

CONTENTS

PREFACE	v
1 INTRODUCTION	1
2 MANKIND AND THE SEA	3
2.1 Richness of the Coastal Sea	3
2.1.1 Fish production in the Seto Inland Sea, Japan	3
2.1.2 Fish production in Ariake Bay, Japan	8
2.2 Crisis of the Coastal Sea	12
2.2.1 Water pollution and the destruction of the biological environment	13
2.2.2 Decrease of fish catch	15
3 MANKIND AND FOREST	19
3.1 Sato-Yama	19
3.1.1 The four seasons in Sato-Yama	22
4 SATO-UMI	25
4.1 Concept of Sato-Umi	25
4.2 Harvest of the Sea Grass Beds	31
4.3 New Technology	33
4.3.1 Man-made upwelling structure	33
4.3.2 Reproduction of sea grass and algae beds	38
4.3.3 Reproduction of tidal flats	45
4.3.4 Improving the trawling net	49
4.4 Fish Culture and Stock Enhancement	51
4.4.1 Numerical model on material cycling in fish culture grounds	51
4.5 Fish Farming	59

4.6	Fish Resources Management	63
4.6.1	Himeshima Island	63
4.6.2	Misaki Fishermen's Union	68
4.6.3	Southeast Asia	70
5	ENVIRONMENTAL ETHICS	73
5.1	Environmental Ethics and Commons	75
5.2	Conservation and Preservation	77
6	LAST REMARKS	79
	REFERENCES	81
	INDEX	85