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AN OUTLINE OF THE JAPANESE FISHERY MUTUAL INSURANCE PROGRAM

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Abstract

Small scale, owner operated fisheries are notoriously vulnerable to a wide variety of uncertainties and natural disasters. In Japan, a Fishery Mutual Insurance Scheme, established at the request of the fishermen, has for many years provided a cushion against such disasters. The basic principle of the scheme is to extend payments to cover production costs, allowing fishermen to continue operations into the next season and thus offering an element of stability in an uncertain environment. The paper describes the types of policies available under the scheme - "harvest" i.e. marine, insurance; aquaculture insurance; specialised aquaculture insurance and gear insurance - and the policy guidelines, premium factors and payment standards. The programme is essentially an assistance mechanism operated and administered by the fishermen themselves through the offices of the Fisheries Cooperative Associations (FCA) and the prefectural Fishery Mutual Insurance Cooperative. The central government, however, plays a vital role by supporting the system with premium subsidies, back-up insurance, administrative subsidies and special finance in the event of specific disasters such as Red Tide. The paper provides data on trends in the fishery mutual insurance business. Results of a recent survey of cooperative fishermen are discussed; insurance payments are being mainly used to rebuild productive capacities and to repay debts to the FCA. The author concludes that, although the programme has efficiently served the purposes for which it was established, serious problems will be faced in the future, partly because of a decline in the number of fishermen subscribing to the scheme but more seriously because of the deteriorating financial situation of the programme which had an accumulated debt of over 37 billion yen by the end of 1994.

GOALS AND OBJECTIVES

Fishing activities, involve a variety of serious uncertainties. Fishing gear and vessels are subject to loss or damage, and the harvest itself may decrease or fail completely. In aquaculture, the products under culture may escape, die or suffer disease the enclosures and other facilities and equipment may be lost or damaged.

Japan, with its unique climatic and oceanographic conditions, is especially vulnerable to damage from natural and unpreventable disasters such as typhoons, tidal waves, unusual currents or tides, rapid changes in water temperature, red tides, etc. These potential disasters exert a strong influence on the nation's fisheries.

Japan's fisheries are mostly small-scale, owner-operated, and as such are very vulnerable to the above type of disasters. Small-scale family fisheries have limited financial resources and thus experience great difficulties in recovering from major blows. The Fishery Mutual Insurance Scheme was established at the requests of fishermen; it is designed to provide a stable base for fishery development by cushioning small-scale fishermen against disaster. The basic principles are to provide payments that cover production costs and thus allow fishermen to continue operations into the next season.

TYPES OF POLICIES

There are four categories of policies available

a) **Harvest Insurance** provides payments that cover loss in income due to poor or failed catches. This includes the following three policy types

*Type-1 Fishery (harvest of marine alga and sedentary invertebrates)
*Type-2 Fishery (conducted with vessels of less than 10 G-T)
*Type-3 Fishery (conducted with vessels of over 10 G-T, also set net fishery)

b) **Aquaculture Insurance** provides payments to aquaculturists based on the quantity of product of fishpens or other pieces of equipment lost or damaged.

c) **Special Aquaculture Insurance** provides payments for lost or destroyed gear (based on standards of Aquaculture Insurance) and for lost product (based on standards of Harvest Insurance). This includes the following five policy types.

*Laver (Nori) Culture
*Wakame (Undaria) Culture
*Laminaria (Konbu) Culture
*Pearl Oyster Culture
*Scallop Culture

d) **Gear Insurance** provides payment against fishing gear lost or damaged during operations. This includes the following two policy types: set net and purse seine.

POLICY GUIDELINES AND PAYMENT STANDARDS

The Harvest Insurance and Aquaculture Insurance account for 80% of all Fishery Mutual Insurance business. These two policy categories are outlined below.

