TABLE 7: RATE OF RETURN STUDIES ON THE IMPACT OF AGRICULTURAL RESEARCH IN ESA USING ECONOMETRIC METHODS (1994-1999)

Country Level	Commodity	Method	Time Period	Rate of Return	References
South Africa National	Research and development extension	Two-stage decomposition	1947-1991	60-65 28-35	Thirtle & Van Zyl, 1994
	Research and development - Short-term - Long term Extension	Profit function	1947-1992	44 58-113 Very low	Arnade et al, 1996; Khatri et al, 1996ab
Agricultural sub-sectors	Field crops	Profit function	1947-1992	30	Thirtle et al, 1998b; Thirtle & Townsend, 1997
	Horticulture	Profit function	1947-1992	100	
	Livestock	Profit function	1947-1992	5	
Enterprises	Animal health	Production function	1947-1982	>36	Thirtle et al, 1998b
	Animal Production	Supply response	1947-1994	11-16	Thirtle et al, 1998b
	Bananas	Supply, area and yield	1953-1995	50	Thirtle et al, 1998b
	Deciduous fruit	Supply response	1965-1994	78	Thirtle et al, 1998b
	Groundnuts	Yield changes	1968-1995	50	Thirtle et al, 1998b
	Maize	Error correction model	1950-1995	29-39	Thirtle et al, 1998b
	Sorghum	Error correction model	1950-1995	50-63	Thirtle et al, 1998b
	Sweet potatoes	Supply response	1952-1994	21	Thirtle et al, 1998b
	Tobacco	Supply, price lags	1965-1995	50-53	Thirtle et al, 1998b
	Wheat	Error correction model	1950-1995	26-34	Thirtle et al, 1998b; Townsend, 1997b
	Wine grapes	Error correction model	1987-1996	40-60	Townsend & Van Zyl, 1998
Kenya National Enterprise	Maize	Production Function	1955-1988	40-60	Karanja, 1994
Tanzania, National	Maize	Supply response with demand shift	1965-1994	84	Kaliba et.al, 1999
	Aggregrate for crops	Factor productivity	1971-1992	33	Isinika, 1995

* *Sources: Adapted from Thirtle et al. (1998b) Thirtle & Townsend (1997), Anandajayasekeram and Martella 1998, Marasas (1999)*