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SEAFDEC Training Department

Southeast Asian Fisheries Development Center

TD/TRB/41

January 1987

FISHERIES ECONOMICS (I)

by

Masahiro YAMA0

Text/Reference Book Series No.41

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PREFACE

This textbook was initially prepared as part of the lectures on Fisheries Economics at SEAFDEC, in 1986. The contents are obviously not only introductory but also essential to our subject. In addition to my summarized lecture notes, I will refer in detail to each subject in order that the student gain a greater understanding.

The contents of the book can be roughly divided into three parts, although each chapter is independent of the others.

The first part points to the characteristics of the fishery industry as a component of the national economy (Chapter I). Naturally, this industry shows some characteristics which must be distinguished from those of other industries, while some are similar. As an introduction, I will describe both.

The second part concerns the trends of world fishery production and the characteristics of the fishery produce trade (Chapter II). Based on the indicative reports and statistics of the Food and Agricultural Organization (FAO), I intend to clearly illustrate the remarkable structures of production as well as trade all over the world. To take into account the relationship between developing and developed countries, both groups are consciously compared. This is because the world fishery production has tended to be affected by the developing countries since the 1960s. Naturally, the developed countries have been less likely to affect the trends of fishery production. Moreover, the trading structure of fishery produce and products show different tendencies for the developing and developed countries. A recognition of the distinctions between them will provide an insight into what has stimulated the growth of fishery production in the developing countries.

The third part of the book concerns the fishery development process, mainly from the viewpoint of market formation and expansion (Chapters III, IV and V). Such a historical approach may not always be linked to a solution of the present problems, like the so-called small-scale fishery. However, a historical and theoretical understanding of fishery development is unavoidable whenever we have to plan for the future of a fishery, since the problems we have faced are nothing but historical results. First, the relationship between the expansion of market area and the growth of fishery producers will be discussed. This is because the expanding market area has been of great impetus in urging fishery producers to enter commercial production, and because the link between the market and the producers has continuously caused a classification among fishery producers. Secondly, I will concentrate on the changing process of the fishery produce market, from the viewpoint of a connection between wholesale commerce and fishery

producers. In reality, the appearance of a mediator for fishery produce encouraged the commercial production of producers and spurred them to accumulate a surplus. Initially, the relationship tended to be managed by the mediator, not by the producers. Gradually however, the producers became purely commercial and independent of all mediators. Through this process, the fishery produce market has changed according to the growth of the commercial producers. Therefore, this study will consider a process where the fishery producers attained an equal status with the mediators of fishery produce. Finally, our discussion will cover the characteristics of the management of an artisanal fishery. In spite of fishery development accompanied by the establishment of capitalized fishery, there have been immense household managements in fishery which have still remained underdeveloped. On comparing the predominant principles of the artisanal fishery with those of the capitalist fishery, we will illustrate the characteristics of an artisanal management. These three subject areas will indicate the unavoidable trends in the fishery development, as a result of which we can perceive the future direction of fishery, to some extent.

I sincerely hope that this book will help the SEAFDEC trainees to better understand the subject.

17th September, 1986

Masahiro YAMAO

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I. Characteristics of the fisheries industry

1. Broadly speaking, fisheries have provided an important source of nutrition and have existed since human beings came into existence. This fundamental role has remained alive until the present day. Here, however, we will not discuss the fisheries through which people only obtain their own food. Our discussion will focus on the fisheries which have been (or are being) established as an industry as part of the national economy.

2. Concretely, this industry, at first, produces goods which should be transformed into market commodities. That is, the fisheries engage in continuous commercial production, as do other industries. Fishery produce comes into existence mainly for purchasers, instead of for the purpose of domestic consumption. A fishery producer predominantly directs his produce towards markets, in order to respond to the purchasers demands. In return, producers will receive earnings from the sale. This simple relationship between producers and purchasers has been enlarged and structured through the expansion of markets. The impetus to expand the above relationship is, from a historical viewpoint, rapid industrialization; of course, fisheries production for markets had already appeared before the commencement of this movement. Just before or after the industrialization an immense labour force was needed, the fisheries which had remained at the level of immature commercial production began to rapidly change their features. The industrialization of the national economy naturally stimulated the rapid growth of towns and non-agricultural settlements. A sharp fall in the agricultural population (or increase in the urban population) caused a sharp proportional increase in demand for food. This required the fisheries, as well as crop production and animal husbandry, to supply a steady flow of produce to the urban areas. Inevitably, the fisheries needed to improve their productivity in order to enlarge the scale of production. In the same way as in other industries, traditional technology, being appropriate for domestic consumption or sale in a small area only, was replaced by more effective and modern technology. Along with the introduction of new technology, the productive form to satisfy the increasing demand in the non-agricultural sector gradually dominate the fisheries production. For instance, households which used to partially engage in fisheries commenced specializing in fisheries. Other occupations conducted by family members, such as agriculture and small cottage industries, tended to cease (conversely, the fisheries activity might diminish in others). This is obviously because the households preferred more efficient and enlarged production through the concentration of the families labour, so far as their produce directed to markets as commodities was concerned. Simultaneously, the households could efficiently allocate their accumulating capital to fisheries. Generally, the more produce the households could receive the more earnings from the markets.

3. Secondly, the fisheries industry itself becomes a purchaser of products from other industries. In another way, the fisheries industry is a component in the exchange economy. This economy spreads all over the country and when the division of labour begins to dominate all production: the specialization of workers in particular areas or operations of the production process occurs. Many households and enterpruners appear who will concentrate mainly on fisheries production, while expecting a maximum benefit. At markets, they naturally sell their produce as sellers. On the other hand, these fisheries producers will purchase necessary production materials and equipment, at the markets. The means of labour, also professionally produced by others, normally work rather more efficiently than those which fisheries producers could supply themselves. It is because professional producers create higher production means of labour through their accumulated capital, skilled workers, and specialized knowledge. Therefore, the fisheries means of production produced by other industries normally bring about the rapid increase of produce. Historically, the industrialization of the national economy prompted the fisheries producers to purchase the products from other industries. Formally, most of fisheries households used to lie in the self-sufficient economy. However, after the industrialized products began to be available everywhere, including fisheries communities, the self-sufficiency in the fisheries was rapidly destroyed. The subsistence fisheries were transformed into commercial ones which could receive other industries products. That is, the fisheries provided a wide area where the other industries could market their products.

4. Thirdly, the fisheries, as well as agriculture, provide a labour force source for other industries. During the transition from subsistence fisheries to commercial fisheries, the exchange economy (or the monetary economy) compelled the fisheries to adapt their production to it. This affected traditional home-consumption patterns in the fishery communities. Thousands of industrial products flow there. A source of exchange for the products is, of course, fisheries produce. The households in the fisheries tended to concentrate only on the fishing operation, while purchasing necessary industrial products and even foodstuffs. The exchange between fisheries produce sold and industrial products purchased brought some benefit to fisheries households. Through the added benefit, some households become capital intensive managements, since part of the benefit goes towards the enlargement of the next production. But a little benefit will lead the households to obstacles to production. As a matter of fact, historically, large households suffered detrimental results from exchange with the industrial products. The majority of households made unfavourable exchanges. This is because their production and distribution were neither systematized nor unified as in the industrial sector. There existed many households who could not adapt themselves to the monetary economy. Furthermore, when compared

to the industrial sector, the fishery as well as the agricultural sector could not expand faster than the industrial sector. Naturally, the industrial sector would absorb many factory workers from the areas of slow growth. Urban industrialization anticipated that much of the fisheries communities population would become industrial workers. On the other hand, the fishery sector itself contained a factor to satisfy the desire of the industrial sector. That is, the progressive classification of fishery managements strongly promoted the lower level of management. The spread of the monetary economy brought a majority of the lower levels, while it prompted the growth of capital intensive managements. Of course, some of the former would become migrants to the urban areas. Apparently, the fishery sector provided a source of workers to the industrial sector.

5. The fisheries industry is distinct from all other industries. Next, we will discuss what characteristics this industry has. First, the development of this industry is more likely to be influenced by the abundance of aquatic organisms and not by social conditions. Aquatic organisms, which fisheries managements intend to obtain, are not the property of any person. As long as the catch implemented by the managements does not affect the abundance of aquatic organisms, the level of production of fisheries managements is the determining factor of this industry's advancement. However, as soon as the catch ability of fisheries managements is beyond the resources replenishment capability, this industry shows some unique characteristics. All managements hasten to compete with others in order to catch more, since no one owns the organisms. In other words, "First come, first served" is the basic principle of this industry. As we have experienced, the existing managements intend to achieve this through an investment in highly productive equipment and facilities. The faster they invest, the more a fishery management will catch. There is no other industry where this is the basic principle nowadays. Inevitably, severe competition will occur among the managements. The effect of the competition naturally causes a classification among competitors. That is, a productivity differential between managements which can continuously invest and those which cannot, will be rapidly formed. This is mainly due to the basic principle.

6. Secondly, the above process implies a great risk of over-exploitation of aquatic resources. This probably affects the direction of fishery managements. Suppose that many fisheries managements catch a certain type of fish in a certain fishing ground. The means of production is the most crucial factor to the amount of fish caught. A management which first introduces facilities and equipment and has the highest productivity will receive super-normal profit. The management makes an additional profit, besides the normal one which the other managements receive from their fishing operations. This results from the increase in production accompanied by a rise in

productivity. However, when other managements commence adopting the same means of production, the super-normal profit of the first management will diminish, and finally disappear. With the expansion of new technology with high productivity, the production costs in fishing operations may be wholly reduced. The reduction of cost results in a decline of market price of the fish. Furthermore, the increase in the catch of the fish brings a cheaper market price. Thus, a surplus will not exist. Overall, the new facilities and equipment steadily increase production and productivity. This tendency is in common with that of other industries.

7. However, in fisheries, this process often faces the over-exploitation of aquatic resources. The increase of catch effort through the expansion of new technology may cause an excessive catch against the renewable capability of a certain species. Therefore, the disappearance of super-normal profit is caused by a rapid decrease in production. This is in contrast to other industries. Normally, other industries increase labour productivity and capital and these are accompanied by a swift rise in production. However, with an increase in production ability, the fisheries will face a decrease in the amount of produce. Inevitably, this results in a decline of labour productivity and capital. Accordingly, fishery managements are destined to face the disappearance of super-normal profit and even normal profit. Thus, an improvement of productivity in fisheries possibly destroys the administrative situation of fisheries households and entrepreneurs. Therefore, the first characteristic mentioned above greatly affects their direction.

8. Thirdly, along with the second characteristic, we can see that the fisheries always wish to exploit new fishing grounds. Suppose that a fishery management can find a new fishing ground with an abundant resource. The management will gain super-normal profit in its fishing operation, even though the management uses the same facilities and equipment and same labour force as in the old fishing ground. The abundant resource will provide this management with a higher productivity of capital and labour than before. Therefore, the exploitation of new fishing grounds is a most important issue to the industry. However, insofar as many fishing grounds are open to the public, the first exploiter of a fishing ground can no longer prevent newcomers from operating there. As soon as competitors reach the fishing ground, the super-normal profit of the firstcomer, derived from the abundance of the resource, will disappear. In order to retain super-normal profit, some managements invest in new facilities and equipment, as mentioned before. Again, the deterioration of fishing operations will force fisheries managements to exploit another new ground. We can find this movement in the historical process of deep-sea fisheries. That is, not only the improvement of productive ability but also the rapid disappearance of super-normal and normal profit, has obliged many managements to move further and further away from coastal to

offshore and finally to deep-sea fisheries. Fundamentally, the fact that the existing super-normal profit is easily reduced by the declining resource, is characterized by the movement of the fisheries managements.

9. Fourth, in the fisheries, a large-scale means of production is not always superior to a smaller one. This is in contrast to the other industries (particularly the secondary sector) where the enlargement of production facilities is a most significant factor in achieving maximum profit. On the other hand, the scale of fishing operations may be determined by the biological characteristics of the aquatic resources. Most fisheries managements have to consider the seasonal changes in fish and the scale of fish schools. The large facilities and equipment cannot efficiently respond to the seasonal change in the species. Conversely, the small-scale fisheries may easily alternate the species caught, according to the seasonal changes in the resource abundance. This often brings a higher turnover of facilities and equipment to a small fishery management than to a large one. Large-scale facilities and equipment sometimes lead a management to an administrative decline. Furthermore, the scale of fish school also determines the scale of the fishing operation. Apparently, this is why medium and small-scale fisheries can survive next to the large-scale fisheries. In other words, the wide variety of aquatic resources allows the existence of several levels of fishery management.

10. Referring to the discussion thus far, the fisheries industry basically functions as a component of the national economy. However, this industry shows unique characteristics due to the influence of the natural resources which clearly distinguish it from other industries.

II. World fishery production and commodities flow

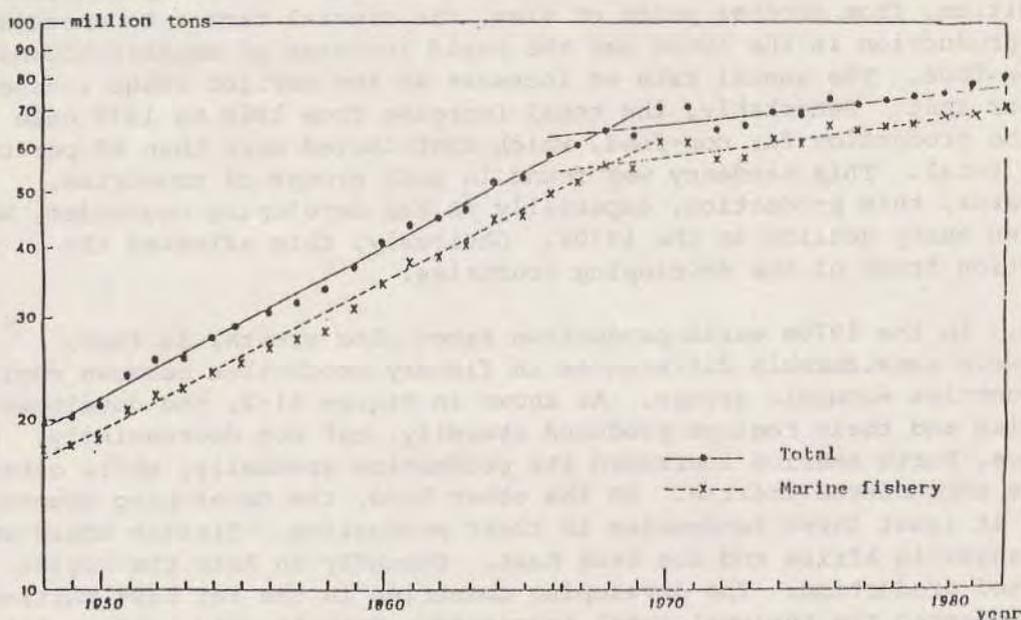
1. In 1982, the Food and Agriculture Organization (FAO) of the United Nations published "PROSPECTS FOR WORLD FISHERIES TO 2000". This publication greatly shocked not only those who worked in fisheries but also those in the related areas of food production. Of the many important indications, I will highlight the following two items. One is that world production of aquatic organisms in the 1970s could not increase more than expected. The annual growth rate of production in the world reached only 1.2 per cent in the 1970s, while that of the 1960s showed 5.3 per cent. The other is that future production will also remain stagnant at least until the year 2000. The FAO estimated that the annual growth rate will show approximately 1 per cent, almost the same as in the 1970s. Therefore, a rapid increase in production, as in the 1960s, will no longer occur in the world fishery.

2. Although the fishery production in the world will be stagnant, another report estimated that future demands for fishery production would steadily increase. "World Food Report" (FAO, 1983), for instance, mentioned first that the total population suffering malnutrition in the world might be 440 million, equivalent to 10 per cent of mankind. Yet the report anxiously referred to the centralization of the population in the urban areas, especially in the developing countries, which will continue from now on. In 1970, the population in the urban areas of developing countries accounted for only 20 per cent of their total populations; however, the percentage of the urban population may rapidly increase, and reach a near majority by the year 2000. Naturally, this concentration in the urban areas is directly linked to the rapid increase in demand for food. However, since the developing countries have always constituted a greater part of the malnourished population, the food problem may be further deteriorated. Moreover, not only fishery production but also agricultural production in the world are expected to be inert or decrease; accordingly, we may face a large imbalance between production and demand in the future. Therefore, an effective solution to the problem, has been and will be needed. Of course, as an industry for food production, how fishery will respond to the increasing demand is a most important subject all over the world.

3. In the meantime, we will focus on the development process of world fishery production from the beginning of the 1960s to the present. This will help clarify what problems the world fishery has faced. Overall, the development process of the world fishery shows remarkable trends. Firstly, the whole increase in production was determined by marine fishery production, as shown in Figure II-1. Marine fishery production accounted for 90 per cent of the total, while the remainder was from inland fishery. Obviously, the rise in total production until the outset of the 1970s resulted from a rapid rise in marine fishery production, just as, the stagnation of marine production in the 1970s resulted in the stagnation of all fishery production. Secondly, we can perceive that there was a great difference in rate of increase of production between the developing and developed countries. The figures in Table II-1 indicate that the developing countries gave great

impetus to the increase in world production, particularly in the 1960s. These countries showed 7.1 per cent of the annual rate of increase. In contrast, the developed countries reached 3.7 per cent only. Therefore, the swift rise of fishery production during the first decade was partially derived from the developing countries. In fact, afterwards, these countries continuously raised their percentage against the total world production from 42.3 per cent (in 1960) to 48.9 per cent (in 1982), while the developed countries reduced their contribution from 57.7 per cent to 51.1 per cent.¹

¹ FAO "Yearbook of Fishery Statistics".



