

SAFE-World Project/Initiative Summary

Country: Lesotho

Project/Initiative Title: Machobane Farming System

Nos. farmers: 2000

Hectares: 1000

Improvement types

1x	2x	3x	4	5x	6x	7	8	9
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Success and Limits to spread

Success	Limits
1a,1b,1c	6a

A. Key Impacts

A1 - Productivity

	Before/Without	After/With	% change
Whole system			200-300

A2 - Impacts on natural capital

Total productivity of whole system increases – productivity of one acre now equivalent to 2.5 acres of previous monocrop

D. Contact Point for Project/Initiative

Alberta Mascaretti

Agronomist,

FAO Investment Centre

Tel; 0039-6-5705-5362

E-mail; Alberta.Mascaretti@FAO.ORG

E. Project Narrative

THE MACHOBANE FARMING SYSTEM IN LESOTHO

Lesotho is one of the ASSD countries most affected by erosion and land degradation. During the last twenty years, arable land was reduced from 14 to 9% of the country's total area and current crop yields are about half the level achieved in the late 1970s.

Dr. J.J.Machobane, a Mosotho agronomist, first conceived his “farming system” over 40 years ago, experimenting on his own land for 13 years before attempting to launch it amongst his fellow farmers. Unlike most extension methods, the Machobane approach starts with the presentation of the basic behavioural requirements to adopt its technical message which are;

- ?? self-reliance; farmers must be convinced that they can achieve food security without external assistance: it is their will that makes the difference;
- ?? appreciation of the resource base; farmers must be convinced that they can improve crop production by fully exploiting their resource base;
- ?? readiness to do hard work;
- ?? learning and teaching by doing; farmers must be trained on their own fields and farmer trainers must be ready to do work along with them;
- ?? spontaneous technology spreading; farmers learn from other farmers; Machobane farmers have the duty to help their neighbours.

In Lesotho mountain areas, most crops are grown on permanently terraced land. Due to poor soil structure inadequate soil fertility management and erratic rainfall , land productivity is low and subject to wide fluctuations. According to Machobane, these constraints can be overcome by rational exploitation of the resource base and minimising the need for purchased inputs. In the MFS, it is considered that intensive cropping of 1 acre is sufficient to ensure food security for an average family of 5 members (1/3 of the area conventionally thought necessary). The technical base for MFS includes;

- ?? the generalised use of inter-cropping and relay cropping which allows for an optimum plant cover and a maximization of the calendar year ;
- ?? localised placement of ash (up to 2 tons produced as household waste by an average family per year) and manure (1 to 2 tons annually) combined with adequate weeding to sustain soil fertility and maintain an adequate moisture retention capacity of the soil;
- ?? introduction of a cash crop (potato);
- ?? pests are controlled by traditional methods based on agronomic practices, preservation of natural predators and understanding of pest biology;
- ?? rotation is practised between rows within the same field: the cereals and pulses are planted in the rows where potato was planted the previous year and vice-versa
- ?? The system progresses through a five-year cycle, adding components and complexity as farmers gain experience and knowledge.

Farmers adopting the MFS mention three main advantages of the system: (i) much higher land productivity (intensification); (ii) large cash income obtained by planting potato and (iii) higher resistance to drought: their fields are green compared to non-Machobane fields in case of drought. In addition, MFS will substantially reduce farm income fluctuations through the combination of lowering yield fluctuations of individual crops, spreading risk of fluctuations in yields and prices by planting a larger range of crops and decreased reliance on imported inputs (fertilisers and pesticides). Finally, MFS seems to successfully integrate conservation methods into farmers' regular agricultural practices.

In the early 1990s, SWaCAP's staff persuaded Dr Machobane to become involved in reinstalling Machobane farming activities, which had practically ceased since the mid-1960s. A small amount of SWaCAP funds was used to test and promote the system. The output of the developed Machobane fields proved triple that of monocropped fields. The number of registered farmers adopting MFS in Lesotho is currently around 2,000 (against 22 in 1991). New enrolments by interested farmers have been between 350 and 400 per annum in recent years. While several interpretations of this fast adoption of the MFS by a large number of farmers can be advanced, the single most important factor is that the system offers farmers, within one season of adoption, what seems to be a sustainable increase in food supply and net income. Promoters of conservation techniques have to remember that as long as the practice itself does not result in a quick felt benefit to poor farmers, adoption will not take place. The low level of financial input of the technology, the dedication of the promoters and the fact that its success is demonstrated by other farmers in the communities are also important factors of the success of MFS.