

THE INSTITUTIONAL TRANSITION OF OPERATIONAL SYSTEMS OF FISHING VESSELS IN THE EAST SEA REGION OF CHINA: ANALYSIS OF PATHS, SITUATION AND PERFORMANCE

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ABSTRACT

On the basis of literatures and the data from stratified sampling of 160 fishing vessels in the East Sea Region of China, the process of institutional transition of operational systems of fishing vessels in the region, which started from 1979, their present situation and performance were analysed in this paper. The results showed: (1)The operational systems of fishing vessels have undergone many transitions from planned economy system, through dual operational system dominated by centralized operation and supplemented by decentralized operation, proportional sharing system, all-round responsibility system, to shareholding cooperative system et al. (2) The survey shows the present operational systems of fishing vessels are: 58% of them belong to shareholding cooperative system, 23% belong to individual ownership system, the rest 9%,8%,1%,1% belong to fishermen's cooperative system, leasehold systems, company system and partnership system respectively. (3)This gradual market-oriented transition process is a process of privatization of property rights of fishing vessels. Each step resulted in improvements of micro-efficiency to some extent. Specifically, the shareholding cooperative system, which was piloted in the middle eighties of the 20th century and promoted in the large-scale in the middle nineties, well suited the economic development level of the fishing villages of that period, contributed to the breakthrough of financial limits of fishermen within relatively short period of time, made relatively clear the property rights of the fishing vessels, and promoted the rapid development of the fishery economy in this region. (4)The process also resulted in some problems that needed to be solved.

Keywords: offshore fishing industry, operational system, institutional transition, performance.

INTRODUCTION

From 1979 to 2005, the fishing vessels in the East Sea Region of China have increased more than 4 times. GAO Jian(2006), YAO Zhen and LUO Le (2001), SU Xin(2006), and HU Jia-han and PENG Tao-ying,(1998) argued that the increase of fishing vessels, the decline of fishing resources, as well as the slowdown of the growth of the economic income of fishermen are all influenced by the transition of operational system of agriculture and fishing industry which launched since 1979.

However, there have been very few researches on the transition of operational system of fishing vessels and its impact on the trend of the long-term variation of the number of these vessels. On the basis of the data from questionnaires by stratified sampling of 160 fishing vessels in the East Sea Region of China, combined with analysis of literatures, this paper explored these issues. It offers the preliminary answers to the questions of how the operational system of fishing vessels in East Sea Region of China took place in this period, why it took place, how their present situation are, what the performance of the institutional transition is. The investigation was conducted by the method of stratified sampling in which the number of questionnaires was decided according the condition of the offshore fishing industry in East Sea Region of China, with 50 questionnaires each in Jian Su ,Zhe Jian and Fu Jian province, and 10 questionnaires in Shanghai.

The rest part of the paper is organized as follows: Part II explains the path of the institutional transition of operational system of fishing vessels in East Sea Region of China, part III describes the present situation

of operational system of fishing vessels. Part IV analyzes the performance of institutional transition. Part V is the conclusion.

THE PATH OF THE INSTITUTIONAL TRANSITION

Before 1979, like the other villages in China, fishing villages also adopted planned economy systems. Since 1979, with the implementation of contract system in rural area through out the country, fishing villages also began to adopt the operational system of fishing vessels of “domination of centralized operation with supplementation of decentralized operation”.

This system varies in different places contingent on actual conditions. For example, in Zhe Jian province, the basic accounting unit is the collective in village, which includes several fishing teams. It carried out the “four unified” system, that is unified management, unified process of the catch, unified distribution, unified accounting (YU Yan, 1994). Fishing teams might get prize if their production surpassed the given quota set by the collective. In Fujian province, the system of “ownership of three levels with the basis of the production team” was adopted . In this system, the quota for production, value of production, number of labor force, work-points(as a measure of work done), costs were stipulated, and the prize for surpassing the production quota as well as financial penalty for not being able to finish the quota were set by the village for each team (LIN Wan Zhen, LIN Fa Ling.1997).

In general, the operational system of fishing vessels underwent the forms of proportional sharing, all-round responsibility, accounting based on fishing vessels consequently after the first step of reform.