(Source : FAO Circular No.710, Revision 2)

Figure II-1 Trends of world fish production

Table II-1 World production of living aquatic organisms

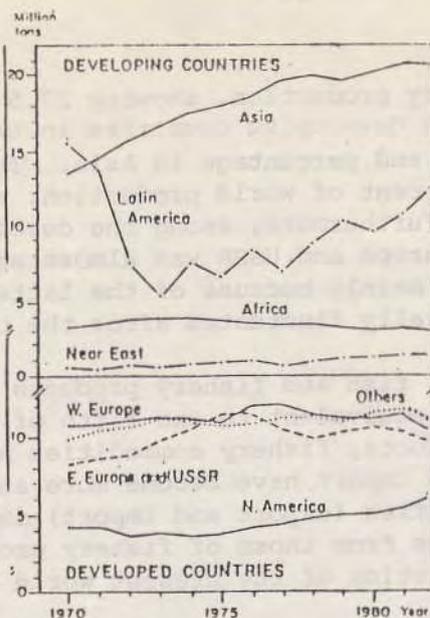
	Production			Increase		Rate of Increase	
	1960	1970	1978	1970/60	1978/70	1970/60	1978/70
	...million tons...					% per annum	
TOTAL	40.2	67.2	73.6	27.0	6.4	5.3	1.2
Developing Countries	17.0	33.7	35.4	16.7	1.7	7.1	0.6
Developed Countries	23.2	33.5	38.2	10.3	4.7	3.7	1.7
FOOD	31.6	41.3	52.0	9.7	10.7	2.7	2.9
Developing Countries	13.1	18.1	27.4	5.0	9.3	3.3	5.3
Developed Countries	18.5	23.2	24.6	4.7	1.4	2.3	0.8
NON FOOD	8.6	25.9	21.6	17.3	-4.3	11.6	-2.2
Developing Countries	3.9	14.4	8.0	10.5	-6.4	14.0	-7.1
Developed Countries	4.7	11.5	13.6	6.8	2.1	9.4	2.1

(Source : FAO "Prospect for World Fishery to 2000")

4. Yet the figures in the Table show another tendency. That is, the developing countries encountered a drop in increase in the 1970s. The annual rate of increase fell to 0.6 per cent, which was rather lower than that of the developed countries. Again, the decline of the world production in the 1970s was affected by the trends of the developing countries. Accordingly, the changes in the developing countries production were on the whole linked to world production during these two decades. The exploitation of aquatic organisms (mainly marine animals) increased in the developing countries during the first decade. But, this movement faced great obstacles in maintaining a continuous and steady increase in production, shortly after the start of exploitation. In addition, from another point of view, the crucial factor to encourage world production in the 1960s was the rapid increase of aquatic organisms for non-food. The annual rate of increase at the earlier stage reached 11.6 per cent. Remarkably, the total increase from 1960 to 1970 came from the production for non-food, which contributed more than 60 per cent of the total. This tendency was found in both groups of countries. Afterwards, this production, especially in the developing countries, met a sudden sharp decline in the 1970s. Obviously, this affected the production trend of the developing countries.

5. In the 1970s world production faced slow growth, in fact, there were considerable differences in fishery production between regions and countries economic groups. As shown in Figure 11-2, the developed countries and their regions produced steadily, but not decreasingly. For instance, North America increased its production gradually, while other regions encountered inertia. On the other hand, the developing countries showed at least three tendencies in their production. Firstly there were the changes in Africa and the Near East. Secondly in Asia the region increased production. The developing countries in the Far East particularly affected the regional total increases. From the mid-1960s until the mid-1970s, the production in these countries grew at an annual rate of 6.4 per cent, being higher than that of any other region. In contrast, the other category's group (centrally planned countries in Asia) indicated only a 2.7 per cent annual rate. Therefore, the steady growth in Asia clearly resulted from a rise in production in the Far East. Afterwards, however, the annual rate of increase eventually fell to 2.4 per cent, which was equivalent to that of the centrally planned countries. The third tendency of regional production was the severe fluctuation in Latin America, especially early in the 1970s. Basically, the anchoveta fishery in the region predominantly determined such a sudden and sharp decline.

6. The above regional trends naturally reflect the contribution of each region to world production. For instance, in 1970, Latin America contributed the highest percentage, that is, 23.5 per cent. Asia and Western Europe showed 20.2 per cent and 16.7 per cent, respectively. In 1982, however, their order was altered as follows: The former largest region's contribution declined to 15.5 per cent, and conversely, Asia



(Source : Fishery commodity situation and outlook 1981/83)

Figure II-2 World fish production by economic groups of countries

Table II-2 World production of aquatic organisms (1,000 t)

	1970	1971	1972	1973	1974	1975	1976
World total	65,420	68,681	70,402	71,216	82,372	74,499	75,046
Developed countries	32,981	37,968	37,430	37,305	38,414	38,808	38,364
North America	4,144	4,216	4,784	4,922	4,969	5,129	5,302
Western Europe	10,894	12,067	11,429	11,139	11,214	11,249	10,658
Eastern Europe and USSR	8,229	10,559	9,990	10,259	10,705	10,779	10,738
Oceania	161	210	223	238	234	238	273
Others	9,555	10,915	11,015	10,826	11,292	11,494	11,393
Developing countries	32,469	30,712	32,972	33,831	33,957	35,610	36,682
Africa	3,202	3,420	3,441	3,281	3,113	3,223	3,073
Latin America	15,355	6,800	8,829	10,021	9,610	10,526	11,654
Near East	634	659	724	893	971	998	1,034
Asia	13,188	19,676	19,769	14,414	20,031	20,623	20,675
Southern Asia	2,758	3,392	3,431	3,484	3,591	3,667	3,643
East and South-east Asia	10,430	16,284	16,336	15,929	16,440	16,956	17,032
Others	81	158	211	222	236	230	229

1) World total and regional subtotals include estimates (data previous year repeated) for countries for which 1982 data are not yet available.

(Source : FAO "Fishery Commodity Situation and Outlook 1981/1983)

climbed to the top in fishery production, showing 27.5 per cent. As indicated in Table II-2, the developing countries in East and Southeast Asia boosted the production and percentage in Asia. This sub-region indeed accounted for 23 per cent of world production, and used only to show 16 per cent in 1970. Furthermore, among the developed countries, the production of Eastern Europe and USSR was almost equivalent to that of Western Europe. This is mainly because of the latter's inert production. Thus, world production generally fluctuated after the outset of the 1970s.

7. Meanwhile, in 1982, fish and fishery products for export reached 15,467 thousand tons, being equivalent to one fifth of total production. Along with agricultural products, fishery commodities are traded all over the world. Recently, export and import have become more and more important. However, the flow of commodities (export and import) is indeed complicated and shows distinct tendencies from those of fishery production. We will roughly cover the characteristics of the present world trade in fisheries commodities.

8. Above all, the commodities flow in the international market shows the following characteristics. The bulk of export was carried out mainly by the developed countries, although the production of both categories was nearly the same. For instance, export from the developed countries constituted 75 per cent of world export, while the remainder (25 per cent) was done by the developing countries. In addition, fishery commodities were more likely to be in demand in the developed countries. Three quarters of the volume of commodities imported was by these countries. Of course, the volume imported by the developing countries tended to increase gradually. Accordingly, on the whole, the fish and fishery products significantly formed the flow from developed to developed countries. (See Figure II-3 (1), (2)). In value, we will perceive another characteristic in the commodities flow. The figures in Table II-3 show that the export of the developed countries accounted for the majority of the total value. Furthermore, the Table implies another two important points characterized by the trends of world export. The first is that the developing countries increased their percentage of the total year by year. Eventually, the difference between both groups diminished in 1982. The second is that the developed countries contributed a comparatively low percentage of the total, which was disproportional to the volume of export. In addition, the developing countries showed a relatively high percentage, disproportional to the small volume of export. Clearly, the developing countries exported commodities with rather higher value than the developed countries. In fact, there was a considerable difference in value of commodities exported between the developed and developing countries. The former received a lower value per metric ton than the world average, while the latter had a higher value. (See Table II-4). Basically, this was caused by the fact that the developing countries tended to concentrate on the export of Crustaceans and Molluscs (fresh, frozen, dried, and salted). These countries contributed approximately

Table II-3 Exports of fish and fishery products, showing distribution by developed/developing country. (in value)

	1977	1978	1979	1980	1981	1982
World total	100	100	100	100	100	100
Developed world	62.6	62.0	60.8	61.2	59.6	56.6
North America	13.6	16.2	15.6	13.8	15.5	15.0
Western Europe	36.1	33.8	34.0	35.2	33.0	30.1
Eastern Europe and USSR	2.8	2.6	2.8	2.6	2.1	2.2
Others	10.2	9.4	8.4	9.6	9.0	9.3
Developing world	37.4	38.0	39.2	38.8	40.4	43.4
Africa	2.6	2.5	2.5	3.0	3.0	3.1
Latin America	11.1	12.4	12.5	13.3	13.1	15.3
Near East	0.3	0.3	0.3	0.5	0.6	0.6
Asia	19.1	17.7	19.0	16.6	18.2	18.7
Southern Asia	2.9	2.8	3.0	2.5	2.9	3.3
East & South-east Asia	14.4	12.8	13.9	12.0	13.1	10.6
Centrally planned economies	1.7	2.1	2.1	2.1	2.2	2.1
Others	4.0	5.1	4.9	5.4	5.5	5.7

1) Estimates
(Source: FAO "Fishery Commodity Situation and Outlook 1981/83").

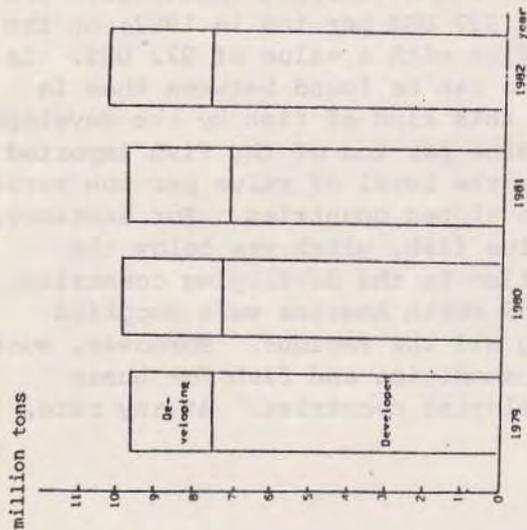


Figure II-3(1)
World export of fish and fishery products

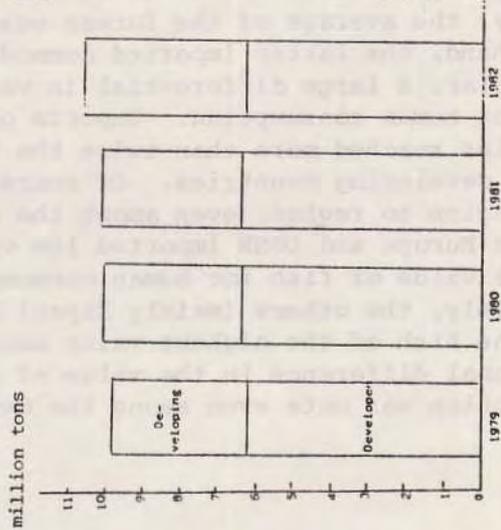


Figure II-3(2)
World import of fish and fishery products

Table II-4 Value of commodities exported per metric ton

	(US \$)			
	1979	1980	1981	1982
World total	1,447	1,498	1,578	1,444
Developed countries	1,378	1,458	1,466	1,414
Developing countries	1,568	1,564	1,773	1,486

(Source : FAO "Yearbook of fishery Statistics")

70 per cent of the volume of these species exported in 1982. Furthermore, the developing countries exported nearly 40 per cent of the products made from these species. Of course, in the export of meal and other animal feed, whose value per ton remained very low, the developing countries exported the majority. Generally however, crustaceans and molluscs, and their products boosted the countries exports. Additionally, the export value per ton for the developing countries fluctuated more severely than that for the developed countries.

9. As described before, the volume of fish and fishery products imported tended to be by the developed countries and not the developing ones. Moreover, this tendency was further accelerated by value. The figures in Table II-5 point to the convergence of commodities on the developed countries. In 1982, they imported 85 per cent of the total, while the developing countries took only 15 per cent. When comparing the percentages for volume and value of the developed countries, we will perceive that their contribution to the world total for value was rather higher than that for volume. That is, the developed countries might import commodities with a higher value than those imported by the developing countries. The average value of commodities (per metric ton), imported by the developed countries reached twice that of the developing countries. Concretely, the average of the former was 1,827 US\$ per ton in 1982; on the other hand, the latter imported commodities with a value of 922 US\$. In particular, a large differential in value can be found between them in fish for human consumption. Imports of this kind of fish by the developed countries reached more than twice the value per ton of the fish imported by the developing countries. Of course, the level of value per ton varied from region to region, even among the developed countries. For instance, eastern Europe and USSR imported low value fish, which was below the average value of fish for human consumption in the developing countries. Conversely, the others (mainly Japan) and North America were supplied with the fish of the highest value among all the regions. Moreover, such a regional difference in the value of commodities and fish for human consumption was note even among the developing countries. At any rate,

the commodities imported tended to converge on the developed countries not only in volume but also in value; in addition, the higher value fish and fishery products were more likely to be directed to these countries.

10. With reference to the discussion thus far, we will characterize the basic trading structure for fish and fishery products in the world. To begin with, there was a great difference in the balance of exports and imports between the developed and developing countries. In the developed countries, the imports continuously exceeded the exports in volume and in value. In contrast, in the developing countries, the exports absolutely overwhelmed the imports for both, particularly for value. Moreover, a comparison of the export value between the two groups of countries indicated that the differential steadily decreased. This is mainly because the developing countries increased their export value, while the others remained stagnant. However, we have found that the importation of fish and fishery products was concentrated in the developed countries, especially with regard to value. Yet there was another remarkable distinction between the two groups of countries. The developing countries exported a large amount of commodities of high value; at the same time, they imported a small amount of commodities of low value. In contrast, the developed countries imported much higher value commodities, while exporting those of low value. Thus, the flow of fish and fishery products in the world, from the point of view of classifying developing and developed countries, showed the above distinct tendencies (See Diagram II-1).

11. Besides the rough illustration of the world commodities flow, we will look at trends of major exporters and importers in order to illustrate more precisely the flow of fish and fishery products. The flow is really more complex than shown in the preceding overview. This is because major fisheries countries are not always large exporters, and because some exporters also import a large amount of fish and fishery products. To begin with, the trends of large fisheries countries will be focussed on by simplifying such complex trading. Referring to the figures in Table II-7, (judging from both export and import rates versus production), we will divide these large fisheries countries into three groups. In the first group the amount of exports exceeded imports, namely, Denmark, Iceland, Norway and Canada. In the second group the amount of imports was beyond exports, for instance, U.S.A., Japan, Spain and the United Kingdom. The third group's countries were those whose rates of export and import compared to their production were rather lower than the other groups, and there was little difference between the two rates, namely USSR, India and Indonesia. The above classification, of course, contains slight variations. By way of example, there were some importers whose exports also represented a high percentage to their production, typically Spain. At any rate, the largest fisheries countries tended to be exporters. In fact, the ten largest exporters in the world, in 1982, came from among these countries, more precisely, from the first group. Of the largest exporters by value, seven of them belonged to this group. Moreover, another two large exporters, although being classified into the second

Table II-5 Imports of fish and fishery products, showing distribution by developed/developing country (in value)

	1980	1981	1982
World total	100	100	100
<u>Developed countries</u>	85.4	85.3	86.0
North America	18.6	20.2	21.3
Western Europe	43.0	37.7	36.1
Eastern Europe and USSR	2.3	2.0	1.9
Others	21.5	25.4	26.7
<u>Developing countries</u>	14.6	14.7	14.0
Africa	4.4	4.1	3.1
Latin America	2.8	2.9	2.5
Near East	1.6	1.9	1.7
Asia	4.6	4.7	5.7
Southern Asia	0.1	0.0	0.0
East & Southeast Asia	4.5	4.7	5.7
Centrally planned economies	0	0	0
Others	1.2	1.1	1.0

(Source: FAO "Yearbook of Fishery Statistics")

Table II-6 Value of imported commodities shown by developed/developing country (per metric ton)

	Total				
	1980	1981	1982	1990	1991
World total	1,619	1,678	1,606	2,111	2,143
<u>Developed countries</u>	1,056	1,941	1,827	2,514	2,500
North America	2,753	2,871	2,964	2,885	3,023
Western Europe	1,515	1,432	1,206	2,237	2,038
Eastern Europe and USSR	566	695	596	646	900
Others	3,123	3,295	3,249	3,560	3,577
<u>Developing countries</u>	929	908	922	1,064	1,075
Africa	724	693	628	730	698
Latin America	967	1,008	1,030	1,353	1,476
Near East	1,109	969	1,082	1,427	1,333
Asia	1,135	1,193	1,200	1,361	1,402
Southern Asia	783	750	750	783	857
East Southeast Asia	1,146	1,198	1,205	1,390	1,410
Centrally Planned economies	-	-	-	-	-
Others	964	942	687	1,700	2,073

(Source: FAO "Yearbook of Fishery Statistics")

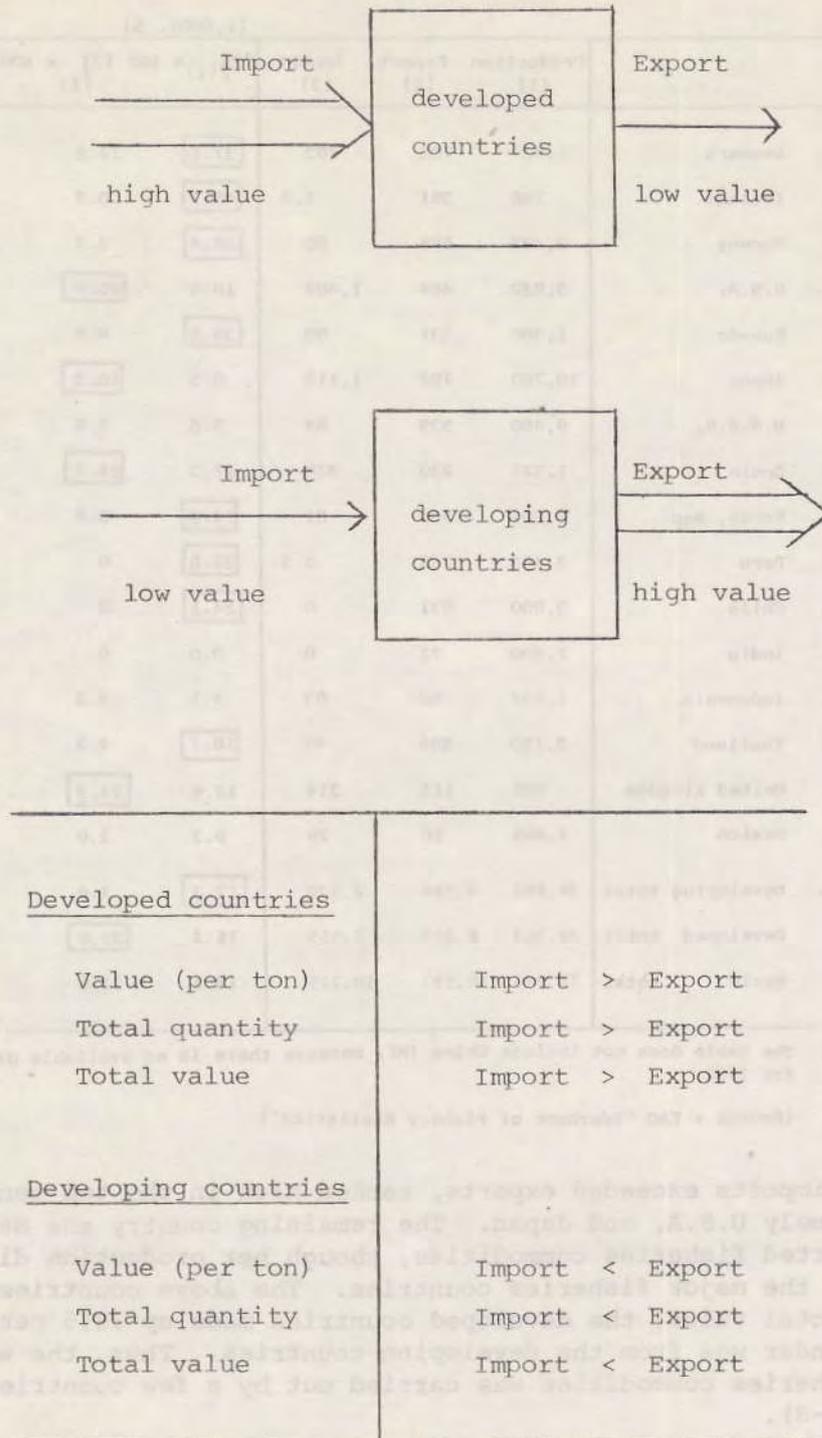


Diagram II-1 Patterns of trading structure

Table II-7 Exports and imports in major fisheries countries
(in 1982)

