CHAPTER 16

The groundnut in farming systems and the rural economy – a global view

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It is perhaps axiomatic to state that the groundnut crop is produced in farming systems ranging from the most primitive to the most advanced. The role it performs in these systems varies considerably, from labour-intensive shifting cultivation to highly capital-intensive systems in North America and Australia.

The groundnut has an enormous advantage vis-à-vis many other crops in economies at or above subsistence level in that it has a dual-purpose role: it is both a subsistence and a cash crop, in contrast to beverage and industrial crops. Although it is a highly input-intensive crop, the nature of the inputs can be varied according to local circumstances; it is energy demanding and how these demands are met is open to alternatives. In areas where labour is abundant, all operations can be carried out manually; where it is in short supply, most can be mechanized. In intermediate situations it is possible, by appropriate injection of capital and energy resources, to optimize production efficiency for any particular set of circumstances. The development of intermediate technologies is an important issue in developing (as against stagnant) agricultural economies.

16.1 FARMING SYSTEMS

To consider the varied roles that groundnuts can perform, it is appropriate to appreciate the actual diversity of farming systems in which it can be a component. Farming systems can be classified according to a number of different criteria. Ruthenberg (1980) classifies them on the following bases:

1. Type of land management
2. Intensity of cropping

Farming systems

3. The source of water
4. The type of crops produced
5. Levels of production technology
6. Intensity of commercial production.

16.1.1 Land management systems

Five systems are generally recognized:

- Cropping plus fallowing
- Ley farming – alternate crop and livestock husbandry
- Field farming – permanent arable cultivation
- Perennial cropping – plantation style
- Agroforestry systems.

This first criterion in Ruthenberg’s list is the most important basis for classification of farming systems but the remaining elements also need to be considered.

16.1.2 Intensity of cropping

This element is very closely related to section 16.1.1. Intensity of cultivation can conveniently be expressed in terms of an index, R, calculated in terms of three variables:

\[ R = \frac{yc}{d} \times 100 \]

where \( y \) = number of years under cultivation, \( c \) = number of crops per annum, and \( d \) = duration of land-use cycle (crops + fallow).

Ruthenberg makes extensive use of this index and uses it to characterize farming systems:

- Shifting cultivation: \( R < 30 \) – fallows are long.
- Semi-permanent cultivation: \( R = 30–70 \) – fallows relatively short.
- Permanent cultivation: \( R > 70 \) – fallows very short or occasional.

16.1.3 Water supply

The water needs for cropping can be supplied by:

- natural rainfall; or
- irrigation; or
- a combination of both.