Proportional sharing system means the distribution of profit between the collective and the production units of fishing vessels according to the value of production and net profit. It can be further divided into 2 types: distribution according to net profit and that according to production value. In the former, the collective provided the production equipments and assume production cost, the production unit organizes the production, and the net profit should be distributed between the collective and the production units proportionately. In the latter, the collective provided the equipments for production such as trawls for fishing vessels but did not cover other production costs, the value of production should be directly distributed between the collective and the production units proportionately(LU Chang-cai,2006, HUANG,2006) Such practices mainly existed in early 1980s.

All-round responsibility system means that the common reserve fund, public welfare fund, depreciation fund, management cost and some other fees which should be submitted by the production units to collective were wrapped into a package as the quota. With no regard to the harvest of the year, the production units should submit the contracted quota to collective. This system existed mainly during the early and middle 1980s. The adoption of this system marked the reformation and opening-up process arrived at an important point, since then, “centralization” weakened, while “decentralization” strengthened gradually.

Accounting based on fishing vessels means the collective estimated the value of the fishing equipments and delivered them to production units, the production units draw common reserve fund and depreciation fund by themselves, and should only hand in public welfare fund and management cost to collectives. The production units assumed responsibility for the profits and losses and accounted independently.

In the late 1980s, among all the fishermen’s offshore fishing vessels, the system of accounting based on fishing vessels took up 62%, all-round responsibility system and proportional sharing system took up 14% in total, and individual fishing vessels took up 24%(Yu Yan,1994).

When the transition of operational system of fishing vessels moved to the stage of accounting based on fishing vessels, as one form of this system, shareholding cooperative system appeared. The rules of this system are voluntary combination of fishermen, joint operation, accounting based on fishing vessels and profit sharing according to the shares.

Shareholding cooperative system developed gradually. As early as in the year 1983, an pilot project was carried out in Nin Bo to explore the performance of the fishing vessel shareholding cooperative system. On the basis of the pilot, three large-scale comprehensive experiments were done by the Ministry of Agriculture of China in Han Chuan county of Hubei, Shanwei county of Guandong, and Huanhua county of Hebei in 1989. The results of these pilots proved the good performance of this system.. From March.15th to 17th of 1993, the Aquatic Bureau of the Ministry of Agriculture held the fourth conference concentrating on estimating the performance of the comprehensive experiments, and proposed that this system should be further developed, bettered off and regulated. On 14th of November of 1993, “Decisions on some issues about the establishment of socialist market economy system made by the central committee of the Communist Party of China” was made at the 3rd session of all the representatives of the 14th conference of the Central Committee of the Communist Party of China. It proposed that shareholding cooperative system should be developed. As the important part of shareholding cooperative system, shareholding cooperative system of fishing vessels was approved and definitely supported by the authority. As a result, shareholding cooperative system began to booming in marine fishing villages of China, including those in East Sea regions(GAO Jian, 2006).

After many years of practice, shareholding cooperative system developed further because of its advantages. Meanwhile, some problems also appeared. In the places like some fishing village of Nantong, Shanghai, Zhoushan, and Taizhou, the capital shares of fishing vessels are gradually gathered by few people with capability(they invest and also work on the vessels), individual boss (they only invest on the vessels). So a change from the whole crew shareholding cooperative system to partial crew shareholding cooperative system, cooperative system and individual ownership system happened in recent ten years.

THE PRESENT SITUATION OF INSTITUTIONAL COMPOSITION

After a series of the compulsory transition of fishing vessel operational system, many forms of fishing vessel operational system existent in East Sea Region of China at present, which include shareholding cooperative system, individual ownership system, company system, cooperative system, leasehold system, etc . Our survey demonstrated that, 58% of the offshore fishing vessels belong to shareholding cooperative system, 23% of the fishing vessels belong to individual ownership system, 9% of the fishing vessels belong to cooperative system, and 8 % of the fishing vessels belong to leasehold system. Also there is 1% each belonging to the company system and joint partnership system.

Shareholding Cooperative System

The present shareholding cooperative system can roughly be classified as several types according to the forms of ownership(CHEN Bi-Xing, PAN Zhi Min 1995;CHENG Zhong Yao, Wu xiang Ming,2006; LU Chang-cai,2006).