	(1,000t. %)				
	Production (1)	Export (2)	Import (3)	$\frac{(2)}{(1)} \times 100$	$\frac{(3)}{(1)} \times 100$
1. Denmark	1,907	708	203	37.1	14.8
2. Iceland	786	361	1.3	49.1	0.2
3. Norway	2,463	698	60	28.4	2.4
4. U.S.A.	3,922	404	1,409	10.3	26.7
5. Canada	1,300	531	90	38.5	6.5
6. Japan	10,760	702	1,112	6.5	10.3
7. U.S.S.R.	9,450	339	84	3.6	0.5
8. Spain	1,327	230	328	17.3	24.7
9. Korea, Rep	2,281	340	81	14.9	3.6
10. Peru	3,453	783	0.3	22.6	0
11. Chile	3,860	931	0	24.1	0
12. India	2,400	72	0	3.0	0
13. Indonesia	1,957	80	83	4.1	4.2
14. Thailand	2,120	396	46	18.7	2.1
15. United Kingdom	880	111	214	12.6	24.3
16. Mexico	1,465	50	29	0.3	2.0
Developing total	36,682	4,390	2,570	12.3	7.0
Developed total	38,364	6,207	9,655	16.2	20.0
World total	75,046	10,597	10,225	14.1	13.6

1) The table does not include China (M), because there is no available data for 1982.

(Source : FAO "Yearbook of Fishery Statistics")

group whose imports exceeded exports, ranked high in the top ten exporters, namely U.S.A. and Japan. The remaining country the Netherlands, actively exported fisheries commodities, though her production did not reach that of the major fisheries countries. The above countries exported half of the total value: the developed countries made up 38.5 per cent, and the remainder was from the developing countries. Thus, the world export of fisheries commodities was carried out by a few countries. (See Table II-8).

Table II-8 Largest fish exporters and importers in 1982

Exporters	US \$ Million	Importers	US \$ Million
1. Canada	1,291	1. Japan	3,998
2. U.S.A.	1,034	2. U.S.A.	3,226
3. Denmark	901	3. France	1,056
4. Norway	881	4. United Kingdom	886
5. Japan	807	5. Germany, F.R.	819
6. Korea, Rep.	759	6. Italy	755
7. Mexico	620	7. Hong Kong	467
8. Iceland	536	8. Spain	466
9. Netherlands	504	9. Nigeria	400
10. Chile	408	10. Belgium	327
Total	7,748	Total	12,420
% of World Total	50%	% of World Total	75%

(Source : FAO "Fishery Commodity Situation and Outlook 1981/1983")

12. The fisheries commodities in the international market predominantly converged on the developed countries. As indicated in Table II-8, only eight countries are classified as developed ones who received 70 per cent of world imports, in value. Particularly, the three largest importers, namely, Japan, U.S.A. and France, absorbed a greater part of the fisheries commodities in the market, and their aggregated contribution reached more than half the total. On adding another two importers to the developing countries, (Hong Kong and Nigeria) all countries in the Table constituted 75 per cent of world total imports. This remarkable flow of imports to a small number of countries inevitably affected the channels of commodities flow from exporters. That is, we can assume that an exporter depended only on the demands of a few importers. The developing countries more apparently showed this tendency. Indeed, in 1982, it was nearly the majority of fish and fishery products, in value, that these countries sent out to a sole importer: Japan. Furthermore, three quarters of the exported commodities in the developing countries were oriented towards the three largest importers: Japan, U.S.A. and Hong Kong. As well, exporters in the developed countries showed the same tendency as the developing countries. However, the concentration of the exporters in the developed countries seemed to be less remarkable than the developing countries. Concretely, the largest importer of commodities exported by the developed countries, which was the U.S.A. in 1982 — not Japan, absorbed no more than 18 per cent of

their exports in value. Moreover, the three largest importers for the developed countries received only 40 per cent of their exported commodities. Finally, the aggregated percentage for the five largest importers scarcely constituted half of the developed countries exports. Accordingly, there was much difference in the extent of exports to a few countries between the developed and developing countries. Of course, there were two types of exporters among the developed countries. The first type is a country whose export commodities tended to be scattered, not concentrated. The Western European exporters, such as Norway and the Netherlands, belonged to this category. On the other hand, the other type literally exported fisheries commodities to one or two importers as did the developing countries, namely U.S.A. and Canada.

13. Along with the description thus far, we will assume that the trade of fish and fishery products in the world were carried out between neighbouring countries, or between a few countries. This assumption is based mainly on the fact that not only imports but also exports tended to converge on the developed countries. Strictly speaking, the market in the developed countries may consist of three areas (or countries), namely Western Europe, Japan and U.S.A.. Therefore, the world commodities flow is indeed towards the above three areas, and besides the small part of them linked to the market in the developing countries. Table II-9, showing the movement of fisheries commodities between exporters and importers provides insight into the characteristics of world trade. First of all, we find that the active trade of fish and fishery products was steadily established within a region. For instance, the importers in West Europe obtained nearly half of their imported commodities from neighbouring countries. The largest importer in the region, France, was supplied with at least one third of her imports by her neighbours. Similarly, in the United Kingdom, the majority of the imports came from the large exporters in the region. In other words, the exporters may prefer trade within the region than with external areas. Typically, Denmark and the Netherlands directed almost three quarters of their exports to their neighbours, not external partners. On the whole, exporters in Western Europe seemed to regard regional export as important, except for Iceland. This attitude of the exporters towards regional distribution was in common with that in North America. Depending on a great demand for fish and fishery products in the United States, Canada and Mexico distributed their commodities there; and, the United States, as their importer, received more than 50 per cent of these countries exports in value. Furthermore, the largest importer in Asia (Japan) urged neighbouring fisheries countries to concentrate their exports there. Both Korea R.P. and Thailand sent the majority of their exported commodities to Japan (in value). Thus, regional distribution was most important to the exporters.

Table II-9 Trade matrix for major importers and exporters in 1982

To \ From		Japan	U.S.A.	Western ²⁾ Europe	Hong Kong	Nigeria	Singapore
Canada		201	768	256	4	1	2
U.S.A.		605	-	202	-	-	2
Japan		-	193	121	49	50	20
Western Europe ¹⁾		55	387	2,474	2	149	2
Developed Countries		1,112	1,633	3,979 ³⁾	79	288	54
Western		1,055	1,520	3,929 ³⁾	79	278	43
Eastern Europe and USSR		57	13	50	0	10	11
Developing Countries		2,887	1,642	927	388	10	131
Total		3,998	3,275	5,334	467	298	184

1) Major exporters in the region are as follows:

Denmark: Norway : Iceland : Netherlands : Spain: United Kingdom:
France : Germany F.R.

2) Major importers in the region are as follows:

France : United Kingdom : Germany F.R. : Italy : Spain : Belgium:
Netherlands : Denmark : Sweden : Switzerland.

3) This figure does not include Spain.

(Source : FAO "Fishery Commodity Situation and Outlook 1981/1983")



14. Secondly, the figures in the above table indicate that the importers in the developed countries, simultaneously, supplied sufficient fisheries commodities to other nations. That is, the importers might be large exporters. As mentioned before, Japan and the United States actively imported and exported large amounts. The Western European countries, more or less, showed the same tendency as the above two countries, namely, Spain, the United Kingdom, France and Germany F.R.. In Spain especially, the imports were almost equal in value to exports; in 1982, and the import value was 466 million US\$, while exports reached 436 million US\$. Furthermore, the exporters frequently demanded other fisheries commodities which their importers produced. In other words, the relationship between exporter and importer might often be reversed. In reality, the developed countries in Western Europe and in North America, were active in exports and imports with their partners. By way of example, the United Kingdom exported 33 million US\$ to the Netherlands while importing 36 million US\$ from this partner. France exported 36 million US\$ to Germany F.R., and received 53 million US\$ worth from her partner. Such reciprocal trading of fish and fishery products between two countries can be perceived in the trade between the U.S.A. and Japan, and between the U.S.A. and Canada. Of course, there was generally a trading imbalance between the two countries. However, since the developed countries form the largest import market in the world, the exported commodities are more likely to flow towards it, accompanied by the brisk trade between the developed countries.

15. In contrast, the trade between the developed and developing countries appears to be rather simple, compared to that between the developed countries. The exporters in the developed countries directed approximately 80 per cent of their total exports, in value, to other developed countries, while the remainder was exported to the developing countries. On the other hand, the exporters in the developing countries showed the convergence of exports on the developed countries, whose percentage accounted for more than 80 per cent of the total export value of the developing countries. Therefore, the commodities flow from the developing countries to the developed ones might generally overwhelm the reversed flow. Mostly, the developing countries exported considerably more commodities than those imported from their partners. Thus we can assume that the movement of fish and fishery products in the world consisted of not only the flow from the developing to the developed countries but also the complicated trade between the developed countries. Apparently, the three largest market areas formed the regional distribution for fisheries commodities, and was linked to the developing countries outside their regions.

16. In the meantime, the largest fisheries countries, shown in Table II-7, can be classified into three groups, depending on the extent of export and import to their total production in volume. (See paragraph 11). As far as these countries were concerned, they were completely diversified, although, from an historical viewpoint, these diversifications have not existed for a long time. However, the major fisheries countries seem to have begun to diversify lately, for instance, Japan and some

importers in Western Europe used to be large exporters until the mid-1960s, then these countries faced a trading equivalence between imports and export and eventually they completely transformed themselves into large importers at the end of the 1960s. Of course, this tendency can be found later; for example, Spain became an importer at the end of the 1970s, up until then her exports had exceeded for imports. These countries at the time obtained a great amount of fish and fishery products from the international market. Probably, this alteration resulted mainly from the fact that their own supply of fisheries commodities could hardly respond proportionally to an ever increasing demand. In general, the increase of income per capita causes a rapid increase in demand for fisheries commodities, especially those of high value. Coincidentally, the markets in the developed areas require a wide variety of fisheries commodities. As we have experienced, these changes in market demands have encouraged the developed fisheries countries to increase imports, while giving a great impetus to fisheries development in the developing areas. Moreover, the increasing demand for fisheries commodities might result partially from the growth of a processing industry in which continuous investment probably required a large amount of raw materials, just like any other processing industry. These factors urged some fisheries countries towards an increase in imports. In fact, it should be noted that, for example in Korea R.P., the trade imbalance between exports and imports has recently been reduced gradually, because of economic development and the rapid growth of the processing industry. Of course, the declarations of the 200 miles Exclusive Economic Zones by the neighbouring countries influenced this change. Thus, some of the large exporters have progressed by increasing imports, while continuing to export. Coincidentally, there has been another type of fisheries country in the developed areas, where exports have still exceeded imports i.e. Norway and Iceland. Accordingly, the diversification among the fisheries countries in the developed areas may consist of two directions. The first direction is to further enlarge exports to the major market areas and the other is to increase imports more than exports.

17. On considering the above aspects, we may be able to illustrate the changes of trading structure in the major fisheries countries, from an historical point of view. Just like India, Indonesia and USSR, there exist self-sufficient fisheries countries most of whose production is for domestic consumption, not for export. This kind of developing country tends to export mainly high value produce to the developed countries, as India does a great amount of frozen shrimp. We can assume that some fisheries countries in the developing areas may have passed through the above process and then, they become major exporters, accompanied by the establishment of the fisheries industry (Exporters (I)). Depending on the benefit from export and its accumulation, these exporters will continue to invest in their fisheries. Afterwards, the exporters reach a turning point with a choice of two directions. The first direction leads to more development as exporters (Exporters (II)). The second direction leads to a transformation into importers, as described previously. Direction may be determined by

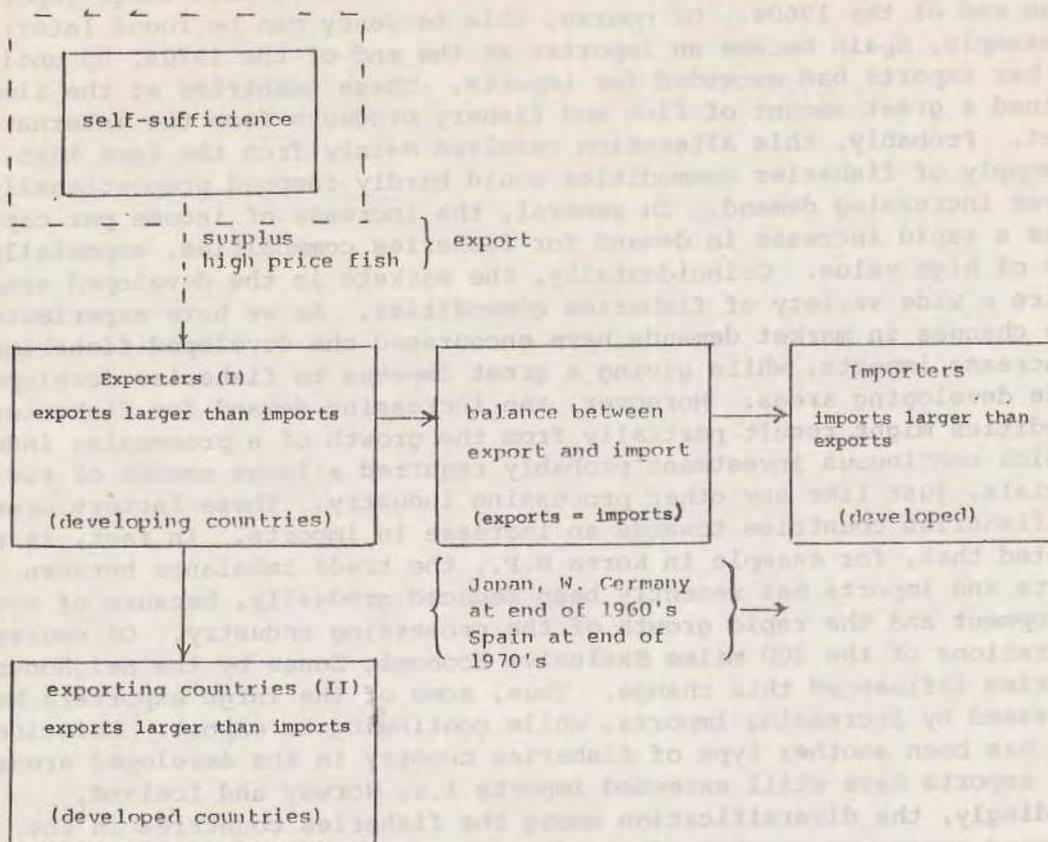


Diagram II-2 Change process of trading structure in major fisheries countries.

production and distribution, and may be coincidentally affected by the scale of domestic consumption. Probably, the existing major fisheries countries passed through these processes, or saw such a stage in their development. Of course, the illustration of the change process of a trading structure is absolutely hypothetical. As a whole, however, the trading structure of the fisheries countries may be altered in the long term, as it is affected by the growth of both the national economy and the fisheries industry itself.

III. Formation process of market and growth of producers

1. In fishery development, the most crucial factor to prompt the growth of fishery producers is the formation and expansion of the market. Normally, a market is thought to exist when buyers wishing to exchange money for goods or services are in contact with sellers wishing to exchange goods or services for money. In other words, a market mediates the flow of all commodities between buyers and sellers. Without a market, no producer can implement any commercial activity. In the change process from a traditional subsistence fishery to a modern commercial fishery, all fishery producers who intend to specialize in fishery production naturally have links to particular markets, in order to sell produce, purchase means of production, raise funds for investment and employ workers. Apart from the specific function of each market, the formation and development of these markets continuously affect fishery producers. This is because the results of producers economic activities at the markets determine the direction of their managements. For instance, the value of produce realized at a market may affect the scale of the producers next production, whenever the producers aim at selling their produce. The more dependently the producers carry out an economic activity at a market, the more likely they are to be influenced by the existing markets. In general, a link between market and producers has been in existence since long ago; however, the relationship between them has been changed by the social and productive surroundings. In the early stages where a self-sufficient economy dominates all production and consumption, a market probably covers a small area. Even though part of the fishery produce is for exchange, fishery producers transactions will not go beyond the small area. In contrast, currently, when the nationwide market is established and the monetary economy spreads all over the country, all producers (every field) trade their commodities absolutely freely, literally throughout the country. Simultaneously, such an expansion of the market naturally requires producers to achieve much more efficient production and distribution than before. Of course, the requirement of fishery producers varies according to the development stage, since there is a considerable difference in dominant economic principles between each stage.