Harvest Insurance

i) *Contracted Value*

The amount of income contracted for under the insurance is based on the policy holder's average

annual income over the past five years. The highest and lowest annual incomes are discarded, and the remaining three are then averaged. The Contracted Value is then set at the Fixed Rate (between 0.7 and 0.9) X the three-average.

ii) *Premium Standards*

Premium is calculated by the following formula:

Contracted Value X Contract Rate X Premium Rate

iii) *Value of Insurance to be covered*

The value of damage is calculated by subtracting the policy holder's actual harvest income during the insured period from the Contracted Value established under the policy. The insurance amount paid to the policy holder is calculated by the following formula:

Value of Damage X Contract Rate X Compensation Rate

N.B: Value of Damage = contracted (value), compensation rate is 70-80%.

iv) *Contract Procedures*

The contract procedures differ according to the type of policy.

- Type-1 Fishery

  Fishermen's Cooperative Associations (hereafter abbreviated as FCA) contract the insurance policy on behalf of the member fishermen. Member fishermen make an agreement among themselves concerning their own rules for sharing premiums and payments.

- Type-2 and Type-3 Fishery

  Three contract procedures are available for these types of policy.

- Individual Contract: For Type-2 Fishery policies, at least 1/2 of the individual fishermen in a region must contract for the insurance.

- FCA Contract: If 2/3 of the members of an FCA enter into contract, the policy is treated the same as a Type-1 Fishery policy. A rules is made like in the case of Type-1 Fishery.

- Group Contract: A group of fishermen form a special group for the purpose of establishing an insurance policy. If 1/2 of the members of an FCA enter into contract, the policy is treated the same as a Type-1 Fishery policy.

  Rules for sharing premiums and payments are made in the same manner.

Aquaculture Insurance

i) *Contracted value*

The contracted value is calculated by the following formula: total contracted value = per unit contracted value X number of damaged units.

The amount contracted for under the insurance is based on the value of the policy holder's aquaculture equipment and product. The Contracted Value is calculated by adding up the individual values of the policy holder's equipment or product. In the case of equipment, the size, materials and utilization period of rafts and nets etc. are taken into consideration. In the case of product, the species as well as the age are taken into consideration. In the case of product, the species as well as the age are taken into consideration.

ii) *Premium standards*

Premium is calculated by the following formula:

Contracted Value X Contract Rate X Premium Rate = premium standard.

iii) *Value of damage*

The criteria for calculation of value of damage to cultured species or equipment/facilities is determined as follows:

- Cultured species: the value of damage is calculated from the number of fish damaged, destroyed or lost during the contract period.

- Aquaculture equipment/facilities: the value of damage is calculated from the number of pieces of equipment damaged, destroyed or lost during the contract period.

Compensation payments, however, are not made when damage results from the following causes:

- war and insurgencies
- theft
- toxic pollutants or discharges
- when the policy holder or a third party is clearly responsible for the damage or loss
- red tide in extreme cases (excludes cases where a special Red Tide Indemnity Clause is contracted for)

iv) *Insurance amount to be paid"*

For cultured products, the amount of payment is calculated from the following formula:

Contracted amount per unit of species cultured X Number of unit damaged X Elapsed Time Rate X Survival Rate X 80% X Contract Rate.

The Elapsed Time Rate is based ont the assumption that the amount of production cost lost will depend on how long he products have been under cultivation. The end of the insurance contract period is defined as 100%, and the Elapsed Time Rate is then calculated by applying a fixed schedule to the time when the actual loss or damage occurred. The Survival Rate is based on the number of loss or damaged products which can be assumed to have been lost or damaged through natural mortality by the end of the contract period.

In the case of aquaculture equipment/facilities the amount of payment is calculated as follows:

Contracted amount per unit of equipment X Number of unit damaged X Contract Rate.