The first type is all crew shareholding cooperative system. Under this operational system, all crew join together voluntarily, all crew have shares with their labor, each being the shareholder. Fishing equipments such as trawls belong to and invested by all crew, and risks are undertaken and profits are shared by them together. The profits are distributed according to the capital shares, and the crews of special post get some subsidiary because of their special contribution (such as contribution of technique). Sometimes the crew of special posts gets 1.5 or 2 shares.

The second type is partial crew shareholding cooperative system. Under this system, main crews such as those with special technique invest with their labour on the vessels, purchasing production materials such as trawls. They employ other crews to fill in the gap. Employees are paid monthly in the form of wage, and they can get some prize if the year's harvest is good. The profit distribution form of this kind of system among the shareholders is basically the same with the former. The difference lies in the divergence between the crew, some being the shareholders with the complete property right of the production materials, while others are employees, they get the wages and prize according to their acknowledged labor contribution.

The third type is shareholding cooperative system with the combination of the labor and the capital shares. Under this system, shareholders are divided into capital shareholders and labour shareholders. The main crews of special posts of 3 to 5 purchase the fishing vessels, becoming the capital shareholders. All the other crews are labor shareholders. They get the profits according to the shares of capital and labor proportionately. In this cooperative system, the direct cost should be set aside before the distribution of the profits, then the capital shares and labor shares get their profits in a proportionate way. In the places such as Taizhou in Zhejiang and Fujian, generally the capital share will get 60% of the profits while the labor share will get another 40%.

Since 1993, shareholding cooperative system has gradually become the chief form of fishing vessel operational system. By the end of 1993, there had been 210 fishing villages in Zhou Shan with the shareholding cooperative operational system, taking up 71% of the total fishing villages in this area. By the end of 1995, 95% of marine fishing village and 97.5% of fishing vessels with power over 146 KW had adopted this system in Ninbo (HUANG Xu,2006). The situations are generally the same in Haian and Qidong of Jiansu, Shanghai and Quanzhou of Fujian and some other places (YANG Zheng Yong, Wu Fa Hua,2006; ZHENG Shu-guang,1995).

Individual Ownership System

In this form, the production tools such as fishing vessels and trawls all belong to the boss (chief crewman of the fishing vessel and the employer), and the other crews are all employed. The employer pays the wages to crews and gives them some prize according to the year's harvest. After the deduction of the wages of the crews, and other costs, all the surpluses will be possessed by the boss. But all risks related to the operation of the vessel will only be undertaken by the boss (HUANG Xu,2006).

This form is developed on the basis of shareholding cooperative system. At present, it has become the main form of fishing vessel operational system in Jiansu, Shanghai, Zhejiang and some other places. According to the author's field investigation, in XiJia village of Chongming Island of Shanghai, 105 fishing vessels out of 108 belong to individual employers, only 3 fishing vessels adopted shareholding operational system. In Zhejiang, fishing vessels adopted this system have also exceeded over 50%. In Laobei Harbor in Haian of Jiansu, 55% of fishing vessels with power over 146 KW belong to this system.

Company System

Company system means the fishing vessel operational system is established and operated according to the condition and procedure of the company law, with the purpose of profit making, with the basis of necessary production factors such as fishing vessels. According to the company law of China, it can be further divided into 2 types: fishery company with limited liability and fishery joint stock company (HUANG Xu,2006; LU Chang-cai,2006).

The fishery company with limited liability means the company is established according the company law, the owners of the fishing vessels are less than 50 and registered capital is not less than 30,000 RMB, each

shareholder undertakes the risk for the company according to his subscribed capitals. The company uses all its assets to undertake all the debts. Although the number is very few, but vessels using this form do exist in the places of Zhoushan of Zhejiang and Haian of Jiansu.

Fishery joint stock company means all the capitals are divided into shares and the shareholders undertake the responsibility for the company according to the number of shares they have. The company bears the responsibility for the debts with all its assets when engaging in fishery production. Examples of this kind may be China Aquaculture Holding Company and Shanghai Aquaculture Holding Company.