2. The market has passed through several development stages both theoretically and historically. In the following section the market development process will be focussed on, taking into account how fishery development (or the growth of fishery producers) has been influenced by the existing market. We can roughly divide market development into three stages, depending not only on the extent of expansion of the market area but also on the characteristics of the predominant fisheries. The earliest stage, namely pre-capitalism, is when barter starts to dominate in a primitive community. At the second stage, a local market is formed covering some communities; and there, the monetary economy gradually affects the producers activities. In the third stage, the nationwide market comes into existence, through the enlargement and unification of local markets. A monetary economy dominates all economic activities throughout the

country. Along with the above divisions of market development, we will refer to the characteristics of each stage.

3. The earliest stage is characterized by the appearance of barter in a primitive community where a self-sufficient economy covers all the activities of the community's members. Not only the community, but also each household unit, carries out various work in order to fulfill their own immediate needs. Therefore, almost all produce and products are consumed within the community. In general, at this stage, environmental conditions strongly affect all production in the community; accordingly, it is difficult for the community's members to accumulate wealth through their production. Moreover, there is hardly any surplus produce or products for exchange. Such relatively low productivity (little surplus) may not allow individuals to possess the means of production. As found in agricultural production in order to produce efficiently, the major means of production such as land and tools often belong to the community, not to individuals. To some extent, of course, individuals take possession of the means of production and produce by themselves. As a whole, however, it is much more efficient for the community's members to cooperate with one another. Initially, therefore, a slight exchange of goods occurs when production generates a little surplus. Afterwards, the increasing and steady production in a community will bring a significant alteration which encourages the production of barterable goods. A slight accumulation of surplus resulting from exchange soon stimulates individuals to own privately the means of production which used to belong commonly to the primitive community. Based on the modest expansion of private ownership in the community, production for exchange gradually increases. This tendency further accelerates the private ownership of means of production, since part of the accumulated wealth derived from exchange will be put towards it.

4. An active exchange of goods between community members (or household units), tends to spur each to specialize in a particular production: division of labour. Of course, at the outset of barter, goods for exchange are dependent only on the surplus, i.e. what is leftover after domestic consumption. As long as only the most primitive tools are used, production probably fluctuates according to environmental conditions. Therefore, barter itself is greatly affected by these unavoidable conditions. However, private ownership spurs individuals to improve their tools and conditions of production, which certainly produces a surplus continuously destined for exchange in a community. Obviously, there will be a greater surplus which is always delivered to the community in order to respond to its members demands. Through this process, barter modestly spreads the community's production. Simultaneously, the division of labour in the community progresses proportionally to the expansion of barter. Naturally, the spread of barter calls for an increase in the production of barterable goods. In other words, the appearance of those receiving barterable goods requires a steady supply of their necessities from others. This fundamental requirement leads suppliers to increase the surplus linked to barter. To efficiently

produce a larger surplus, a household unit tends to specialize in particular barterable products. The household unit may enlarge their production by owning particular production tools, while receiving goods from other household units. Apparently, barter needs, as a basis, the coexistence of distinct specialized households. That is, the existence of household units specializing in distinct and particular productions will provide a wider range of exchangeable goods. The more widely the division of labour extends over the community, the more barter is likely to predominantly influence the production of community members. In a community, a market for barter appears thus; however, as long as barter is carried out only in a community, the production of a surplus cannot exceed existing demands. Therefore, barter is destined to face an obstruction to its expansion, which eventually determines the progress of the division of labour in the community. As a whole, all production in a community is for its members consumption, part of which is by barter.

5. In addition, a barter economy is established between communities which produce different goods. Manifestly, concentrating on particular products may raise their productivity, which results in a surplus suitable for exchange. Gradually, each community strives to create a surplus, while reducing the products which can be supplied by another community. In fact, by way of example, in the past we find large-scale barter between agricultural and nomadic tribes. A barter relationship which creates obligations between communities urges them to concentrate on particular productions in order to secure a surplus.

6. At the barter stage, if surplus production is continuously beyond the demands in a community, producers with a surplus intend to transfer their produce to another community. This is a great incentive to local market formation. In the past of significant impetus in prompting fishery development was the emergence of a demand for fishery produce, especially from outside a community. Even though some households can increase fishery production for exchange, they will soon have difficulty with their outlet. Furthermore, their accumulation of benefits resulting from barter was limited proportionally to a small number of transactions within the community. On the other hand, an enlargement of the trading area provides more opportunities, not only of transforming fishery produce, but also of accumulating benefits from exchange. That is, the expanding division of labour in a single community, within an area, generates a wider trade of barterable goods. Even in a small area where the concentration of particular products increases among community members, there must be a large outlet for produce and products. While a producer in a particular field relies on products from others producers, he tends to specialize in his own major production. Generally, any producer attempts to efficiently apply his family labour and means of production. In this process, based on establishing a division of labour, a medium to easily mediate the exchange of goods is necessary in order to measure the value

of a product: money. This is because barter, being complicated, requires some product which is widely accepted as a means of payment. The expansion of the trading area accelerates the division of labour and is accompanied by the utilization of money. This is, a modest, monetary economy, which steadily controls production activities. Furthermore, the division of labour in the area creates a certain number of households which have little relation to any foodstuff production, for example, those who engage in handicrafts and commerce. Obviously, the simple social component of a community, converging food production, is going to be diversified. Simultaneously, the appearance and growth of these strata result in a rise in demand of foodstuff.

7. Similarly to agriculture, fishery still contains self-sufficiency, even after the division of labour advances. The speed of a producer's specialization in fishery may not be as fast as that in other production sectors. Since he probably carries out multiple productive activities using his family members. This is because the family's priority is most importantly, to support themselves through various activities. As long as subsistence needs can be supplied by the work effort of family members without purchasing, their productive activities remain self-sufficient. When compared to those uninvolved in food production, producers in fishery (and in agriculture) are more likely to persist in the production of their subsistence needs. However slowly, households partially operating fishery show notable tendencies, namely, the subsistence fishery households will diversify, influenced by a division of labour in their community. A household implementing multiple production activities, ceases some of them, when it recognizes that exchanges are more favourable than self-production. For instance, agricultural production may gradually diminish while the household inclines towards fishery production. Moreover, the family members stop making the tools of production. Instead of being home-made, the means of production are provided by specialized producers. Yet another change lies in the separation of fish processing. The appearance of a professional processor makes a fishery household a supplier of raw materials. Finally, the exchange activities of the household are committed to the charge of another person: merchant. Normally, such divisions of labour in the fishery field do not progress rapidly, but slowly. The formation of a local market, accompanied by the diversification of production activities among community members, is a major factor in encouraging households to concentrate on a particular production, mainly for sale.

8. Inevitably, the economic characteristics of fishery households (or producers) are altered by these modest movements. First of all, the subsistence fishery, whose production is partially directed to exchange, develops towards commercial fishery. That is, within a local market, some of the fishery households actively exchange their produce for money, and receive necessities by paying money. Therefore, an important criteria in their production activity is to obtain as much benefit as possible, through these exchanges. In contrast to the subsistence fishery in the

early stages the first priority of the household is not always to secure their subsistence needs themselves. To the extent that the households needs can be economically satisfied by purchasing other necessities, they will continuously be inclined towards fishery production. Those who elect to sell their produce are mainly concerned with the accumulation of benefit rather than the production of subsistence needs. This is merely because the scale of accumulation probably determines the size of future exchanges through the enlargement of production. However, on the other hand, these producers show another characteristic. Concretely, their fisheries operation still relies on the labour of family members. Therefore, those who have begun to accumulate capital have not yet become complete entrepreneurs. They still sustain the traditional family economy oriented towards self-regulating subsistence, although they will be a component of the progressive division of labour in a local market. Suppose that means of production has not sufficiently developed, and that the accumulation of capital is not enough to seek an effective means of production. The family economy is one which regulates the intensity of production and the size of the return on labour. Accordingly, in order to satisfy family needs, the household economy is predominantly directed to intensifying the family labour. This direction naturally leads to an increase in total labour income in the family economy. That is, the size of the work effort is more likely to affect the economy.

9. The formation of a local market, is generally thought to be the first step towards pure commercial production. All commercial production generated by the expansion of the exchange economy is further advanced by an increase in production and productivity. In a local market, the rapid growth of a manufacturing sector (domestic industry at this stage) and a commercial sector give great impetus to the further expansion of the market area. This is because the rises in production and productivity demand a larger market, and because the growth of a commercial sector realizes trade between local markets. Eventually, a local market is absorbed or combined with others. Most crucially, from a historical viewpoint, the innovations of technologies in production, resulting in rapid increases in commodities production, accelerated this movement. The manufacturing sector absorbed large numbers of the population as labourers, mainly from the agricultural sector. In return, this sector provided manufactured goods. By this process, the scattered local markets were joined. In local markets where the manufacturing sector rapidly accumulated capital from exchanges of goods, there would be the appearance of an urban area through a concentration of population. As a consequence, such an urban area was a center in the flow of almost all commodities due to the growth of the population. Basically, local markets were linked to large urban markets; finally, the nationwide market appeared through the continued expansion of these markets.

10. In the above process, fisheries households (or producers) have close links to an enlarging local market and, of course, the nationwide

market. In particular, a rapid increase in urban population engaged mainly in the manufacturing sector automatically demands more efficient and greater foodstuff production. The former type of fishery households directly linked to the family economy must be adapted in order to satisfy an increasing demand for fishery produce. The fishery households have to enlarge their commercial production, and to more efficiently adapt themselves to the monetary economy infiltrating their family management. Earlier, the strategy of increasing production is achieved by hiring labour from among the family members. That is, a fishery household is labour intensive. Automatically, the hiring of external labour provides an important change in the family economy: labour costs. Formally, a fishery household aimed at earning as much income as possible, using family members; accordingly, a household often ignored its own labour costs. In contrast, a household management employing labour must be based on the principle that any commercial production attain a benefit which will cover the necessary labour costs, of course, including the cost of the family members. Next, a labour intensive management attempts to invest in production facilities and equipment which the manufacturing sector produces. Therefore, the household lies in the line of capital intensity. A complete dependence on industrial goods, instead of home-made ones, is another change for the fishery household. That is, commercial production expects a sufficient output in proportion to investment. In a household which depends on family labour, their work effort may cover a shortage of output against the cost of investment. However, a management accepting the concept of labour costs attempts to cover at least the costs of labour and investment, from its commercial production. Otherwise, the management will face a diminution in future production. Moreover, this kind of management must be conscious of the size of return to total input of capital. For an increase in fishery production, the most basic method is to obtain as much profit as possible, part of which is to enlarge the next investment. During development from a local market to a nationwide market, a fishery management will mostly be concerned with the size of return to total capital input, not total income. Thus, a management linked to the family economy tends to establish the above principles while separating it from the principle of the family economy. In other words, the management is progressing towards an enterprise.

11. Along with introducing a division of labour, a fishery producer alters his economic characteristics. For instance, at the local market stage (and its expansion), a fishery operation is affected by the family economy. However, at the stage where the nationwide market is established and the division of labour progresses further, a fishery producer is more likely to favour fishery production, based on a relationship with other sectors, such as the commercial and industrial sectors. In other words, the producer tends to strengthen his links with the market. Therefore, a fishery producer's market link directly determines his growth.

12. In general, one fishery production cycle of a fishery producer (or a household) is divided into three stages, namely, purchase, production and sale. The producer inevitably has links with specific markets, as shown in Diagram III-1. Prior to production, a fishery producer appears in the purchasing market to buy production materials and equipment. In addition, he seeks a labour force from the labour market. Moreover, a fishery producer whose capital is insufficient for his needs may go to the financial market. These production elements are invested in the production process, accompanied by his possessed means of production, his family's labour and their capital. As a result of the investment, a producer will obtain fishery produce. He then appears on the fish produce market to sell his produce. Thus, a fishery producer (or a household) must have connections with various markets, except for the process of production. In the purchasing process, the producer is charged a payment by suppliers; in the sale process, he receives payment for his produce from purchasers. Accordingly, the development of a market is based on the fact that a market has strong links with the production cycle of all commercial producers, that is, from purchase to sale. Meanwhile, suppose that a producer is supplied all production elements by the markets: total input. Furthermore, we suppose that his production is delivered totally to the fishery produce market in exchange for money: total output. Simply, we can deduce that the balance between input and output has three patterns. The first pattern is that output is equivalent to input: a fishery producer is able to cover at least all necessary costs from his production, but cannot obtain any profit. The second pattern is that output exceeds input: the producer obtains some profit. The third pattern of the balance between the two is that output is below input: the producer cannot even cover all necessary costs with his commercial production, and he suffers from a deficit. Naturally the volume of input in the next cycle of production varies, according to the balance between input and output of the previous cycle. A producer, whose output was equal to input (first pattern), will probably input the same volume as in the former cycle. Accordingly, he expects the same volume of output as before. As to the second pattern, a producer may increase volume of input in the next cycle, which is supported by his former profit. This increased input may result in an increase in the next output; therefore, the producer can enlarge his production scale. In contrast, a fishery producer, who faced a loss in the previous cycle (third pattern) is destined to reduce volume of input in the next one. Inevitably, his output will decline. Thus, a close link between markets and fishery producers creates at least three different patterns of input and output balance in one cycle of production. Furthermore, the differential of producers output in the next production will be determined by the previous balance. Consequently, we may conclude that the development of a market coincides with the expanding differential in fishery producers outputs.

14. In the light of the above discussion, we may assume that the process of market change has certainly stimulated the appearance of

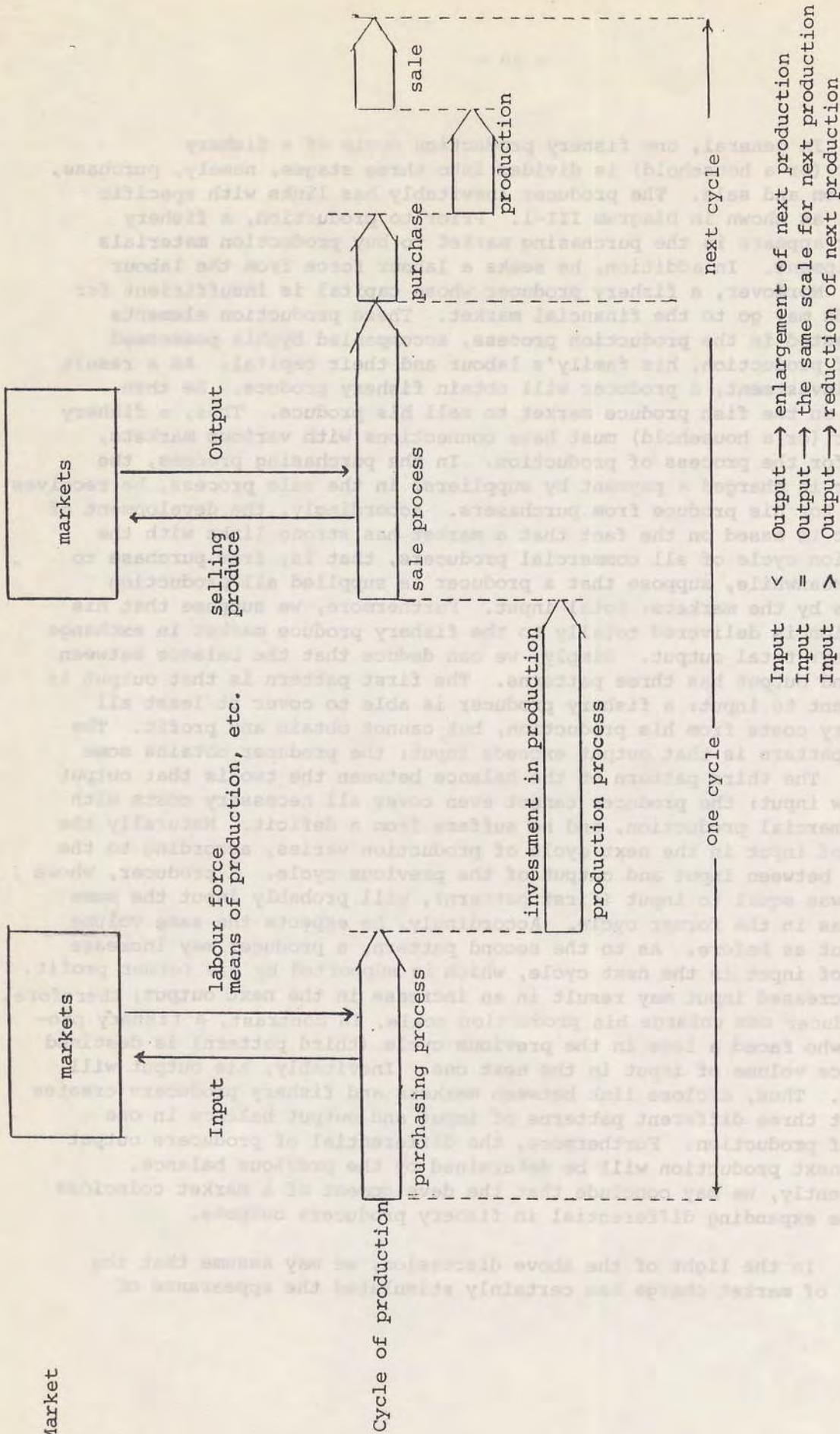
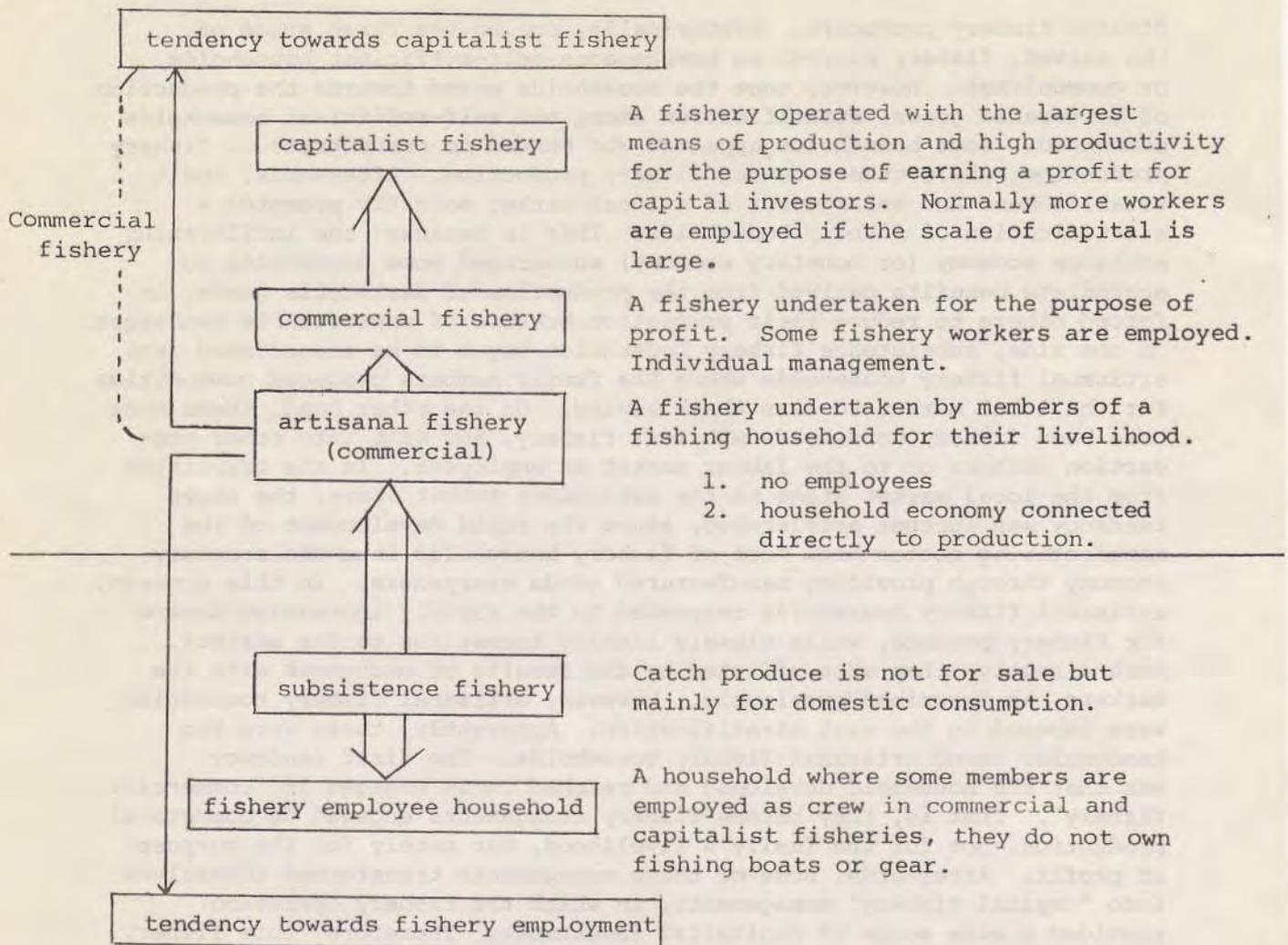


