

Preface

Increased food and fibre production is a key issue facing all countries in the Africa region today as the population is increasing faster than the rate of agricultural growth. There are various natural as well as institutional constraints which mitigate against rapid growth in the food production sector. Notably among these are climatic conditions, lack or little use of inputs, limited financial resources, poor technology transfer, pressure on land including the use of marginal lands thus causing severe land degradation and increasingly ageing groups of farmers. All these issues need to be seriously addressed in the attempt to solve the agricultural problems.

Judicious and effective management of our natural resources, particularly soils, is one of the problems that needs to be addressed. Soil erosion has caused land degradation in many areas in Africa with serious loss in productivity. It is, therefore, important to direct attention to some of the factors, particularly tillage and residue management as these are two key management practices that have a major effect on soil productivity and erosion control, particularly in semi-arid regions.

Many countries in the region, in their genuine and serious attempt to intensify agriculture and increase their food production, have introduced machinery and equipment which were neither tested locally, nor matched with the particular soils to be tilled. In addition, shortage of trained technicians and farmers in the use of the equipment introduced has had its negative impact. The experiences of our various countries testify such inadequately planned transfer of technology. In many cases the targeted yields have not only not been maintained but serious land degradation has been caused.

Crop residue management is an important factor in soil and water conservation, particularly in semi-arid regions, and forms an integral part of tillage systems. It is also closely linked to organic matter maintenance in soils. However, other economic uses of residues such as for fodder, fuel and building material offer serious competition to their use for soil management. Sustainable agricultural production must necessarily take into consideration the development of tillage and residue management packages that will increase and conserve soil productivity.

FAO has a major commitment to improving and increasing agricultural production to meet the food demands of the population of its Member Nations. The task ahead is not only to increase food production but at the same time to ensure that the natural resource base, namely the soil, is properly and carefully managed so as to be able to sustain future generations. This major challenge cannot be successfully met without modernization of production technology supported by the development of appropriate socio-economic and research institutions and intensive education. There is the need for testing technology developed elsewhere under local conditions that will improve our farming practices under the prevailing socio-economic situations. Training the right calibre of technicians and farmers to ensure the proper use of tillage equipment for the conservation and management of soil and water cannot be over-emphasized.

In 1991, a training course on tillage and residue management in Africa was held in Nigeria to give participants the opportunity to discuss technologies of tillage practices in the various countries, update their knowledge on the subject and provide them with the basic principles on which to develop appropriate tillage and residue management packages for the specific soils in their countries. It was hoped that the course would give the participants a firm foundation and would stimulate the beginning of programmes for sustainable agricultural production.

The background material from the course has been consolidated into this publication, as it is felt that other readers may well benefit from the experiences presented at the training course.