Partnership System

In this system, 2 fishermen join together to buy fishing vessel and all other fishing materials, run the vessel, share the profits and costs, and undertake risks of operation together. There may be contracts between the partners in which the distribution methods may be made clear. Vessels adopted this kind of system account to 1% of all the vessels in the authors' investigation.

Cooperative System

According to the farmer's professional production cooperative system law of the People's Republic of China, farmer's professional production cooperatives are the farmers' self-helping economic organizations with democratic management, and is based on the system of contracted responsibilities on the household basis with remuneration linked to output in rural areas. The producers of similar agricultural products or the suppliers and users of same kind of agricultural services may join together voluntarily to establish farmers' cooperative. It requires more than five farmers to set up a cooperative, and each farmer should subscribe some shares. According to the shares of capitals the farmers invested and their shares of common reserve fund in the account, the farmers undertake corresponding responsibility for cooperatives. Meanwhile, cooperatives have the right to possess, use and dispose the assets accumulated from registered capitals, common reserve fund, the direct subsidiary from the government and donations from other people as well as other forms of assets gained in a lawful way. Also cooperatives should undertake the responsibility for the debt by the above assets.

Fishermen's cooperative is taken as a kind of farmers' cooperative in China and develop fairly well in the east sea region, especially in Zhejiang province. The basic form of this sort of organizations came into being as early as the beginning of the century in Zhejiang. In the year 2001, Taizhou city of Zhejiang began to establish fishermen's cooperative. In the year 2002, Taizhou was officially determined as one of the six pilot areas of national farmers' cooperative by the Ministry of Agriculture. By the end of 2005, 58 fishermen's cooperative had been established, with members of 3640 (HUANG Xu, 2006; LU Chang-cai, 2006). Currently, this kind of organizations is being established in the areas of the East Sea Region of China. However, it is only in the primary stage.

Leasehold System

Leasehold system is a kind of operation form where the owners of the fishing vessels have the contact with the fishermen and lease the vessels to fishermen. The leaseholders (fishermen) should pay back the rent regularly. The vessels in this form of operation are not many, but they do exist in the East Sea Region of China. According to the author's investigation, 3.7% vessels in Taizhou belong to this form.

THE PERFORMANCE OF THE TRANSITION

Efficiency Improvement In The Process Of Transition

The above transformation of fishery operational institution is actually a gradual process moving from planned economy to market economy. This is also a process of privatization of property rights. From planned economy to system of “domination of centralized operation with supplementation of decentralized operation”, proportional sharing, all round responsibility, shareholding cooperative system, individual ownership system, each step of reformation discarded the disadvantages and retained the advantages of the former stage and improved the efficiency to some extent.

Under the entire planned economy system, the ownership and the operational right of the production elements belong to collectives. The production efficiency is decided by the factors such as the managerial capability of the collective leaders and the distribution mechanism. Under this system, in order to improve efficiency, the collective leaders should know well the information about each fisherman’s need, skills and degree of his working effort. Without these information, escape of work may occur because of the lack of effective supervision from leaders of collectives. As a result, efficiency may be lost. The slow development of fishing industry in this period may be the proof of the lost of efficiency.

During the process of moving from the complete planned economy towards the system of “domination of centralized operation with supplementation of decentralized operation”, the practice of “prize for overwork and financial penalty for poor performance” was carried out in the latter system. In general, the information needed by collective leaders in this system is more easily obtainable than in planned economy. They do not need to supervise the fishermen’s effort in the production process in the system of “domination of centralized operation with supplementation of decentralized operation”. What they need only is to decide the amount of the surplus to distribute to the fishermen. It breaks the “big pot” in distribution of profit and improves the efficiency consequently.

However, under this fishing vessel operational system, the ownership of the production materials still belongs to the collective, the right of operation basically belongs to the collective, fishermen only has the right to decide how to produce. In this way, the amount of production, the production value, labour force, work-points, quota of cost as well as the distribution process are still planned by collectives. Whether the quota is scientific or just can not always be guaranteed. The producers’ right may not be corresponding to their responsibility and profits. At the same time, in this situation, fisherman’s repairing and maintenance behaviours of the fishing vessels can not be effectively supervised. As both the natural factors and fisherman’s effort will affect the fishing production, when there is the surplus, the collective leaders can hardly determine whether it is result of the natural factors or the fishermen’s efforts. Also, when there is the poor harvest, it is hard to determine whether it is the result of bad natural factors or the fishermen’s lack of efforts in production. Therefore, there is lack of scientific basis in the process of determining the quota to some extent. As for the fishermen, they have the motive to argue with the collective to lower the quota. Also their motive to use the production materials (such as trawls) excessively to reach the quota always exist. Because of the above factors, it will possibly lead to the loss of the efficiency and it will possibly lead to the loss of fairness. Therefore, there is much room for improvement for this system.