Diagram III-I Relationship between markets and production

Market

diverse fishery producers. Historically, during the first stage of the market, fishery evolved in homogeneous self-sufficient households or communities. However, once the households moved towards the production of barterable goods, stratification among the self-sufficient households commenced. Some households appeared who tended to concentrate on fishery production; while others ceased fishery production. Afterwards, the establishment and enlargement of a local market modestly prompted a stratification of fishery households. This is because: the infiltrating exchange economy (or monetary economy) encouraged some households to accumulate benefits derived from the production of marketable goods, or forced others to reduce their production because of unprofitable exchanges. On one side, subsistence fishery households began to be transformed into artisanal fishery households where the family members produced commodities for the local market to earn their living. On the other hand, there must have been fishery households who left fishery, and went into other production sectors or to the labour market as employees. In the transition from the local market stage to the nationwide market stage, the above tendency was further accelerated, since the rapid development of the manufacturing sector drew most of fishery households into the monetary economy through providing manufactured goods everywhere. In this process, artisanal fishery households responded to the rapidly increasing demand for fishery produce, while closely linking themselves to the markets. More directly, they were affected by the results of exchanges with the markets, as described previously. However, artisanal fishery households were exposed to the next stratification. Apparently, there were two tendencies among artisanal fishery households. The first tendency was that the household developed and reached those engaged in "commercial fishery". That is, they became fishery managements engaged in commercial production, not for the family's livelihood, but merely for the purpose of profit. Afterwards, some of these managements transformed themselves into "capital fishery" managements, in which the fishery operation provided a wide scope of capitalist investment. Therefore, this fishery existed for the purpose of earning profit for capital investors. In contrast, the second tendency of artisanal fishery households was that they were fishery employee households or employees in other manufacturing sectors. Thus, the spread of the monetary economy into fishery, in which fishery households established a link with the market, accelerated a stratification of the existing fishery households. (See Diagram III-2).

15. The description thus far focused on changes in the market and the direction of stratification. Diagram III-2 points to the historical development process of fishery producers or households. In fact, it often occurs that these strata (See Diagram) have existed simultaneously, even in countries where fisheries are highly developed. Therefore, it might be necessary to go into more detail regarding the relationship between the market formation process and the growth of fishery producers in each country. This will be covered in future subject matter.



- Notes: 1) This figure does not include the process by which merchant capital is transformed into fishery capital.
- 2) This is adapted to the diagram drawn by Dr. T. Yamamoto "Sekai no Suisan" (Fisheries of the World)

Diagram III-2 Fishery stratification.

IV. Development of fishery produce market

— Changing market's system and fishery producers —

1. With reference to the previous chapter, we can also note that economic characteristics of particular markets, such as the market for production materials and the market for fishery produce, affect the fishery producers. In particular, the fishery produce market has predominantly influenced the production conditions of all fishery producers. For those, even slightly, engaged in commercial production, the process of selling produce tends to determine the volume of capital accumulated in their managements. That is, the size of return on the producers investment is normally determined by delivering their produce to the market. Apparently, all producers must obtain as high a value for their produce as possible. From a historical point of view, the development process of the fishery produce market has been based on this simple and essential desire of fishery producers. Apart from theories concerning the formation of market price, we may have to examine how the fishery producers have approached their economically essential demand. Before discussing the above subject matter we will mainly focus on how the fishery produce market has altered the link to fishery producers, while the market itself has changed its economic functions. The following description will provide an insight into the growth process of fishery producers into independent commercial ones.

2. A fishery produce market normally consists of fishery producers, intermediaries and consumers. Generally, a reciprocal relationship between the above has changed according to the level of fisheries development and the market growth process. Taking into account the relationship between fishery producers and fisheries produce intermediaries, we can divide the change process of the marketing system into three stages. The first stage is where the monopolistic merchant predominantly channels the commodities flow from the production area to the consumer area. The second is where the wholesale merchant manages the production and distribution of fishery produce, responding to increasing transactions. The last stage is where the so-called "wholesale market" dominates the flow of fishery produce. Along with the third division, we will discuss the relationship between market's system and fishery producers, on referring to a model of the change of market's system.

3. Suppose that the households in a community engage in subsistence fishery, and that produce is not for sale, but mainly for domestic consumption, of great impetus in encouraging them to commence commercial production is the appearance of a merchant. In the early stage, this sort of merchant often transfers fishery produce from a remote production area to a consumer area. Sometimes, however, subsistence fishery producers cannot immediately respond to a large demand by the merchant because of

their undeveloped means of production. In order that a merchant can satisfactorily receive produce, he may cover a wide area where several subsistence fishery producers can efficiently respond to his demand. In advance of production, the merchant will provide necessary production materials and equipment, or a small amount of capital, with which the producers will increase their production. In return, the fishery producer who receives such support will exclusively and continuously sell his produce to the merchant. Normally, the producers are obliged to do so, regardless of the produce price the merchant offers. The merchant is able to remain in a monopolistic position over the producers by setting the purchase price of produce and providing production materials at will. As long as producers sustain a subsistence economy, such a monopolistic merchant tends to benefit from transactions with the producers since the merchant diminishes the amount of the producers surplus to a level where they can only maintain a minimum standard of living. Thus, the merchant's profit usually includes part of the surplus which would otherwise belong to the fishery producers.

4. However, the appearance of a merchant in a stagnating subsistence community incites fishery producers to switch from the subsistence fishery to the commercial fishery. Even though a small amount of exchange has already been carried out in a small area, the subsistence producers can no longer transport their produce to a large distant consumer market. Inevitably, both the production and consumer areas need an intermediary to collect and deliver fishery produce. By his intervention, produce with no value to a community will be turned into a valuable commodity at a market. Initially, a monopolistic merchant has two fundamental economic functions in the flow of fishery produce. When the demand on a consumer market is low, the merchant functions not only as a collector in the production area but also as a retailer at the market. Therefore, the merchant is mostly concerned with the difference between the purchase price at the production area and the retail price at the market. In order to obtain a large difference between the two, he is likely to offer as low a price as possible, to fishery producers. Through payment in advance, sometimes including daily necessities, a monopolistic merchant reduces the purchase price of his produce, as described previously. In addition, he may stand in a monopolistic position at the market, as the distribution of fishery produce is not well organized. Thus, a weak link between production and consumption encouraged the monopolistic merchant to channel the commodities flow by which he benefited immensely.

5. Meanwhile, the growth of demand for fishery produce in a consumer area is an impetus to the evolution of the simple marketing system organized by the monopolistic merchant. First of all, the merchant must separate his two economic functions (collection and retail) in the interest of efficient distribution. With an increasing demand, the so-called "retail trade", which is the final link in the chain of distribution between producer and consumer, is carried out by another type of merchant: the retailer. (See Diagram IV-1). He concentrates on obtaining fishery

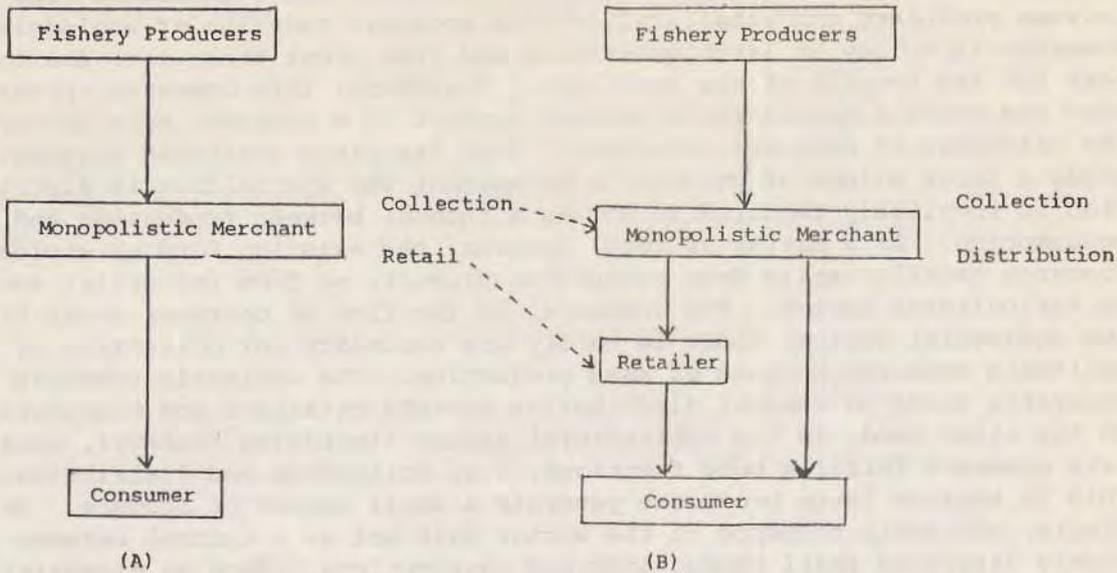


Diagram IV-1 Fishery producers and monopolistic merchants

produce from the monopolistic merchant and selling it to the consumer. The formation of retail trade enables a monopolistic merchant to specialize in the collection of fishery produce and not spread his capital between collection and retail. The merchant may, therefore, be able to enlarge not only the volume of fishery produce transacted but also his collection area. Thus, the functions of the original monopolistic merchant are divided into, so-called "wholesale and retail commerce". More crucially, however, an increase in demand for fishery produce also results in the appearance of the competitor. This is because one monopolistic merchant cannot collect a sufficient amount of commodities to cover the increased demand, nor is his capital sufficient to do so. The newcomer, whose objective is initially to obtain profit as did the first monopolistic merchant, disturbs the monopoly through competition. This may lead fishery producers to a certain degree of freedom in their production and distribution. As a result, they may be allowed to accumulate surplus slightly. However, a fishery producer will still have considerable obstruction to his growth, as long as the commodities flow from the production area to the consumer market is not steadily organized. Because of this a new type of merchant with capital and power is needed in order to control and rapidly expand production and distribution.

6. Wholesale commerce, in general, mediates the commodities flow between producers and retailers, and the economic function of wholesale commerce is to buy in large quantities and then break these into smaller lots for the benefit of the retailers. Therefore, this commerce appears, when and where a demand for a certain product in a consumer area encourages the existence of numerous retailers. That is, since scattered consumption needs a large volume of product, a management who specializes in distribution is inevitably required to act as a channel between production and consumption. As a matter of fact, however, the existing form of wholesale commerce usually varies from product to product, or from industrial sector to agricultural sector. For instance, in the flow of consumer goods from the industrial sector, there is hardly any necessity for collection by wholesale commerce because of mass production. The wholesale commerce generally tends to channel distribution towards retailers and consumers. On the other hand, in the agricultural sector (including fishery), wholesale commerce fulfills both functions, i.e. collection and distribution. This is because large producers generate a small amount of produce. Accordingly, wholesale commerce in the sector must act as a channel between widely dispersed small productions and consumptions. Such an essential distinction in the agricultural sector unavoidably influences the relationship between producers and wholesalers. In fishery (as well as agriculture), particularly in the early development stage, wholesale commerce has various economic functions which influence both producers and consumers. Instead of specializing in either side, at this stage a wholesale management is more likely to powerfully control both sides.

7. A wholesale merchant first organizes many fishery producers who are trying to enter commercial production. Advance payment is the most efficient method in encouraging fishery producers to increase commercial production, similarly to the monopolistic merchant. However, more advance payment goes to the fishery producers than before, since the merchant is sure of a greater demand at the market. Clearly, the advance payment enables a producer to invest in his means of production, through which he gradually changes his subsistence fishery production into a commercial one. The guaranteed sale of produce to the wholesale merchant is important in stabilizing fishery production. This probably allows the fishery producer the opportunity of accumulating a slight surplus. Soon, there will appear fishery producers who intend to strengthen the work effort of family members, depending on the guaranteed advance payment and sale of produce. More work effort will help these producers earn more income from fishery. For fishery producers, a steady flow of advance payment is a great incentive to produce more commodities for the purpose of sale. Simultaneously, we have to note that a fishery producer with direct ties to a wholesale merchant is greatly affected by his commercial activities. At the stage where fishery producers are not economically independent, the wholesale merchant obviously stands at an advantage over the producers

since the penetration of the monetary economy compels them to link more closely with other markets, typically for the purchase of production materials and necessities. As long as the producers do not have sufficient funds to satisfy their needs, they have to depend on the wholesale merchant. Besides the regulated advance payment, the merchant occasionally provides funds oriented towards not only production but also the producers daily needs. The merchant functions as a money lender. Yet a wholesale merchant may manage the handling of production materials, too. Thus, in a collection area, the merchant's activity is diversified, and links the household economy of the producers to the wholesale merchant. Without the merchant's support, hardly any producer can continue commercial production, nor maintain daily life. As a consequence, the producers are forced to sell exclusively their produce at the price the merchant offers. Moreover, the producers are less likely to obtain a high value from their transactions with the merchant, when they are dependent on the merchant's activity.

8. In the same way as fishery producers, retailers will be under the control of a wholesale merchant, mainly because of widely dispersed retail. To secure fishery produce, a retailer is often attached to a particular wholesale merchant. Instead of advance payment, the retailer receives produce on credit. This transaction facilitates a retailer to enlarge the amount of produce sold. Generally, a small amount of retail will not allow retailers to accumulate sufficient funds to purchase produce. Therefore, the credit of the wholesale merchant enables a retailer to purchase steadily. Dependent on regular transactions with the merchant, the retailer can continue his activity. However, we should also note that the amount of credit given by the wholesale merchant is determined by the amount of produce sold by the retailer. Moreover, the produce purchase price may be at the discretion of the wholesale merchant, when the retailer is heavily dependent upon him. Therefore, the relationship between them is similar to that between the wholesale merchant and fishery producers. In addition, the wholesale merchant has various economic functions in the distribution of fishery produce. For instance, he may store fishery produce and transport it by himself. Furthermore, he will undertake the necessary financial activities when delivering fishery produce. Thus, in the distribution process, the function of a wholesale merchant is diversified, in accordance with the dispersed distribution of the consumer's market. Eventually, his economic performance integrates fishery production with consumption and he forms the commodity flow from producer to consumer through the retailer.

9. Obviously, such a powerful merchant, who controls production and distribution, stimulates fishery development at an earlier stage. First of all, the existence of a wholesale merchant encourages the growth of the production area. In his collection area, there will be some fishery producers who concentrate on fishery production, depending on the steady collection of the merchant. Instead of domestic consumption, the producers endeavour to increase commercial production. While inputting more work

effort by the family's members, they will invest in highly developed equipment with the financial support of the wholesale merchant. This movement extends over many producers in the merchant's collection area, and total fishery production will be increased by the collection and related activities of the wholesale merchant. Furthermore, fishery producers outside the collection area may gravitate towards this growing production area while seeking an outlet for their produce. This centralization of fishery produce rapidly stimulates other wholesale merchants and retailers to gather together. By this process, distribution facilities will naturally be invested in by these merchants. The greater capacity of such facilities enlarges the amount of produce inflow into the area. Finally, the production area absorbs the previously scattered produce from adjacent areas and directs them towards consumer areas. For instance, of such major production areas, one which is adjacent to a large consumer market, will function as a center for collection and distribution. That is, the growth of a production area probably results in the enlargement of collection and distribution, by joining with other areas.

10. Along with the growth of the production area, the commercial function of the wholesale merchant will be altered, since the enlargement of fishery production requires him to collect and distribute fishery produce efficiently and over a wide area. For the time being, the collection of produce is partially done by other fish collectors under his control. This type of collection enables the wholesale merchant to assemble more produce than he could singlehanded. Moreover, this reduces the merchant's collection costs. Initially, collectors only carry out the collection activity for a merchant. Therefore, to the wholesale merchant, the existence of collectors merely causes an increase in collected produce. Later, the wholesale merchant can reduce his collection costs as the collectors accumulate, to some extent, benefits through his activity. However, in order to maintain an exclusive connection with the collectors, the wholesale merchant continues to finance them. This enables the merchant to be the exclusive purchaser of produce from the collectors; and they are obliged to provide produce at a price the wholesale merchant offers. Therefore, as long as the merchant can maintain such a close relationship with collectors, he may indirectly control the flow of produce from producer to collector. Furthermore, the merchant will be partially protected from the risk involved in a direct link to fishery producers. Regardless of an exclusive right to purchase from the producers, because of advance payment, the merchant unavoidably encounters their defaults caused by unstable fishery production. After the appearance of collectors, the advance payment to fishery producers tends to be done by the collectors under the merchants control. Therefore, the merchant mainly provides a source of advance payment to the collectors. No doubt, an indirect link to fishery producers leads the merchant to an efficient allocation of funds. Especially when enlarging the collection area, the wholesale merchant integrates many small collectors, through financial ties and guaranteed purchase of collected produce.