The Depreciation Rate is based on the assumption that the equipment, even if not lost or damaged, would have lost some value by the end of the contract period.

v) *Contract Procedures*

Aquaculturists may contract for individual policies, but all the aquaculturists engaged in culture of a particular species in a particular region must contract before a program can be established.

vi) *Transfer of Policy*

In the case of inheritance from father to son, the policy is usually automatically continued. Whenever ownership of aquaculture equipment or products is transferred, however, permission of the Fishery Mutual Insurance Cooperative is required.

ORGANIZATION

Functions of Organization Involved in Fisheries Insurance

A Fishery Mutual Insurance Cooperative (FMIC) is formed in each prefecture, which is comprised of the local FCA and their federations. In addition, in some cases the risk is too great to be borne by a single FMIC. Furthermore, the government also provides back-up insurance for some of the policies held by the National Federation of Fishery Mutual Insurance Cooperatives; in the case of sudden or large scale disasters which exceed the payment capabilities of the insurer, the Agriculture, Forestry and Fisheries Credit Fund (AFFCF) provides low interest loans to both the National Federation and the FMIC. The relationship among these various levels of the Fishery Mutual Insurance Scheme, as well as the their number and size, are shown in (charts B and C).

Functions of Fishermen's Cooperative Association

The local FCA play many important roles and functions in the Fishery Mutual Insurance Scheme.

i) ***Consultation and guidance***

The Fishermen's Cooperative Association Law, under which the FCA are founded, specifically provides for fishery mutual insurance as one of the activities which FCA are permitted to engage in. The local FCA provides guidance to their members to help them subscribe to fishery mutual insurance policies.

ii) ***Legal representative***

As discussed above, for some policies the FCA enters into contract on behalf of their member fishermen. This system allows the FCA to take an initiative in safeguarding the interests of member fishermen.

iii) ***Administrative contractor***

The FMIC contract out part of their administrative work to the local FCA. This system helps the FMIC to keep administrative costs to a minimum and allows these organizations to handle a greater number of insurance policies. Among the jobs contracted out are calculation of Contracted Amount, procedural matters such as notice of damage, and other research necessary for determining premiums and payments. The FCA collects data on income from fisheries and/or aquaculture; in most cases, the fishermen market their catch through their local FCA. The FCA thus keeps all data on catches and income for each member. This data is vital in determining a contract holder's average annual income, which is the basis for determining the value of the insurance contract as well as claim payments in case of damage or loss. By working through the FCA, the FMIC is able to establish contract and claim values with maximum accuracy and efficiency. In this manner, the FCA is indispensable to the smooth functioning of the Fishery Mutual Insurance, Program.

ROLE OF GOVERNMENT

The Fishery Mutual Insurance Program is essentially a mutual assistance program operated by the fishermen themselves through the offices of the FCA and FMIC. The government, however, treats the Fishery Mutual Insurance Program as an important element of the national fishery disaster countermeasure policies, and as such provides the following support.

Premium Subsidies

The government provides part of the premium as subsidies for fishermen below a determined scale of operations. Recent trends in these subsidies are summarized in the following.

Government Subsidies for Fishery Mutual Insurance Premiums

(unit: Million Yen %)

Year	HARVEST INS. Prem.	HARVEST INS. Sub.	AQUA. INS. Prem.	AQUA. INS. Sub.	SP. AQUA. INS. Prem.	SP. AQUA. INS. Sub.	GEAR INS. Prem.	GEAR INS. Sub.	TOTAL Prem. (A)	TOTAL Sub. (B)	SUBSIDY RATIO Total Prem/ total sub (B)/(A) x 100
1992	10,022	4,358	3,706	1,660	2,016	1,108	119	43	15,863	7,169	45.1
1993	9,301	4,107	3,784	1,695	1,964	1,078	115	41	15,164	6,921	45.6
1994	8,844	3,946	4,204	1,897	2,148	1,179	106	40	15,303	7,062	46.1
1995	9,329	4,141	3,768	1,701	2,443	1,339	105	40	15,645	7,221	46.2
CT	183,597	79,813	101,743	46,284	14,690	8,062	1,600	495	301,631	134,654	44.6

Note: 1) As of end of June, 1996
2) Cumulative total: from FY 1964 to FY 1995
3) CT: cumulative total

Back-up Insurance

In extreme case where the amount of damages exceeds the payment capabilities of the Fishery Mutual Insurance Scheme, the government provides back-up insurance (except for gear insurance). When the claim payments required of the National Federation of FMIC exceeds a set figure, the government covers 93% of the amount over the set figure.