Proportional sharing system is an improvement of the system of “domination of centralized operation with supplementation of decentralized operation”. Under this system, no matter distribution is made according to the production value or to the production of the net profits, the right of operation belongs to the production unit. The collectives will get the profit through sharing the net profits or sharing the production value with their ownerships of the production materials. In this situation, there is no need for collectives to determine the amount of production and labor forces, and the original unscientific practice in the process of determining the quota in the system of “domination of centralized operation with supplementation of decentralized operation” has been removed. Distribution is not decided by the work-

point, rather it is decided by the final result in a proportionate way. The unfairness in the judgment of the work-point has also been removed. So, the positive motive for fishermen increases. The reasonable determination of the distribution proportion becomes the key to improve efficiency and to enhance fairness.

There are two disadvantages in proportional sharing system. On one hand, the common reserve fund and common welfare fund are still accumulated by the collective from what is handed in by the product units to collectives, not drawn from the whole profits. So it is against the principle of fairness. On the other hand, the utilization and maintenance of the fishing equipments can not be supervised. In order to achieve the maximum profits, the fishermen frequently have the motive to use these equipments excessively and unreasonably.

Relatively speaking, the practice of all round responsibility system has better economic efficiency than proportional sharing system. In this system, common reserve fund, common welfare fund, depreciation and management cost are undertaken by the production unit with no regard to the year's harvest. This system solved the problem of the accumulation of public reserve fund and public welfare fund. But the problem of supervision of the fishermen still exists. Some economists like ZHANG Wu Chuang (1969,2002) pointed out that, when the conduct of the agent is not under effective supervision of the principal, the transaction costs of proportional sharing system will be higher than that of leasehold system with fixed rent. The implication of this result is, when the principal is not able to effectively supervise the agent's action, it is necessary to adopt leasehold system with fixed rent rather than the proportional sharing system in order to improve efficiency. LIN Yi-fu (1995) also used the model of game theory to prove the improvement of efficiency on the original planned economy by using system of contracted responsibilities on the household basis with remuneration linked to output in rural areas. In original planned economy, the principal is the collective, and the agents are the fishermen who are engaged in fishing activities on vast ocean. Obviously, during the process of fishing production, as the principal, the collective can hardly supervise the fishermen in an effective way. Therefore, the condition of the proposition proved by Chuang(1969) and LIN Yi-fu(1995,2002) is satisfied. As one kind of leasehold system with fixed rent, all round responsibility system is better in efficiency than the proportional sharing system.

In the system of "accounting based on fishing vessels", the ownership and the operation right of the production materials such as fishing vessels and trawls were completely delivered to production units. So it entirely solved the problems of supervision and distribution. The responsibilities, rights and profits in this system fit with each other more properly. The supervision of the producers becomes the inner motives as a means to achieve the maximum profits; therefore, the efficiency improves greatly than ever.

As one kind of "accounting based on fishing vessels", shareholding cooperative system, which was piloted from the middle 1980s, and officially promoted in 1993, delivered the production elements such as fishing vessels and trawls entirely to the hands of the shareholders. Because the shareholders are also the producers in this system, the problem of supervision of the producers is solved by the system; moreover, it becomes the producers' inner motivation.

