

Intercropping as an option for smaller operations

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Introduction

- Agricultural sector increasingly vulnerable
 - Population growth
 - High input costs
 - Climate – variability & change
- Agricultural production varies significantly from year to year
- Climate-related changes in SA – especially temperature and rainfall
 - Results in altered agri-ecozones



Introduction

- Small farmers face many challenges
 - Access to formal markets
 - Lack of market information
 - Lack of developmental institutions
 - Correct planting material
 - Inadequate infrastructure



Rural Areas



➤ Limited linkage with government programmes

Rural Villages



❖ Water – a major challenge in most rural areas

Rural Areas

❖ Limited services



Accessibility



Eastern Cape

A. Feasibility

B. Phase 1 – Initial visits

- Research
- Establish trial sites

C. Phase 2 – Ongoing Demonstration Plantings

- Household based plantings
- Clustered at village level



Background



- **Uvuselelo (IVRP)** - grown out of this initiative in the rural areas of the former Transkei.
- Over 55 villages planted almost 165,000 fruit trees.
- Successfully established essential oil trials in over 20 villages.



Objectives

- Sustainable production based on empowerment by means of development of:
 - technical,
 - business and
 - management skills
- Market driven development of plantings
 - Marketing strategy – national /international
 - Brand development
- Community institutional capacity building
- Development of successful commercial growers
- Agri-business development for value adding



Agricultural Production

➤ Integrated Farm System

- Low external inputs
 - Manure
 - Compost
 - Cover crops
- Sustainable system
- Indigenous species can play important role in an integrated farming system



➤ Conservation Agriculture

- Land Degradation
- Erosion
- Minimum or zero tillage
- Efficient use of soil, water, biological resources



Integrated Farming Systems

- Integrated farming balances
 - food production,
 - profitability,
 - safety,
 - animal welfare,
 - social responsibility
 - environmental care.
- Integrated farming seeks to reinforce the positive influences of agricultural production whilst reducing its negative impacts.
- Disadvantage of single crop production enterprises - subject to a high degree of risk and uncertainty



Integrated Farming Systems cont.

- Integrated farm system is
 - low input system
 - use of internal (on-farm) production inputs such as manure, compost, cover crops and management practices
 - minimizes the use of off-farm resources such as chemical fertilizers, herbicides and pesticides, wherever and whenever feasible and practicable.
- Lowers inputs costs – can increase both short and long-term profitability.
- The farming system is more economically, socially and environmentally sustainable.

Integrated Farming Systems cont.

- Yields are maintained through greater emphasis on cultural practices, Integrated Pest Management (IPM), and utilization of on-farm resources and management.
- Integrated Farming is thus a common sense **whole system management approach**.
- It combines **ecological care** of a diverse and healthy environment with the **economic demands** of agriculture to ensure a continuing supply of wholesome and available food.
- It is not prescriptive because it is a **dynamic concept** - must have the flexibility to be relevant on any farm and it must be receptive to change & technological advances.

Intercropping

- Intercropping is essentially a multiple cropping practise that involves growing two or more crops in the same field.
- Primary goal is to achieve the highest potential yield off a particular field by maximising the potential of the resources present at a given time.
- Intercropping has many advantages related to the complementary use of environmental resources by the component crops,
- Increased & more stable yields,
- Better nutrient recycling in the soil,
- Better control of weeds, pests and diseases



Advantages of intercropping

- Potential increased crop yields per unit area.
- Improved soil fertility by leguminous intercrops
- Reduced soil erosion.
- Lowered soil surface evaporation.
- Reduced weed infestation
- Inter cropping system utilizes resources efficiently and increases the productivity



Advantages of intercropping


- Inter-cropping gives additional yield / income per unit area than sole cropping
- Intercropping trees with herbs can assist in repelling pests - certain herbs have insect repelling properties
- Mitigate losses where the failure of any one of the component crops occurs



Disadvantages of intercropping

- Intercropping is not always suited to a mechanised farming system.
- Time consuming – requires more attention & increased intensive, expert management.
- There is reduced efficiency in planting, weeding and harvesting which may add to the labour costs of these operations.
- Good planning is very important and includes careful cultivar selection, proper spacing etc



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- We need to find ways to:
 - produce more food,
 - adapt to changing weather patterns
 - prevent further damage to the climate,
 - To address these interlinked challenges, food systems have to become at the same time more efficient as well as more resilient to changes and shocks.
 - Agriculture should transform in order to make better use of natural resources, producing more with less land, water, energy and other inputs.



Essential Oils



- Villages producing herbs trained in making glycerine soaps utilizing essential oils extracted in the village from locally grown herbs
- Currently **5 villages** producing & selling soaps and **1 village** selling candles – sold locally in the village, to guesthouses and tourists
- Business & marketing training provided
 - All co-ops functioning but no economic assessment to date
 - 90% of co-op members are women
 - 80 co-op members = job creation
- **Challenges** - lack of adequate infrastructure to meet health & safety requirements



