

Effects of Population Changes and GDP Growth on Sustainability of Marine Fisheries in Coastal Regions of Northeast Asia

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Outline of Presentation

- Introduction
- Trends of Population and GDP Growth
- Analysis of Consumption Patterns of Marine Products
- Linkage among Population Changes, GDP growth, and Marine Fisheries
- Conclusions and Discussions

Introduction

- Intensive human activities are threatening the marine fisheries at local, regional and global levels;
- Population changes and growing economic power would be the key factors affecting the marine fisheries;
- The heavy dependence on protein supply from marine fisheries in Asia would challenge the sustainability of marine fisheries
- Northeast Asia is a very important region in several aspects.

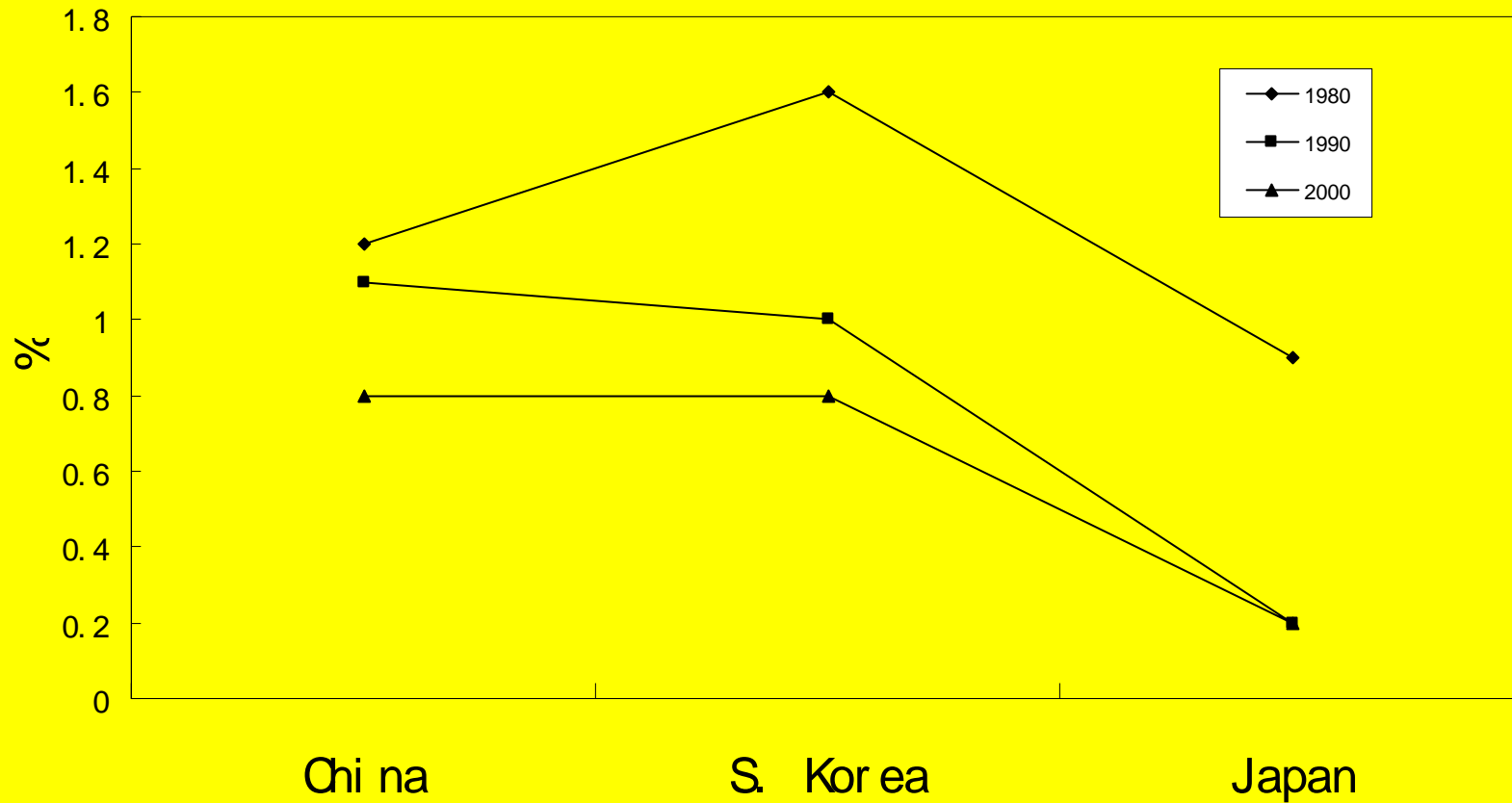
Trends of Population and GDP Growth

- The population size has experienced a very slow growth;
- Rates of population increase have been slower accordingly;
- There have been a very rapid increase of urban population, especially in China and Korea;
- All three countries have witnessed a faster GDP growth in terms of both stock and per capita though there is a great differential.

Dynamic Change of Population Size

Year	China	South Korea	Japan
1975	927.8	35.3	111.5
1980	998.9	38.1	116.8
1985	1070.2	40.8	120.8
1990	1155.4	42.9	123.5
1995	1220.5	44.9	125.5
2000	1277.6	46.8	126.7

Population Growth Rates



Urbanization Trend