The reformation to shareholding cooperative system not only solved the problem of supervision of the producers and improved the efficiency, but also solved the problems of constraints of capitals at that time. Before the adoption of shareholding cooperative system, after a series of reformation, fishermen had accumulated some capitals. But the production materials such as fishing vessel are expensive equipments, purchasing one fishing vessel usually would cost about half a million RMB. As a result, most of the fishermen did not have enough capitals to buy this kind of equipments independently. When the collective places these production materials in the fishermen's hands, most of them did not have sufficient money to

buy the ownership of these materials. Under such conditions, shareholding cooperative system becomes the best choice for fishermen. Usually led by the one fisherman who has engaged in fishing for long time and with enough production experience, his relatives or good friends will joint together to buy the fishing vessel. This kind of cooperative relationship between relatives and friends is still popular in Taizhou up till now. Among the fishing vessels under investigation, those bought by relatives occupy 45.1% and those bought by friends occupy 29.6%. In average, there were more shareholders at the beginning of shareholding cooperative system than now. Take the fishing vessels of Xijia village of Chong Ming in Shanghai for example. This village started to adopt this system at 1993. The basic rules of this reformation is “ each crew should have job, and each crew should have shares”. As a result, each fishing vessel had 8 to 9 shareholders. Now most of the shares of the fishing vessel are transferred to the bosses, each boss owns a fishing vessel. The sharing cooperative system evolved into individual ownership system. Only 3 out of 108 fishing vessels are still adopting shareholding cooperative system, each has 2 shareholders.

When the reformation comes to the stage of shareholding cooperative system, the responsibility to motivate and monitor producers is delivered to producers themselves.

If all crew shareholding cooperative system is adopted, then this responsibility entirely lies on shareholders themselves. Because all the shareholders live and work on the fishing vessel, they can have monitor with each other. And the game between the shareholders can be viewed a game with complete information. At this time, there will not be any problem of unfair proportionate distribution of profits resulted from incomplete information. The loss of efficiency in distribution can be avoided. The production efficiency is determined by the technique and the agreement of the shareholders' opinion.

If the partial crew shareholding cooperative system is adopted, it is also effective to distribute profits among shareholders of the fishing vessel according to the number of shares. The relationship between the shareholders and other crews without shares is the relationship between principal and agent. Because they are on the same vessels, information is also complete, so the wage contract will be set in the level with efficiency. The level of wage is determined by the negotiation abilities between the both parties. The production efficiency is determined by the technique, the agreement of the shareholders' opinion and the fairness of the wage contract.

If the shareholding cooperative system with the combination of the labour and the capital shares is adopted, then all the crew are shareholders and they can monitor with each other effectively. So the efficiency of distribution will also be guaranteed. At this time, production efficiency will be determined by the technique, the agreement of shareholders' opinion and the factors such as the fairness of the distribution between the capital shareholders and labour shareholders.

All the above analysis shows that, from the perspective of micro fishery producer's behaviours, shareholding cooperative system is better in efficiency than the all round responsibility systems. But in practice, the opinions of shareholders often vary with each other, so there still some losses of efficiency in the process of production and distribution. Serious conflictions between shareholders may occur occasionally. And dictation of the shareholder with most shares exists in some places. So Shareholding cooperative system is evolving into individual ownership system gradually in the comparatively developed area, such as in Shanghai.

The individual ownership system obviously has some advantages over shareholding cooperative system. For example, the property right in this system is clearer than that in shareholding cooperative system, so the efficiency of decision-making may be also higher. At the same time, supervision and motivation may also be carried out well because the boss is also on the same boat with all other crews.

The problems of individual ownership system may come from the fact that its risk preventing mechanism may be very weak because of the scale and the number of the owners. In this system, all the risk must be undertaken by the sole owner of a vessel. He must face the limitless responsibilities.

To solve the above problems of individual ownership system and shareholding cooperative system, a new system, cooperative system emerged. In this system, fishermen are organized to resist risks. Meanwhile, they can be absolved from some taxes and get some privileges.

Since the reform and opening-up in 1979, the reformation has largely promoted fishermen's motive to work hard, and increased income. In 1978, the average net income of a fisherman was 93 RMB, but in 2005 it was 5869 RMB. In 1978 the average net income of a farmer was 133.6 RMB, higher than that of fisherman, but in 2005 it was only 3225 RMB, less than what the fishermen got in the same period. From the fact that many non-fishing labours began to engage in offshore fishing, one can deduce that the return of offshore fishing is better than that of agriculture(ZHU Wei-Wei, GAO Jian , YANG Zheng Yong,2006).

