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Public and Private Compromises in Agricultural Water Management

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TABLE 1. Pay-off matrix†

	Optimize				
	$Z_1(x)$ NPV	$Z_2(x)$ Employment	$Z_3(x)$ Seasonality	$Z_4(x)$ Water consumption	$Z_5(x)$ Energy use
NPV (million ptas)	5471	2007	**76**	135	4912
Employment (man work units/year)	936	1094	**488**	715	988
Seasonal labour (man work units/year)	849	**1017**	199	589	950
Water consumption (Hm^3/year)	73	69	66	53	**80**
Energy use (million ptas/year)	5·5	28·21	22·85	**34·45**	0

† Bold characters denote anti-ideal values.

1. There is a strong degree of conflict between the two private objectives. Thus, when NPV is maximized, seasonal labour achieves almost its worst value or anti-ideal, and vice versa.
2. There is also a strong degree of conflict between the two environmental objectives. Thus, when water consumption is minimized (and consequently "salt-load" is minimized), energy use achieves its worst value or anti-ideal, and vice versa.
3. The social objective level of employment conflicts considerably with the private and environmental objectives.
4. NPV conflicts considerably with water consumption, although it is somewhat complementary with respect to energy use. There is a modest degree of conflict between the private objective seasonal labour and the environmental objectives water consumption ("salt-load") and energy use.

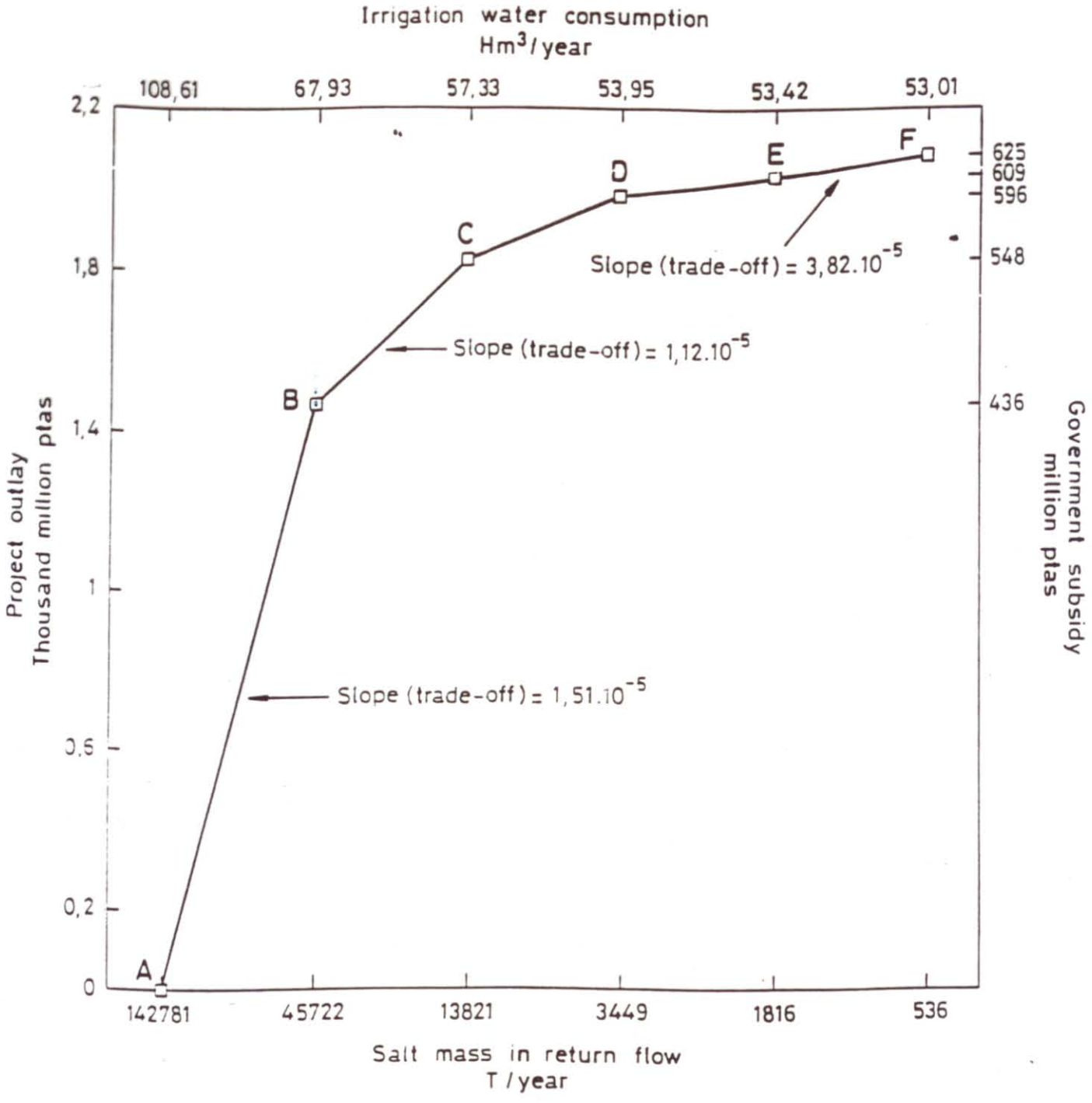

FIGURE 1

SOURCE: ZEKRI & ROMERO (1992)

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