Contents

	Pref	ace	page vii
1		rainability: a word of our time	1
	1.1	Introduction	1
		Science and subjectivity	3
		Roots of sustainability	9
	1.4	Conclusion and structure of the book	16
2	Sust	ainable agriculture: more and more production	19
	2.1	Introduction	19
	2.2	Green is the colour of sustainability	23
	2.3	Cropping systems and yield maximisation	28
	2.4	The niche: completion and co-existence in cropping	5
		systems	42
	2.5	Total factor productivity: a microcosm of	
		sustainability	51
	2.6	Enhancing TFP: genetic modification	60
	2.7	Conclusion	66
3	Sust	ainable management of fisheries	68
	3.1	Introduction	68
	3.2	The enticing concept of maximum sustainable yield	l 69
	3.3	Managing with the logistic curve: the Schaefer	
		model	79
	3.4	Applying the Schaefer model	85
	3.5	Sustainability, chaos and strange attractors	92
	3.6	Conclusion	100

vi Contents

4	Applying sustainability to industry		
	4.1	Introduction	102
	4.2	Energy, emergy and exergy	105
	4.3	Balancing inputs and outputs: material intensity	115
	4.4	The Natural Steps: setting out rules for sustainability	122
	4.5	Gaia: our saviour?	124
	4.6	Corporate sustainability	132
	4.7	Conclusion	139
5	Social and economic dimensions to sustainability		
	5.1	Introduction	142
	5.2	Linking economics and environment	143
	5.3	Environmental Kuznets curve: de-linking economic	
		growth and environment impact?	155
	5.4	Sustainable livelihoods	160
	5.5	Conclusion	168
6	The 'doing' of sustainability		
	6.1	Introduction	171
	6.2	Ecological footprint: the global repercussion	
		of demand	172
	6.3	Food miles	187
	6.4	Sustainability indicators and indices	190
	6.5	Participatory sustainability	199
	6.6	Conclusion	206
7	Sustainability science?		
	7.1	Introduction: the territory	208
	7.2	Making it matter: influencing lives	213
	7.3	Challenges ahead: some conclusions	218
	Refe	References	
	Index		246