11. At the same time, another function of the wholesale merchant will gradually be left to another type of merchant: the distributor. Instead of direct distribution to retailers, the merchant makes distributors channel the flow of fishery produce from him to retailers. An expansion of distribution areas, coincidentally with a rapid rise in demand for produce, requires the merchant to rationalize distribution. This is not only because direct connection to retailers generally obliges the merchant to remain in the distribution of a small area, but also because this system needs considerable revolving funds for distribution. The small amount of purchases by retailers from the wholesale merchant force him to spread the allocation of produce and funds. Compared to many retailers, distributors receive a comparatively large amount of produce and deliver small amounts to related retailers. Accordingly, many channels of fishery produce are efficiently united. Of course, any transaction between the two merchants is dominated by the wholesale merchant, not by the distributors. That is, depending on a guaranteed supply of fishery produce, the wholesale merchant is in a favourable position over his distributors. A stable supply is normally accompanied by the financial support of the wholesale merchant. Therefore, the distributors exclusively receive produce from a particular merchant. Moreover, they themselves tend to transact with particular retailers. Their relationship seems to be similar to that between the wholesale merchant and distributors. Thus, while the wholesale merchant leaves distribution to his substituors, he maintains his control over the commodities flow towards consumption.

12. With regard to the above description, we can appreciate that a wholesale merchant systematizes production and distribution, in proportion to the expansion of production and consumption. As long as the fishery remains underdeveloped — scattered production, the merchant activity in order to prompt an increase in the commodity, provides fishery producers with a wide range of expanding commercial production. In addition, in the consumer area, he organizes a rationalized channel of consumption linked to the production under his control. In other words, he stands on the apex of production and distribution. (See Diagram IV-2). Through his position in the flow of commodities, he influences price formation of fishery produce in both the production and consumer areas.

13. However, this link, managed by a particular merchant, will be modestly changed. We can consider that there are two factors affecting a change in the tight market system. The first is a rapid increase in demand for fishery produce, by the consumer market. For consumers, the strictly controlled distribution is the greatest obstruction to mass consumption since the small number of merchants cannot respond sufficiently to the enlarging demand because of insufficient funds for collection and distribution. Moreover, controlled prices by wholesale merchants often damage the consumers household economy. Socially, those consuming fishery produce need a more efficient commodities flow to satisfy a rapid growth in demand. The second factor to affect the market's system is provided by the growing

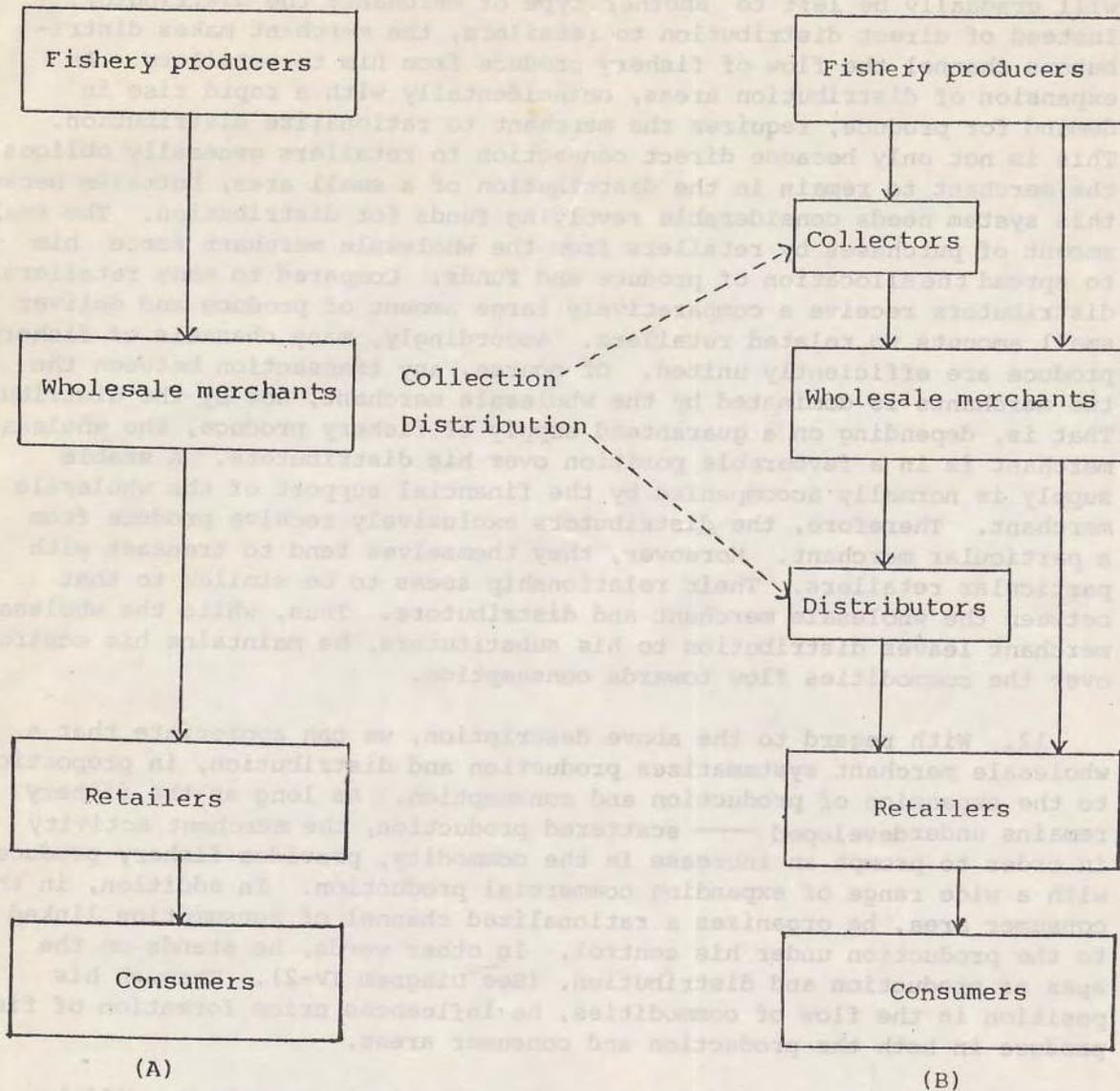


Diagram IV-2 Collection and distribution by wholesale merchants

fishery producers. In order to respond to the expanding demand, the producers must accumulate considerable surplus and direct it towards the enlargement of production. In fact, the wholesale merchant and collectors under his control often ignore the producers fundamental desire. Although any commercial producer must be conscious of the size of return on his investment, this is more likely to be affected by the will of these merchants. The exclusive collection by a wholesale merchant (or his collectors) may hinder the producers in improving production conditions, as their dependence on the merchant activity obliges them to have links with him however favourable or unfavourable. Even a small amount of surplus might disappear at the merchant's will. In particular, at the stage where an artisanal fishery moves towards commercial fishery, such a close market system may harm the smooth development of the fishery. Concretely, produce value is more likely to be decided by the wholesale merchant, and is not related to the size of return on a producer's investment needed. Therefore, the market system is the greatest obstacle to a producer's principle: a commercial producer has to cover all necessary costs and bear a surplus which can be partially directed to future investment.

14. Of great impetus to altering the tight market system is the appearance and growth of collection and distribution areas. For the purpose of convenient collection and distribution, many wholesale merchants gravitate towards this along with considerable investment in distribution facilities. This centralization of fishery produce causes competition among wholesale merchants in both collection and distribution. Because of this competition, suppliers of fishery produce may be partially released from the tight market system. Fishery producers as well as collectors have an opportunity to choose a new channel for marketing their produce. Moreover, purchasers of fishery produce — distributors and retailers — also tend to independently mediate the commodity flow. In considering the conditions that wholesale merchants offer, sellers and purchasers begin to link freely with a particular merchant. Of course, it is necessary that sellers and purchasers grow up sufficiently to adapt themselves to this flexible market system. In this movements shift towards the next market system, we can see three main directions. The first direction lies in the formation of price. In comparison to exclusive collection and distribution, the produce price will be relatively freely changed. Apparently, the competition among wholesale merchants stimulates the appearance of competitive price. Moreover, through competition, the price of produce which used to be determined mainly by the wholesale merchant will be standardized in the area. Formerly, the price level varied from merchant to merchant; however, a wide range of choice in sellers and purchasers marketing channels encouraged the establishment of standard prices. That is, the produce price tends to be influenced by the relationship between supply and demand. Thus, the formation of collection and distribution areas, accompanied by the competition among wholesale merchants, discourages exclusive price formation. The second direction towards the next market system concerns the function of the wholesale merchant. As described before, collection and distribution are increasingly done by other types of merchant: collector

and distributor. This tendency is accelerated by the expansion of transactions because mass transactions require merchants to specialize in a particular economic function. The more demand and supply a wholesale merchant faces, the more likely he is to mediate between collectors and distributors. This movement contains yet another remarkable change in the merchant's function, that is, the wholesale merchant will be a commission wholesaler. Instead of purchasing fishery produce, he will only channel the flow of fishery produce between collectors and distributors. He receives commission according to the amount handled. The immense amount of produce handled will not allow the wholesale merchant to purchase all fishery produce as before, therefore, the expansion of demand in the consumer market can be satisfied by this change, since the amount of produce on the market cannot be determined by the size of the merchant's capital. These remarkable changes urge the establishment of a new market system: wholesale market.

15. The market system under the wholesale merchant will be a smooth and reliable one to respond to the great demand and supply. Simultaneously, fishery producers who often faced disadvantageous exchange are eager to enter the market as a component. This is because: fishery producers have been left out of the price formation of fishery produce since the earliest stage where the monopolistic merchant managed the flow of produce. However, the infiltration of the monetary economy into fishery has encouraged all commercial producers to obtain as high a value as possible in the exchange. At the early stage, few producers had the ability to meet this essential demand, because of insufficient funds and methods for marketing their produce at a distant and large consumer market. Moreover, the producers hardly had any accumulated surplus with which they could enlarge fishery production. This inevitably made the producers depend too much on the merchant's activities, which resulted in an unfavourable exchange of produce. At the previous stage, the wholesale merchant determined the price level as did a monopolistic merchant. Of course, initially, a steady commodity flow created by the wholesale merchant encouraged fishery producers to enter commercial production, as previously mentioned. With the modest expansion of commercial production, some producers started to accumulate surplus. Finally, an increase of surplus enables producers to break from the control of the wholesale merchant (or his collector) and at the same time the older market system would be transformed into a wholesale market system.

16. The wholesale market system provides a place where fishery producers can exchange fairly their produce for money. That is, the price level is fundamentally determined by the relationship between supply and demand, not by the will of particular components of the market. In order to accomplish this, it is necessary that sellers and purchasers have an equal status. Unlike the former systems, both components in a market freely transact with each other. When the market consists of various sellers and purchasers, they naturally make a characteristic transaction

simultaneously satisfying the economic desires of both: auction (or bid). Of course, this movement seems to have already appeared since the last stage in the previous market system. Concretely, in areas where commercial producers affect the marketing of fishery produce, and where many sellers and purchasers gathered together, transactions between them tended to depend on their economic desires. Often, a wholesale merchant managed auction (or bid) for sellers and purchasers, and would decide on the price level based on their demand and supply. As a matter of fact, however, even at an auction managed by a wholesale merchant, the formation of price was frequently in his hands. This is mainly because those present at the auction may have been under the merchant's control. Therefore, the auction was not open to anybody, but exclusively conducted. As a result, the auction price was the one offered by the merchant; and, the price was not always fair to sellers or to purchasers either. On the contrary, an auction at the wholesale market is expected to create a fair price, since the transactions at the market are carried out in public. In other words, a wholesale market is a place where large purchasers wish to exchange money for fishery produce while large sellers want to exchange produce for money. In comparison to the previous system, the flow of fishery produce is released from its exclusiveness. To be specific, a purchaser must pay no attention as to who owns the fishery produce, but he must be conscious of what brings the most profit. In the same way as the purchaser, a seller can sell to whoever sets the highest price and most benefits him. Therefore, the criterion of the components in the market is eventually linked to the formation of a standard price.

17. For fishery producers, the formation of standard price is important in the following ways. First, the producers have the possibility of getting the maximum price for their produce without any restraints. This steadily enhances their ability to accumulate surplus which used to be controlled by wholesale merchants. In this sense, the expansion of this market's system may accelerate the growth of commercial production, since producers can receive value of produce as it is. Furthermore, a wholesale market improves the producers chances of seeking the most beneficial channels for marketing produce. This is merely because the markets contain unspecified purchasers. Through transactions with them, fishery producers will be able to concentrate on how to maximize the size of return on investment. Simultaneously, however, the entrance into the free market by producers inevitably causes a rapid stratification of producers. That is, the results of selling in a market directly affect the volume of a producers surplus. Naturally, the surplus should be flexible according to market trends. Previously, the sale of fishery produce used to be in the hands of merchants; therefore, a change of market might indirectly reflect the producers managements. However, the producers at the wholesale market must accept the direct affects of market trends. On one side, the producers can receive the real value of their produce; on the other hand, they have to accept changes in value caused by an imbalance between supply and demand. All producers cannot

avoid this phenomenon on the market. There must be some producers who reach a situation where all necessary costs cannot be covered by their link with the market. Consequently, a differential in surplus volume among fishery producers will be enlarged by the results of the producers marketing activity. Moreover, in a market, the standard price reaches sellers of fishery produce as well as purchasers, which further prompts the classification among producers. That is, some producers can adapt their production to the established standard price level, but others cannot do so. The former continuously expand commercial production, and the latter may cease fishery production or move away from it.

18. In the wholesale commerce sector, the components approach the division of labour, which is nearly achieved at the wholesale market stage. Soon, there will appear at least three types of merchant who manage several economic functions, such as collection, intermediation and distribution. Specialization in a particular function has already been perceived at the previous stage of the market system. The components in wholesale commerce have shown this tendency more clearly, since an immense volume of produce started to be for consumers. Clearly, tremendous transactions of fishery produce demand more and more revolving funds for related merchants. A merchant with multiple economic functions can scarcely respond to an ever-enlarging volume of transactions. Instead of scattering his funds, a component in wholesale commerce tends to concentrate his funds on a specific activity. Insofar as the component can produce a large amount, specialization in a particular activity will bring more benefit because of large scale handling. Moreover, this tendency, coincidentally with the enlargement of the amount handled, is of help in reducing the necessary costs. Apparently, scattered multiple activities require more ineffective funds and more necessary cost, which often diminishes the profit made by handling fishery produce. Thus, the establishment of a wholesale market, in which tremendous amounts of purchasing and selling are carried out at the same time, is the impetus to creating a division of labour among components in wholesale commerce. Finally, a wholesale merchant at this stage will be an intermediary who only mediates the commodity flow from collectors (producers) to distributors.

19. Coincidentally, the type of transaction between constituents in a market, such as between producers and collectors, and between collectors and intermediaries, appears to be distinguished from transactions in the previous market. Instead of purchasing fishery produce, collectors and intermediaries basically receive produce consigned by producers. On behalf of a fishery producer (consignor), a collector and an intermediary carry out the selling activity in a market; however, the consigned produce does not belong to the consignee, but belongs to the consignor. At the earlier stage of market development, fishery producers used to sell their produce to collectors and wholesale merchants; therefore, the producers no longer owned the produce, but the merchants did. Obviously, the difference between purchase price and sell price was the benefit the merchants received.

To maximize this the merchants consciously aimed to purchase at a low price and sell at a higher price. This was the basic principle of the merchants behavior. In contrast, nowadays the purchasing of fishery produce tends towards diminution, since the large amounts of produce handled makes collectors and intermediaries face the necessity of considerable revolving funds for purchasing. Consequently, the components of wholesale commerce aim to receive as great an amount of consigned produce as possible, which results in an alteration of their economic function. That is, their benefit is derived from commission. Of course, it is not until production and distribution are firmly systematized that consignment of fishery produce can extend to all transactions. In addition, this remarkable change in transactions is necessary to growing fishery producers. This is their economic requirement. To obtain maximum earnings from the marketing of fishery produce, the producers are reluctant to sell to collectors or others. This is because the producers would often see a large difference between the value received and the true market value. If a fishery producer is economically independent of fishery collectors, he might well consign his produce to a collector because he has an opportunity to receive the real value for his produce. In return, of course, he is charged a commission by the collector. It seems to the producers that the earnings from consignment are more beneficial than those from collectors, even though the producers occasionally encounter a fluctuation of price in the market. Normally, the more independent fishery producers are of components of wholesale commerce, the more likely they are to be eager to consign or sell by themselves. Therefore, at a stage where commercial producers are trying to approach economic maturity — on the way to enterprise fishery, consignment will predominate. This kind of transaction, in other words, is created by the advancement of producers as commercial ones.