Administrative Subsidies

Partial government subsidies for administrative and personnel costs are provided to organizations involved in administering the Fishery Mutual Insurance Program.

Red Tide Premium Subsidies

The government subsidizes two-thirds of the premiums on special red-tide coverage for aquaculture insurance.

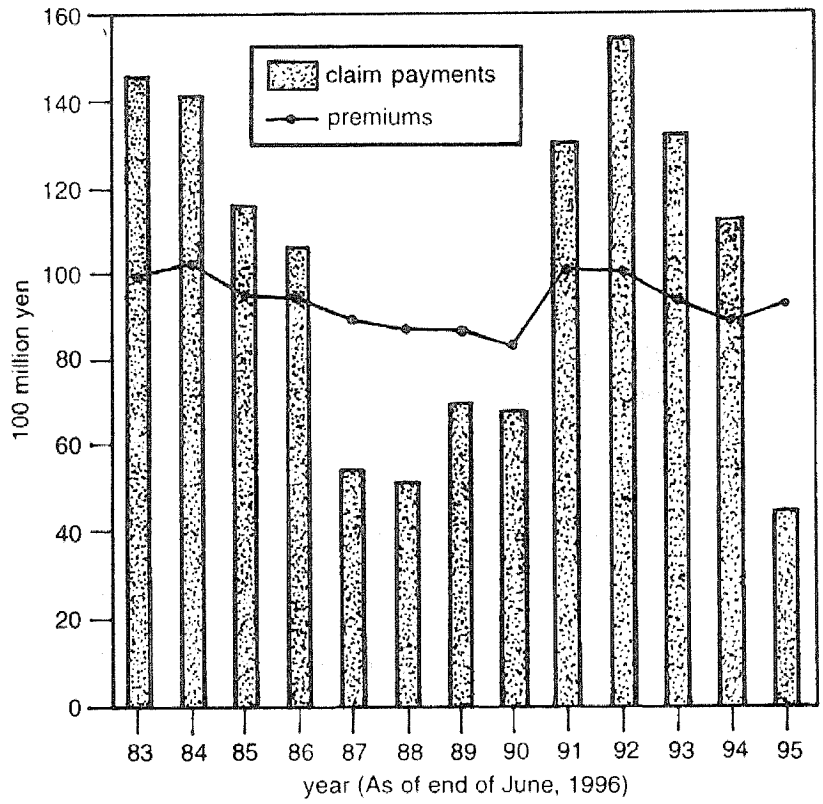
Contribution of Part of the Share Capital to AFFCF

RECENT TRENDS-RESULTS OF FISHERY MUTUAL INSURANCE BUSINESS BY YEAR

Recent Trends in the Harvest Insurance Sector

Recent Trends in premiums (line graph) and claim payments (bar graph) for harvest insurance are shown in the following figure.

Chart (a): Recent Trends in Harvest Insurance Sector



As can be seen, with the exception of the period from 1987 through 1990, claims payments have exceeded premiums regularly. The chief factors are as follows.