Losses In The Process Of Transition

The most serious loss of the institutional transition may be the weakening of the basis of fishery administration. Since transition of the fishing vessel operation system in 1979, although government has always emphasized the practice of "combination of centralization and decentralization", many researchers have also appeal to public to retain the element of "centralization", believing the level of the collective should be strengthened, but in reality, the village organization has already lost the right to arrange fishing production activities in a unified way. The weakening of the basic administration organization led to loss of micro base for the macro administration of fishing vessels and resulted some problems in fishery administration. For instances, the author's investigation showed that illegal fishing vessels exist but can not be administrated effectively in the East Sea region. Some fishermen build their own fishing vessels without permission of the laws. Some fishermen buy and sell vessels illegally.

Another serious problem caused by this transition may be the increase of the numbers of fishing vessels and decline of resources in this region. According to the data provided by "The statistical yearbook of 40 years of Chinese fishery" and "The statistical yearbook of Chinese fishery"(2000. 2005) , there were only 18616 powered fishing vessels in 1979 in East Sea Region of China. In 2005, this number reached 96555, 5.2 times as many as those in 1979.This trend of the fishing vessels is directly affected by the reformation of fishing vessel operational systems. This point will be discussed in other paper.

The increase of the number of fishing vessels has led to the excessive exploitation of the fishing resources in the East Sea Region of China. The main high value fishes are decreasing. The production of large yellow croaker(*larimichthys crocea*), small yellow croaker(*larimichthys polyactis*), ribbon fish(*Trichiurus lepturus*), smelt(*pampus argenteus*) and Chinese herring(*ilisha elongate*) occupied 46% of fishing catch in the 1970s in the East Sea Region of China, but it decreased to 18% of the fishing catch in 1980s. Starting from the middle 1970s, the fishing resources of large yellow croaker, cuttlefish, lefteye flounders and righteye flounders declined gradually (Chen Xinjun,2004) .

Besides above problems, this transition also caused some other losses. For example, investigation made by the author in Jiansu, Shanghai, Zhejiang and Fujian showed that, 27.3 % of fishing vessels had not signed any contract with the collective concerning with public reserve fund, 25.65 % fishing vessel shareholders had never handed in any public reserve fund to the village collective, and 5.9% of fishing vessel shareholders to some extent delayed handing in the public reserve to the collective. As a result, some fishing villages are lack of accumulation. The shortage of accumulation made the fishing villages

unable to have enough capitals to invest on the public commodities, resulting in the serious shortage of the supplying of public commodities.

CONCLUSION AND POLICY IMPLICATION

In this paper, we have discussed the paths, present situation and performance of the institutional transition of the fishing vessel operational system in the East Sea Region of China since the year 1979. The nearly thirty-year long system transition has undergone the stages of entire planned economy to “domination of centralized operation with supplementation of decentralized operation”, proportional sharing, all round responsibility, and shareholding cooperative system. As the reformation keeps on going till today, it has gradually formed the coexistence of many systems, such as shareholding cooperative system, individual ownership system, cooperation system, company system and leasehold system. And the shareholding cooperative system can be further divided into three types: all crew shareholding cooperative system, partial crew shareholding cooperative system, shareholding cooperative system with the combination of the labor and the capital shares. This process of reformation is actually the process of gradual privatization of property rights, distinction of fishery property rights, gradual moving from planned economy to market economy. Each reformation has improved the micro operational efficiency to some extent, making the fishermen’s income much higher than that of the late 1970s, also higher than the level of income growth of farmers’.

This long process of institutional transition has improved efficiencies in the micro operational level, but it has brought some negative effect. It has caused the long-term increase of fishing vessels in this region and the decline of fishery resources. And it has made the disappearance of the micro organization base for the macro administration for the fishing vessels, the transaction cost for management increases as a result.

The above conclusions imply that there are a lot of things need to be done in the next step of the reformation of fishing vessel operation system in this region. When one emphasizes the importance to improve the micro operational efficiency of fishing industry in this region of China, he/she should pay attention to the potential losses in macro administration level. Otherwise, fishing efforts may get out of control and fishery resources may be overexploited, which may cause the poverty of fishermen and marginalization of fishing community.

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In this system, the three owners are production team, village, and government of town.

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