20. Socially, the wholesale market system has a significant role in reducing necessary distribution costs which may benefit not only producers but also consumers. In comparison to the industrial sector, generally, the fishery as well as the agriculture sectors are more likely to spend considerable expense on distribution. This may be attributed to the fact that enormous fishery producers individually market a small volume of the commodity. In order to bridge the gaps between consumption and production, there should exist many mediators engaging in the collection and distribution of fishery produce. For instance, collection from a small production area for a center of distribution might be carried out by multiple collectors. Furthermore, the collected produce often had to pass many steps in its distribution to retailers. Naturally, the fee charged for every step of collection and distribution would boost the price level at the retail stage, and reduce the producers portion. Therefore, on the whole, such a complex and stratified market system obviously caused an increase in total expense relating to commodity flow, which frequently hampered the stability of production and consumption. Therefore, to simplify the stratified market system would be of social benefit in the sense of harmonizing production and consumption. We can

point to another advantage of the wholesale market system from the viewpoint of social benefit. Firstly, as already mentioned, the centralization of fishery produce makes it possible to carry out large selling and purchasing activities at the same time. This brings a highly rationalized allocation of funds. Formerly, both activities used to be separately implemented by wholesale merchants (or monopolistic merchants); in those days, even a slight time lag between selling and purchasing would mean that considerable revolving funds were tied to the flow of produce. On the contrary, the wholesale market system alleviates the allocation of revolving funds remaining at the wholesale commerce for a long time or, a quicker turnover of funds may result in more transactions. Secondly, the production sector (in fishery) improves its position against the wholesale commercial sector through re-distribution of surplus. Clearly, the commercial sector used to stand in a favourable position compared to the production sector, depending on the wide gap between consumption and production. This resulted in the stocking of excess surplus in the commercial sector. On the whole, such a distorted relationship between the two often harmed the smooth growth of fishery producers; in other words, the expected production cannot be realized because the surplus is reduced by commerce. Disadvantageous transactions will be reduced in a wholesale market since both sectors have equal status there, as a result of which the portion of the production sector increases. To enhance the ability to receive more surplus influences the total level of productivity in fishery, through investment in production means. The increased productivity eventually causes a decline in price level of fishery produce as foodstuff in the society.

21. Thirdly, the nationwide expansion of the wholesale market system will make fishery producers (collectors) transfer produce more freely. Importantly, the free transfer, based on price level, adjusts supply and demand on a nationwide scale; and, a standard price will be formed and spread all over the country. This effectively enlarges consumption capacity. This is because the spread of a standard price disturbs the older type of merchant's expectation of excess surplus in the distribution and retail process. Under the previous market system, produce tended to be thrust into a narrow area controlled by particular merchants, therefore, the produce price level was likely to be determined by them, without considering the consumer. This was often an obstacle to the consumer purchasing fishery produce. Accordingly, the expansion of the wholesale market system will reduce part of the distribution cost which used to boost the consumer price. This encourages the consumption of fishery produce. The development of a market in a consumer area clearly provides fishery producers with more opportunities to transfer their produce, through which consumption will be further exploited. Fourthly, with the advancement of the wholesale market system, commercial fishery producers tend to organize a producers economic organization, such as a fishery cooperative. To ensure the development of the commercial fishery, and to adapt to the establishing market system, producers may wish to form a marketing organization which takes the place of the

components of wholesale commerce. Such an organization will function mainly as a collector and an intermediary. Of course, it is not until the appearance of a highly systematized flow of fishery produce that this kind of organization rapidly develops. This is because: the movement towards entering the wholesale commerce strongly requires the producers recognition that all commercial producers rationally market their produce by themselves. This awareness would basically be generated by conditions: the producers keep in touch with the fishery produce market themselves, and start their advancement to commercial fishery and obtaining a steady surplus from the marketing of produce. In another way, under the circumstances where producers are comparatively free to market their produce, they are willing to establish a marketing organization. Clearly, the expansion of the wholesale market system urges commercial producers to improve their marketing conditions in order to increase their own portion. Therefore, the marketing organization is expected to function by reducing the distribution costs charged by mediators in wholesale commerce. Furthermore, the organization may obtain a profit which used to be made by these mediators, which finally increases the surplus of the organization's members. Basically, this kind of organization has the social role of diminishing distribution costs and completely severing the connection with components of the wholesale commerce. This economic behaviour of commercial producers is widely accepted by consumers, since a reduction in distribution costs is likely to lower the price level of produce at the consumer level. Thus, under the market system, producers are gradually drawn nearer to consumers by the marketing organization.

22. In the meantime, the wholesale market systematizes the commodities flow on a nationwide scale not only for production but also for consumption. Along with this nationwide advancement, the previously scattered retail will be unified, which soon prompts the appearances of retailer and consumer organizations. Naturally, these movements strongly affect the existing market system. This is because: the organization (or enterprises) established by retail commerce and consumers will sever part of the links with wholesale commerce. For the purpose of reducing the wholesale distribution cost, the organizations aim to have direct links with commercial fishery producers, typically to producers marketing organizations or fishery enterprises. Such direct links benefit retail commerce and the consumer organization, since they can receive fishery produce at a lower price without any charges from wholesale commerce. These links are highly beneficial to commercial producers too. Insofar as consumption is unified by these organizations, the fishery producers linked to them can continue steadily marketing their produce without any constraints from wholesale commerce. Moreover, the producers may be able to receive more earnings from direct distribution. Supposing that the producers send their produce to collectors, they will reduce the charge by the collectors and intermediaries. Of course, such a direct link between producers, retail commerce and consumers will come into being after the appearance of a well-established market system, since the awareness and economic independence of those engaging in production and consumption encourages a reciprocal approach from both sides. In particular, in the production sector, economic independence from wholesale commerce is necessary to respond to this kind of demand by retail commerce and consumers. Thus, the wholesale market system is also destined to be altered by the unification of scattered retail and the further growth of fishery producers. (See Diagram IV-3).

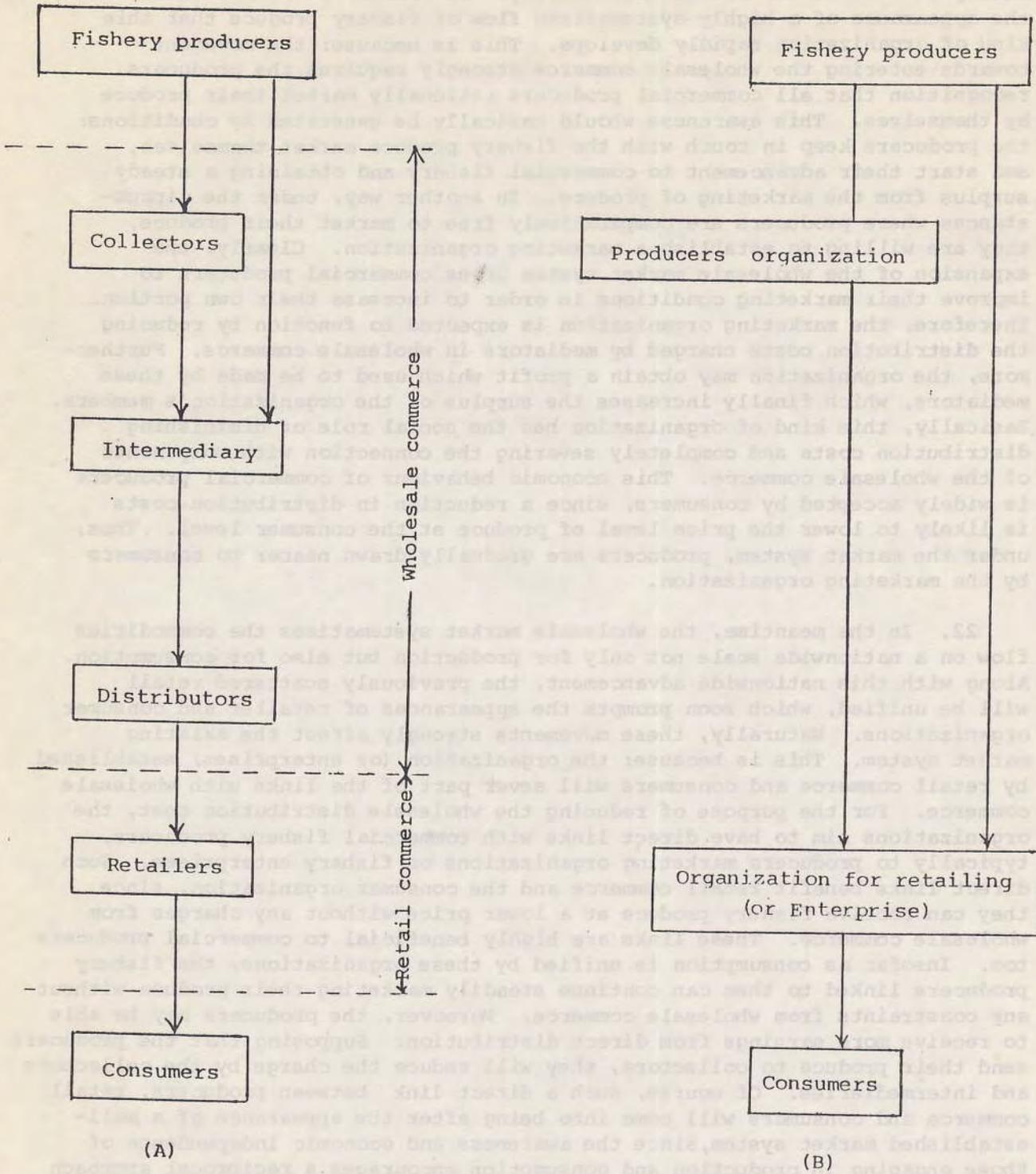


Diagram IV-3 Wholesale Market system and changes

23. Referring to the discussion so far, we can conclude, that from a historical viewpoint, the market system have always influenced the form of fishery producers. Conversely, we can also point out that the fishery producers have had an impact on the alteration of the existing market system. Although the producers initially accepted the appearance of a commodities flow managed by merchants, the producers would, sooner or later, encourage a change in the systematized market when it prevented their growth. In addition, the components of the commercial sector tended towards creating a more and more effective market system, based on their specialization in a particular economic function. This movement encouraged or forced fishery producers to adapt to an establishing market system. Such reciprocal influence between the production and the commercial sectors determined the form of the fishery produce market and its future direction. More precisely, the change process of the fishery produce market can be regarded as a process by which fishery producers, who had stood at a disadvantage compared to the mediators of their produce, gradually improved their position in the market. No doubt, the link with mediators (such as collectors and wholesale merchants) encouraged fishery producers to enter the commercial fishery. However, the mediators sometimes hampered the producers smooth development and proper accumulation of surplus which was supposed to go towards an enlargement of commercial production; on the other hand, the fishery producers were sometimes provided with a wide scope for enlarging their production by these counterparts. At the wholesale market stage, fishery producers, in theory, realized the fundamental economic desire to achieve an equal status with their counterparts in the market. Thus, the development of the fishery produce market coincided with an economic independence of fishery producers from the commercial sector.

V. Characteristics of household managements in the artisanal fishery

1. In the light of the two previous chapters, we can conclude that the real fishery development process seems to indicate a contradictory tendency to our rough description thus far because of the existence of immense artisanal fishery households. At the stage where the nationwide market was firmly established along with industrialization, the commercial and capitalist fishery may be predominant; on the other hand, the so-called "household fishery" was supposed to be either a highly capitalized one, or in the minority. However, the household fishery has often continued to affect fishery production even in countries where fishery has developed and become capitalized. On the whole, of course, the tendency towards commercial and capitalist fishery, which we noted before, can be perceived. More precisely, therefore, such a tendency has steadily continued and often resulted in sustaining the household fishery. Hereafter, we will refer to the characteristics of household fishery which have remained underdeveloped. This is because proper fishery development is occasionally obstructed by the fishery household. For instance, even if the fishery produce market is externally systematized, the functions of the market may not work efficiently because of scattered fishery production. Moreover, the existence of the household fishery may create a severe conflict with the growing commercial fishery, for instance, as regards the distribution of marine resources. Yet a small volume of production in household fishery perhaps causes an unfavourable social status for fishery producers and family members. Accordingly, we cannot avoid considering the future direction of household fishery whenever a fishery is to be developed. Above all, therefore, we will take into account the reasons why the deep-rooted household fishery has been sustained and has tended to be left behind by fishery development. We will approach this subject matter by looking at the managerial characteristics.

2. Although, a household fishery generally includes subsistence, artisanal and partially commercial fishery, referring to the definition of fisheries in Chapter III, here we will exclude subsistence fishery from our considerations, since this fishery's produce is not for sale, but mainly for domestic consumption. Even though what is leftover from domestic consumption occasionally ends up at a fishery produce market, the economic characteristics of this fishery are not in common with those of the commercial fishery. The basic principle regulating this fishery is to obtain produce as foodstuff for the family members, but not as a commodity. On the other hand, the artisanal fishery produces a commodity which is mainly for sale and not for the family's consumption, similarly to the commercial and capitalist fishery. Therefore, our consideration of the household fishery focuses mainly on fishery households engaging in commercial production. On the contrary, in another respect, part of the commercial fishery will be included in the following description whenever necessary. Often, the lower level of this fishery depends on family labour while employing a small number of labourers. In addition, artisanal

fishery households may often demand additional labourers when they face a lack of family labour. Of course generally, this kind of household is less likely to depend on employees. Thus, the description is a fishery household involved in commercial production, which is mostly undertaken by the family's members — mainly artisanal fishery household.

3. Broadly, among managements which carry out commercial production, we can perceive that there are at least two types of management. The first type is, of course, artisanal fishery management which is undertaken by the members of a household to secure their livelihood. The other type is the fishery enterprise, which has a large means of production for the purpose of earning a profit for capital investors. Besides these two types of fishery, there are others which can be linked to either of the above. Accordingly, a comparison of the two types will clarify the characteristics of the artisanal fishery management (household). The greatest distinction between the two lies in the managerial structure. Concretely, an artisanal fishery management includes not only the labour force but also the means of production. That is, the provider of the means of production uses his own and his family labour, in his production process. In contrast, in a capitalist fishery, the means of production are owned by an entrepreneur while labour is supplied by wage workers. Unlike the artisanal fishery, a capitalist enterprise consists of the means of production and the labour force separately. Although the means of production belong to a particular enterprise, wage workers are supplied from the labour market. Moreover, capital for the enterprise can be supplied by unspecified investors. In comparison to such an enterprise, we can note that the artisanal fishery management has a double profile; the investor is also a worker at the same time. That is, the management never extends outside the household, but depends on the household itself, in respect of both capital and labour. Therefore, the scale of production is going to be small, because the labour input in the production process is derived mainly from the family's labour, and because the invested capital originates from the household economy. Thus, the artisanal fishery is more likely to be linked closely to the household and its economy, unlike the capitalist enterprise.

4. Insofar as an artisanal management is inseparable from its household economy, part of the fishery produce may be for household consumption. In an enterprise, all produce will be sold as a commodity since its management is completely separate from the entrepreneur's and workers household economies. Therefore, this factor shows another tendency in the artisanal fishery. That is, the artisanal fishery still includes the subsistence economy of the past in its productive activity. To some extent, the artisanal management wishes to satisfy the subsistence needs of the household members by fishery production. Therefore, the economic principle regulating its productive activity may not always pursue the principle of pure commercial production. To be specific, the produce consumed by the household will not result in the accumulation of

surplus by the management, although it may bring some surplus from exchange at a market. Apparently, the tie to the household of an artisanal management is the main distinction in productive activity from that of a capitalist enterprise.

5. More precisely, as regards the basic economic activity, there is a distinct difference between an artisanal fishery and a capitalist fishery. The guiding principle of an enterprise is to obtain as much profit as possible, while an artisanal management does not always pursue this objective. This difference will be highlighted by Diagram V-1 which shows the components of fishery output. Normally, the fishery output component in an enterprise should be divided into three parts. The first component is fixed cost which includes direct cost and depreciation: this cost does not vary with output in the short term. The second component is variable cost, mainly employees wages, which vary with the rate of output. The last is profit which is the residual part after deducting all costs. So far as commercial production is concerned, the earnings from exchange in a fishery produce market will be required to cover these components. The enterpreneur must definitely maximize the amount of profit in order to meet the planned dividend to capital investors, also some of the profit is intended as a reserve and fund for new investment. Therefore, the objective of obtaining maximum profit also provides the potential to enlarge future production. Even the artisanal fishery management, consciously or unconsciously, must accept this principle which is regarded as important by the enterpreneur; if not, the management will fall behind in fisheries development. However, the actual method of operation and aims of the household management are considerably different from those of an enterprise.

6. Whereas an enterprise divides the income component into three parts, the management of an artisanal fishery does not do so, as the management economy is inseparable from the household economy. In theory, as indicated in Diagram V-1, the gross income of the artisanal management must include fixed cost, variable cost and profit, in the same way as that of the enterprise. If the management employs wage workers besides the family members, the cost for labour includes not only the cost of the wage workers but also for the family workers. Finally, the management receives the aggregated amount of cost for the family's workers and profit. This is fishery income. When considering fishery income, it will inevitably have two destinations. The first is to the living expenses of the family members, which come from the cost of the family workers. The second is towards the accumulation of a surplus for the growth of fishery production, which is derived from profit. However, an artisanal fishery has little recognition that the fishery income contains two distinctive categories. Moreover, the management hardly has any conception of the cost of the family's labour. For the management, therefore, the most important aim is obviously to maximize the volume of fishery income which does not always result in maximum profit. To increase fishery income, the management

Direct cost	Indirect cost	Depreciation	Wages	Profit
← Fixed cost →			← Variable cost →	
← Total cost →				Profit

A. Fishery enterprise

Direct cost	Indirect cost	Depreciation	Employee wages	Wages of family labour	Profit
← Total cost →			← Variable cost →		← Fishery income →

B. Artisanal fishery management

Diagram V-1 Income components

will input more and more work effort by the family which is regarded as free of charge. Indeed, this method often raises a real labour cost; consequently, the total cost estimated cannot be covered by all output. Whereas the management faces the ineffectiveness of the labour input, the artisanal fishery may be satisfied by an increase in fishery income, being equivalent to the residual after deducting all costs, except those for the family labour, from all output. As long as the artisanal fishery management can obtain more fishery income through intensifying the work effort, it will continue to increase input much more than before.

7. Apart from conceptional fishery income, we will refer in detail to the link in artisanal fishery between fishery production and the household economy from the aspect of the monetary flow in a household. As can be seen in Diagram V-2, the process of receiving a turnover of fishery commodity to the formation of surplus has several stages. Suppose a management consigns (or sells) its produce to a merchant. After the merchant deducts a sales commission charge, distribution cost, etc., the management will receive a turnover of commodities. Moreover, if the household has a loan and production materials have been advanced by the merchant, repayment should be done at this stage. The remainder of the turnover will be "Fishery income (A)". If the management employs workers, the wages set according to its own wage system should be paid to the workers from the Fishery income (A). The remainder, after deducting wages, will be "Fishery income (B)". The next stage is remarkable when compared to a capitalist enterprise. Without accounting for expenditure on fishery, Fishery income (B) tends to be combined with income from secondary occupations such as processing, agriculture, wage labour, etc.. Hence the household income usually consists of several different components. Once the income from the fishery is mixed up with the others, it is impossible to distinguish it from them. Normally, the household expenditures consist of those for the fishery operation, other occupations and household expenses, as indicated in the Diagram. Instead of Fishery income (B), the combined income will be a source for paying variable fishery expenses (such as fuel oil, ice and equipment), or for repaying fishery loans. Accordingly, the cost of the fishery operation will be covered by whatever source. In the same way, the expenditure on other occupations will come from the same source. However, the household expense depends on the combined income. After the various expenditures, a household may be able to keep the surplus. But, its original source cannot be distinguished. Furthermore, the surplus is not always directed to investment in fishery, although it is partially put towards the purchase of fishing vessels and other fixed assets for the fishery operation. At the same time, part of the surplus may satisfy the family needs through the purchase of durable consumer goods. Thus, unlike a capitalist enterprise, the monetary flow in an artisanal management is not effectively systematized.