Year	China	South Korea	Japan
1980	19.4	57.3	76.2
1990	26.4	74.4	77.4
1995	29.0	NA	78.1
1999	30.9	NA	NA
2000	36.2	79.7	78.7

GDP Growth by Stock and Per Capita

Year	China		South Korea		Japan	
	GDP Stock Million	GDP Per Capita	GDP Stock Million	GDP Per Capita	GDP Stock Million	GDP Per Capita
1980	302052.6	306	62631.2	1643	1083390	9255
1990	387578.7	339	252504.3	5890	3081721	24931
1995	700073.6	578	489812.7	10863	5302947	42231
2000	1081092	853	454821.8	9675	4750863	37949

Analysis of Consumption Patterns of Marine Products

- Changes of consumption structure patterns would have more a direct impact on marine fisheries;
- Evidence turns out that higher purchasing powers indicate more consumption of seafood;
- There is a large differential in per capita consumption of fishery products among three countries.

Changes of Food Consumption Share in Korea

Item	1980		1990		2000	
	Total (kg)	%	Total (kg)	%	Total (kg)	%
Rice	132.9	70.4	120.8	57.6	97.9	46.0
Meat	13.9	7.4	23.6	11.3	37.5	17.6
Fruit	16.2	8.5	29.0	13.8	40.7	19.1
Marine Products	25.9	13.7	36.2	17.3	36.8	17.3
Subtotal	188.9	100.0	209.6	100.0	212.9	100.0

Linkage among Population Changes, GDP growth, and Marine Fisheries

- There have been different increase rates among population sizes, GDP growth, and marine fisheries. The evidence shows that economic variables like GDP causes great pressure on marine fisheries;
- There is still a growing demand for marine products though the fishery catches have slowed down.

