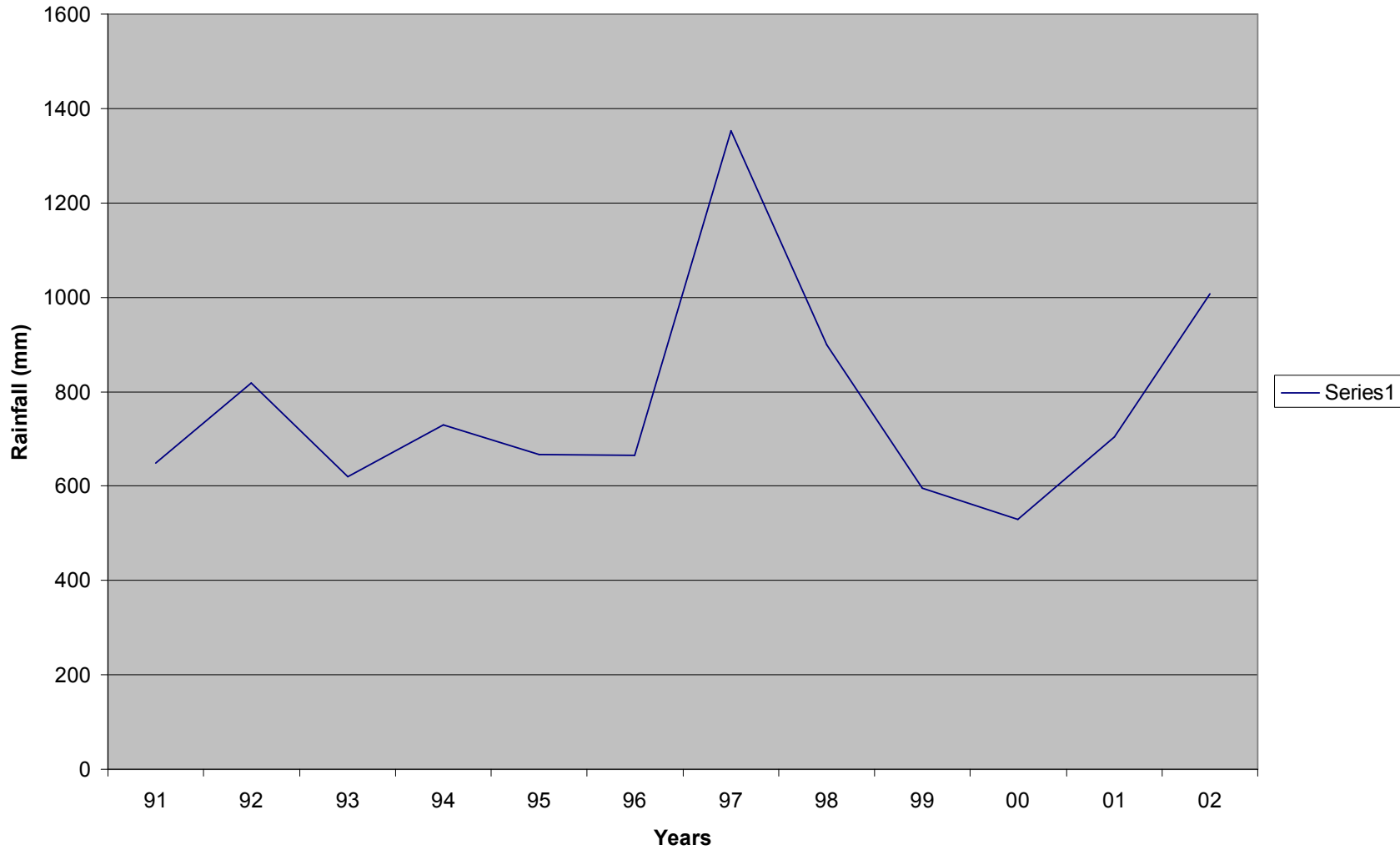
- Although Likamba receives heavy rains during the rainy period, it also goes through a period of dry season which dries out most of the crops and since there is no water for irrigation (even water for domestic use is scarce), most of these areas are left unutilized.
- A combination of Dryland farming techniques and soil & water control measures were used to harness this rare resource for crop production.

### Annual rainfall trend since 1990 - 2004



Rainfall data for the Likamba area for the years 1990 – 2004 from TPRI station. TPRI is about 3 km NE of Likamba.

Annual rainfall trend from Aiport station, 1991 - 2002



Rainfall data for the years 1991 – 2002 from Airport station.  
The airport is about 6 km SE of Likamba.



Serious soil erosion in Likamba village situated in midland zone

## Some common land degradation features in Likamba



BRIDGING TECHNICAL GAP

## Problem analysis

- Immigration of persons into the area leading to utilization of marginal lands
- Nutrient mining due to continuous cultivation on the same land
- Over stocking and free grazing
- Unreliable rainfall (erratic)
- Lack of knowledge
- Low financial capacity of farmers
- Failure to utilize runoff and waterways productively

## **Interventions to utilize the waterways**

- Working groups in the village (25 – 35 persons per group).
- Two farmers had waterways in their farms
- Banana was selected as a viable crop which could withstand the large water volumes which flow through the waterways during rains and could also withstand a period of dry weather without drying out.

# Farm layout

- The farmers were instructed on how to lay out their farm.
- The laying out was done on uncultivated pieces of land in order to ensure that when the rains fall, there will be no erosion.
- Digging of the banana holes including the addition of farmyard manure and planting was done.
- After planting, the banana plants were watered with water fetched on donkeys to ensure they survived the dry season.
- The field was left uncultivated and only the area around the plant was weeded as shown in the photo. When the rains fell, the water flowed through the banana fields but with enhanced water infiltration and without degradation effects on the soil.

**Photo 2: Banana stools established on uncultivated land to reduce soil erosion and enhance infiltration of water**



**Photo 3: The same field, several months later.**





**Government official listening from Likamba Village secretary narrating the activities sponsored by HSH. In the forefront is napier grass for reducing the speed of runoff, thus preventing soil erosion.**

# Challenges

- Long dry seasons may cause severe stress of some banana stems but in most cases they recover after rains.
- High establishment cost
- Reluctance to change crops that are cultivated

# Results

- Banana has become a source of food and income in an area where it did not exist.
- Good erosion control in this farm this far
- Formerly unutilized land has now become a source of employment, food and income all year round.
- Social linkage ease the adoption after seeing results
- Diversified source of income

## Results continued

- The introduction of banana has led to automatic control of free range grazing to some extents.
- Well integrated crop-livestock integration in a drylands.
- Food security
- There's ready market within the village

## The way forward

- The demand for seedlings is high and many other farmers have planted bananas.
- Further utilization of the waterways for production using catchment and sub-catchment approaches.
- Formation of marketing groups
- Look into the possibilities of processing

## Conclusion

- The introduction of the dryland farming technology and the utilization of waterways for the production of bananas has been very useful in the increase of food security, environmental conservation, reliable employment and increased household income for poverty alleviation.
- Growing of bananas apart from providing income has also utilized farmlands which were otherwise wasteland and were not utilized for any productive course.

## Conclusion continued

- Banana growing is also important in the soil and water conservation where use of normal banana agronomic practices go a long way in soil and water management.
- Crop-livestock integration is well expressed under banana production and zero grazing.

# Acknowledgements

- HSH/PULS and Rockwool Foundation – Denmark
- Farmers who adopted these interventions
- Local government leadership from Arumeru district
- Organizers of Banana2008 conference

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Thank you for  
listening