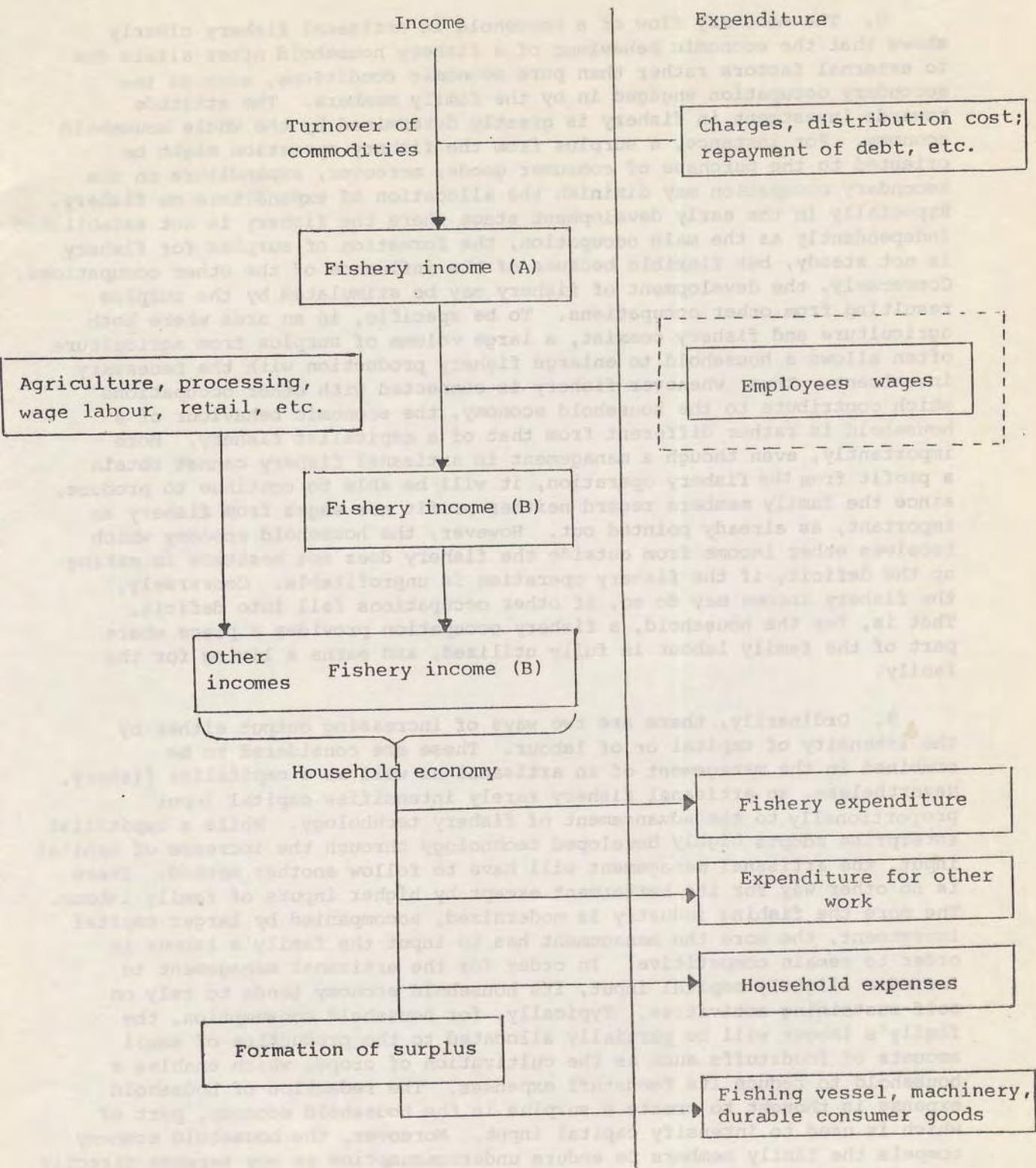


Diagram V-2 Monetary flow in a fishery household/management

8. The monetary flow of a household in artisanal fishery clearly shows that the economic behaviour of a fishery household often alters due to external factors rather than pure economic conditions, such as the secondary occupation engaged in by the family members. The attitude towards investment in fishery is greatly determined by the whole household economy. For instance, a surplus from the fishery operation might be oriented to the purchase of consumer goods; moreover, expenditure on the secondary occupation may diminish the allocation of expenditure on fishery. Especially in the early development stage where the fishery is not established independently as the main occupation, the formation of surplus for fishery is not steady, but flexible because of the influence of the other occupations. Conversely, the development of fishery may be stimulated by the surplus resulting from other occupations. To be specific, in an area where both agriculture and fishery coexist, a large volume of surplus from agriculture often allows a household to enlarge fishery production with the necessary investment. Thus, whenever fishery is connected with other occupations which contribute to the household economy, the economic behaviour of a household is rather different from that of a capitalist fishery. More importantly, even though a management in artisanal fishery cannot obtain a profit from the fishery operation, it will be able to continue to produce, since the family members regard neither profit nor wages from fishery as important, as already pointed out. However, the household economy which receives other income from outside the fishery does not hesitate in making up the deficit, if the fishery operation is unprofitable. Conversely, the fishery income may do so, if other occupations fall into deficit. That is, for the household, a fishery occupation provides a place where part of the family labour is fully utilized, and earns a living for the family.

9. Ordinarily, there are two ways of increasing output either by the intensity of capital or of labour. These are considered to be combined in the management of an artisanal as well as a capitalist fishery. Nevertheless, an artisanal fishery rarely intensifies capital input proportionally to the advancement of fishery technology. While a capitalist enterprise adopts highly developed technology through the increase of capital input, the artisanal management will have to follow another method. There is no other way for its betterment except by higher inputs of family labour. The more the fishing industry is modernized, accompanied by larger capital investment, the more the management has to input the family's labour in order to remain competitive. In order for the artisanal management to increase slightly capital input, its household economy tends to rely on self-sustaining activities. Typically, for household consumption, the family's labour will be partially allocated to the production of small amounts of foodstuffs such as the cultivation of crops, which enables a household to reduce its foodstuff expenses. The reduction of household expense is thought to create a surplus in the household economy, part of which is used to intensify capital input. Moreover, the household economy compels the family members to endure underconsumption as any expense directly

affects its management in the artisanal fishery. Consequently, underconsumption makes it possible to form a slight surplus in the household economy. Through self-sustaining activities and underconsumption, the artisanal management may be able to stimulate an enlargement of fishery production by investing the increased surplus.

10. The regulating principle in the management of an artisanal fishery, as discussed above, provides an insight into the relationship between the management and the merchant. In Chapter IV, we looked at the historical changes in merchant activities in fishery. Normally, at the early stage, the merchant tended to have multiple economic functions in order to cover fully the producers production process. We could say that the multiple functions of the merchant stimulated him to exclusively collect fishery produce from producers. This tendency was soon altered by the growth of fishery producers who could keep the surplus in their management. However, in the artisanal fishery, the exclusive link between the merchant and the producers has been sustained even after capitalist enterprises and some commercial fishery managements reached an equal status with wholesale commerce. In other words, the artisanal fishery is more likely to be left behind in the development of the fishery produce market. Generally, the management of an artisanal fishery will accept an exclusive link with a merchant, since there is scarcely any surplus in the management. The management will depend on advance payment which seems to be the most reliable method to secure the family livelihood. Simultaneously, the penetration of the monetary economy into the household economy obliges the management to form a relationship with the merchant for the purpose of obtaining a cash income. In general, there are three major patterns in the link with a merchant, as illustrated in Diagram V-3. The first, is that the merchant receives fishery produce and pays for commodities: this pattern is found at the less developed stage. The second is based on the loan activity of the merchant. A management's fishery investment often relies on a loan from the merchant collecting fishery produce. In return, the management must sell its produce exclusively to the merchant. The third pattern is where necessary production materials are provided by the merchant on credit (or loan), and the merchant will receive fishery produce from the management. The last two patterns are usually accompanied by cash payment by the merchant for fishery produce. Assumably, an artisanal fishery management frequently links with the merchant based on the last two patterns together.

11. The artisanal management, may often have disadvantageous transactions with the merchant, as mentioned before. In the artisanal fishery, the multiple economic functions of the merchant often cause an irrational link to the management, since the artisanal management cannot enter particular markets independently, namely the production material and financial markets, this is because of the lack of capital due to scattered production. The unreliable formation of surplus in the management hampers a direct link with the markets. Through the medium of a merchant, the

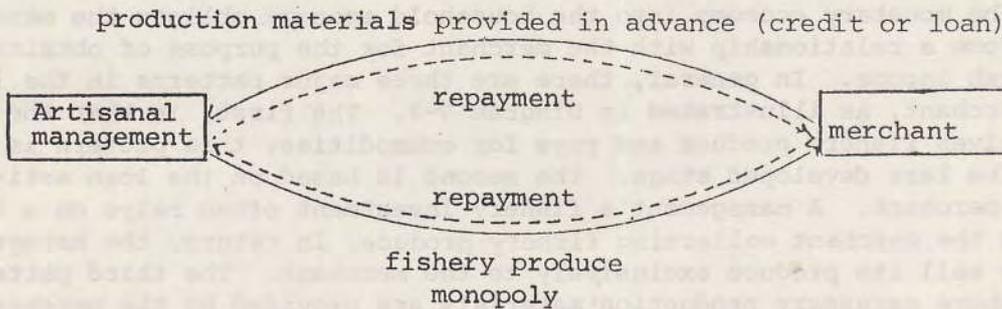
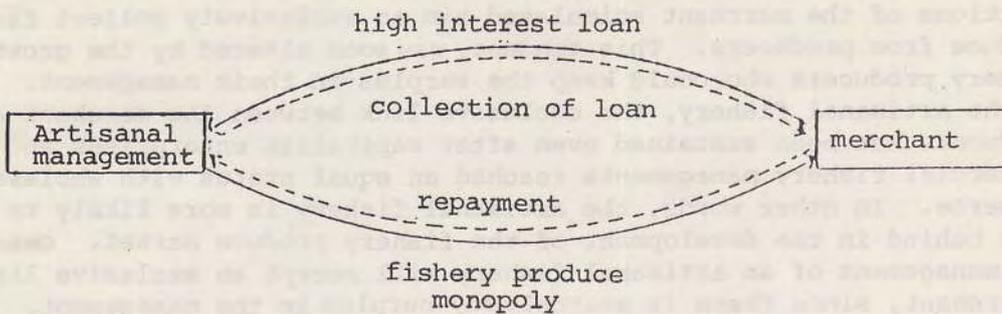
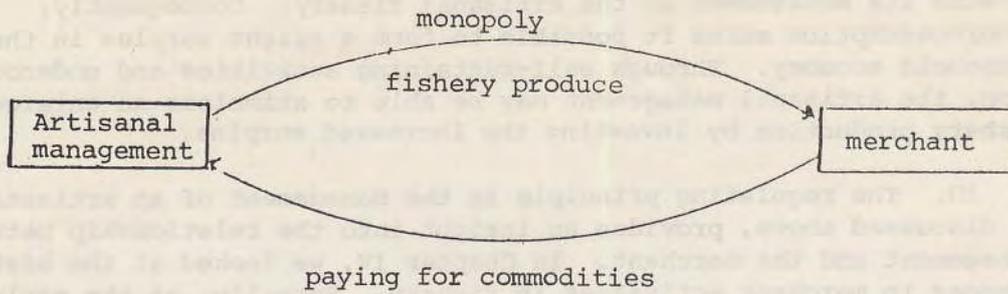


Diagram V-3 Relationships between artisanal managements and merchant activity.

management can connect indirectly with them. However, the approach to the management of an artisanal fishery may be of considerable risk to the merchant; therefore, he prefers to form multiple channels to generate benefit. In other words, he tends to carry out some economic activities related to the fishery production of an artisanal fishery. There is no other way, because such a close connection permits him to transact with unreliable managements. The merchant's prominent position leads to the diminution of surplus which is supposed to be accumulated by the management. The management might be supplied production materials at an unreasonable price, or the price level of produce is far below the real production cost. Moreover, the interest rate on a loan might be beyond the repayment ability of the management. However, the artisanal management — precisely, its household economy, will accept the above unfavourable links to the merchant. Insofar as the management intends to continue commercial production, it must be connected to markets through the merchant. More crucially, it is because of the regulating principle in the management which is tightly linked to the household economy. The whole household economy will make up the excess expense with other income. Underconsumption may help the repayment of a loan at high interest and make the family accept the low level of produce price. Yet the self-sustaining activities of the family members also lighten the economic damage to the management caused by unfavourable agreements with the merchant. Such a self-regulating household economy provides a wide scope for the predominant mercantile activities over artisanal fishery. This structural link between the management and the merchant often delays the progress of the artisanal fishery.

12. This kind of management would survive even at the stage where the capitalist enterprise predominates fishery production. This is because the inferiority of the artisanal fishery compared to the capitalist enterprise may be overcome by a considerable work effort from the family and also a controlled household economy. Although there can be immense managements in the artisanal fishery at the same time as the growth of capitalist enterprises, the managements are destined to progress modestly behind the capitalized fisheries. This is because the modernization of fishing technology by the capitalist enterprises will lead to a differentiation between the capitalist and the artisanal fishery. The new technology introduced ordinarily requires not only capital but also a certain scale of administration for its operational efficiency. However, the modernization of technology cannot always rapidly raise productivity. In particular because, any management must introduce an efficient division of labour through the disposition of skilled workers. With the development of the means of production, an enterprise can provide specialized work for each worker according to his ability. The artisanal fishery, with a limited number of family members, cannot satisfy the rearrangement of the division of labour in the management. The lack of an efficient division of labour as well as capital causes the differentiation in production power between the artisanal and capitalist fishery. Moreover, the distinctive ability of

marketing fishery produce enlarges the gap between the two fisheries. The results of commercial production are, of course, determined by the marketing of fishery produce in the market. Obviously, the management of the artisanal fishery is inferior to that of a capitalist enterprise. This is because the marketing activity of the management tends to be in the hands of a particular merchant who gives an advance payment and provides a loan. A monopolistic commodity flow dominates the marketing of the management, coincidentally with a considerably lower price than expected. On the contrary, a capitalist fishery reaches an equal status with wholesale commerce, or often integrates it, because of its economic independence from wholesale commerce. Moreover, if the enterprise markets its produce through wholesale commerce, the form of transaction may be based on consignment, not on sale. Therefore, the capitalist enterprise can obtain a higher price level than the artisanal fishery. Yet a large volume of produce influences the price formation of produce in a market, in contrast to the scattered volume of produce by an artisanal fishery. The superiority of an enterprise also lies in its marketing skill. The enlargement of the marketing area requires the gathering of information concerning market trends. Lack of knowledge may lead to missing opportunities to sell at a high price, or leave a management unprotected from unfavourable market trends. Even if an artisanal fishery markets its produce itself, it is impossible for the family members to anticipate future market trends very often. The artisanal fishery frequently faces the disruptive effects caused by the fluctuations in market price.

13. In contrast to a capitalist fishery, the artisanal fishery faces numerous obstructions to efficient administration because of the inseparable combination of management and household economy. The more the management concentrates on commercial production accompanied by capital investment, the more likely an improvement in administration is going to be necessary. Besides taking into account wages for family labour, any management continuously investing in fixed assets needs to consider depreciation costs. To estimate the rough cost, this concept is basically one which indicates an expenditure, every year during the life of a fixed asset, such as a fishing vessel or heavy equipment. Normally, a capitalist enterprise prepares for the next investment by stocking funds while making the decrease or increase in value of fixed assets clear. However, an artisanal fishery tends to be dependent on the uncertain surplus formed in the household economy for the next purchase. Accordingly, the investment in fixed assets is greatly affected by the trend of the household economy. This obviously results in the delayed introduction of modernized fishing technology. Thus, unsystematized accounting of production costs prevents an artisanal fishery from enlarging commercial production. Yet another factor influencing the inferiority of the artisanal fishery compared to an enterprise: financial trust. Generally, banks apply the finance mortgage system to any commercial producer, which is manifestly a great obstacle to encouraging the artisanal fishery to obtain loans from banks, since there is scarcely anything mortgageable in the management. Therefore, the

artisanal fishery will have difficulty in raising funds from a modern financial institution when it needs to invest, particularly in fixed assets. Unlike banks, a money-lender and a merchant give financial trust regardless of the repayment ability of the artisanal fishery. However, the interest rate these persons offer tends to be more than that which the management can afford and is proportional to the increased risk of the lenders. After all, the repayment of interest encroaches not only on profit but also on wages for family labour, which hampers the accumulation of surplus by the management.

14. Along with the discussion above, we can note: an artisanal fishery has no other method of competing with capitalized fisheries, except by imputting considerable effort by the family and enduring the unfavourable conditions of a controlled household economy. According to the above, we can also point to a basic characteristic in artisanal fishery; that is, the fishery stands at a transitional stage between the subsistence and the capitalist fishery. From a historical viewpoint, we consider that this transitional fishery would transform into capitalist fishery. In fact, both the commercial and the capitalist fishery have generally passed through this stage. However, once the capitalist fishery is established, the differentials between the capitalist and the artisanal fishery tend to enlarge rapidly. This is because: the fishery industry supports the principle that all producers can obtain aquatic organisms which are not the property of anyone. Accordingly, superior means of production as well as administration are needed to compete with others in fishery production. Through such an unavoidable tendency, immense managements have to still remain less-developed because of ineffective production means and irrational administration, while some rapidly increase their commercial production. The more the capitalist fishery has developed, the more likely artisanal managements which have not yet equalled the capitalist fishery are to be left behind by the development of the capitalist fishery. Often, such a dual structure is firmly rooted in fishery production.

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