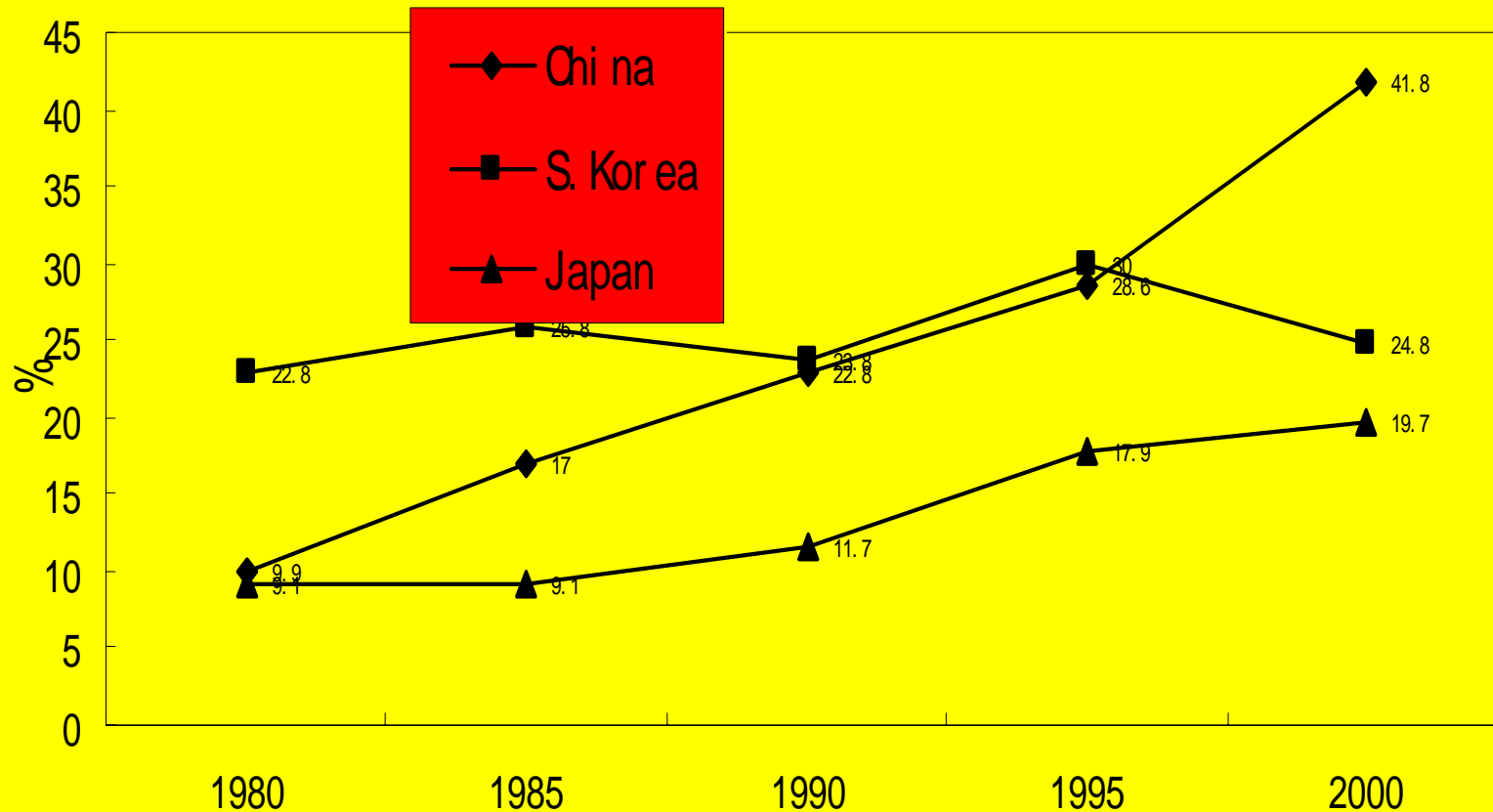
Rates of Changes of Population, GDP Stock, and Fishery Catches

	Variable	1980	1990	2000
China	Total Population	1.2	1.4	0.8
	GDP Stock	7.8	3.8	8.2
	Fishery Catches	1.4	8.6	-1.4
South Korea	Total Population	1.6	1.0	0.8
	GDP Stock	0.3	12.6	8.1
	Fishery Catches	-0.4	29.4	-16.0
Japan	Total Population	0.9	0.4	0.2
	GDP Stock	2.8*	5.3	1.7
	Fishery Catches	4.4	-9.1	-4.3

Reasons for Declining Fishery Catches

- Adoption of fishery management at both national and regional levels;
- Active promotion of mariculture;
- More heavy dependence on international sea food market.

The Percentage of Mariculture over Total Marine Fisheries



Conclusions and Discussions

- Economic variables have more direct and important effect on the changes of marine fisheries than demographic variables;
- Increasing GDP will lead to the growing demand for marine products, especially like China with economies in transition;
- Mariculture could be a good substitute for fishery catches;
- The unsustainability of marine fisheries is still the key issue Northeast Asia is faced with.



Thank you for your attention