- 1983-1986

*Poor harvest (Type-2 fishery, pollock gill net fishery)
*Depletion of resources (bottom trawl, abalone, purse seine fisheries)
*Drop in product value (salmon/trout set net, saury lift net)

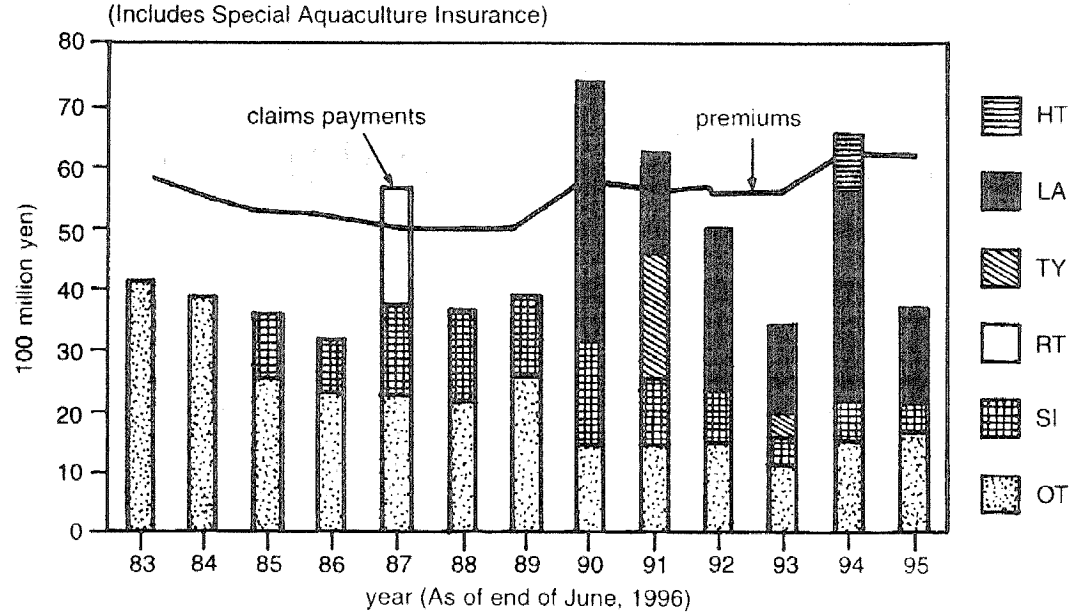
- 1991-1992

*Poor harvest (salmon/trout set net)
*Unusual return rates (salmon/trout set net)
*Depletion of resources (pollock gill net)

The Aquaculture Insurance Sector

Recent Trends in premiums (line graph) and claim payments (bar graph) for aquaculture insurance are shown below. Claim payments are indicated by cause.

Chart (b): Recent Trends in Harvest Insurance Sector



N.B.: The cause for payment before 1984 are not available.

(N.B.)

HT:	Damage from High Water Temperature	RT:	Damage from Red Tide
LA:	Damage to laver and other alga	SI:	Damage from Streptococcal Infection
TY:	Damage from Typhoons	OT:	Damage from Other factors

SI refers to streptococcal infection, which causes bulging eyes or whiting of eye lenses, internal bleeding and other symptoms in aquaculture fish. This contagious disease can occur at any time of year, but is most prevalent during the summer, when water tempertures are high. An infection can last for a long time period, causing great damage. Claims exceeded premiums for 1987, 1990-91 and 1994. The chief factors were as follows

- 1987 Disease and unusually large scale red tides (yellowtail sector)
- 1990 Unusually high water temperatures (laver sector)
- 1991 Typhoon damage (oyster sector)

EVALUATION

Questionnaire Survey Results

A questionnaire was distributed to 2,674 FCA members holding Fishery Mutual Insurance policies to determine how insurance payments were being utilized (100% valid return rate). The results, shown below, demonstrate that these payments are being utilized for rebuilding productive capabilities following losses or damages, which is the major purpose for which this mutual insurance program is designed. In addition, the survey shows that fishermen are using the insurance payments to pay off bills for equipment and materials and to repay debts to the FCA. This shows that the Fishery Mutual Insurance not only helps stabilize the financial situation of individual fishermen, but contributes to stable operation of the FCA as well.

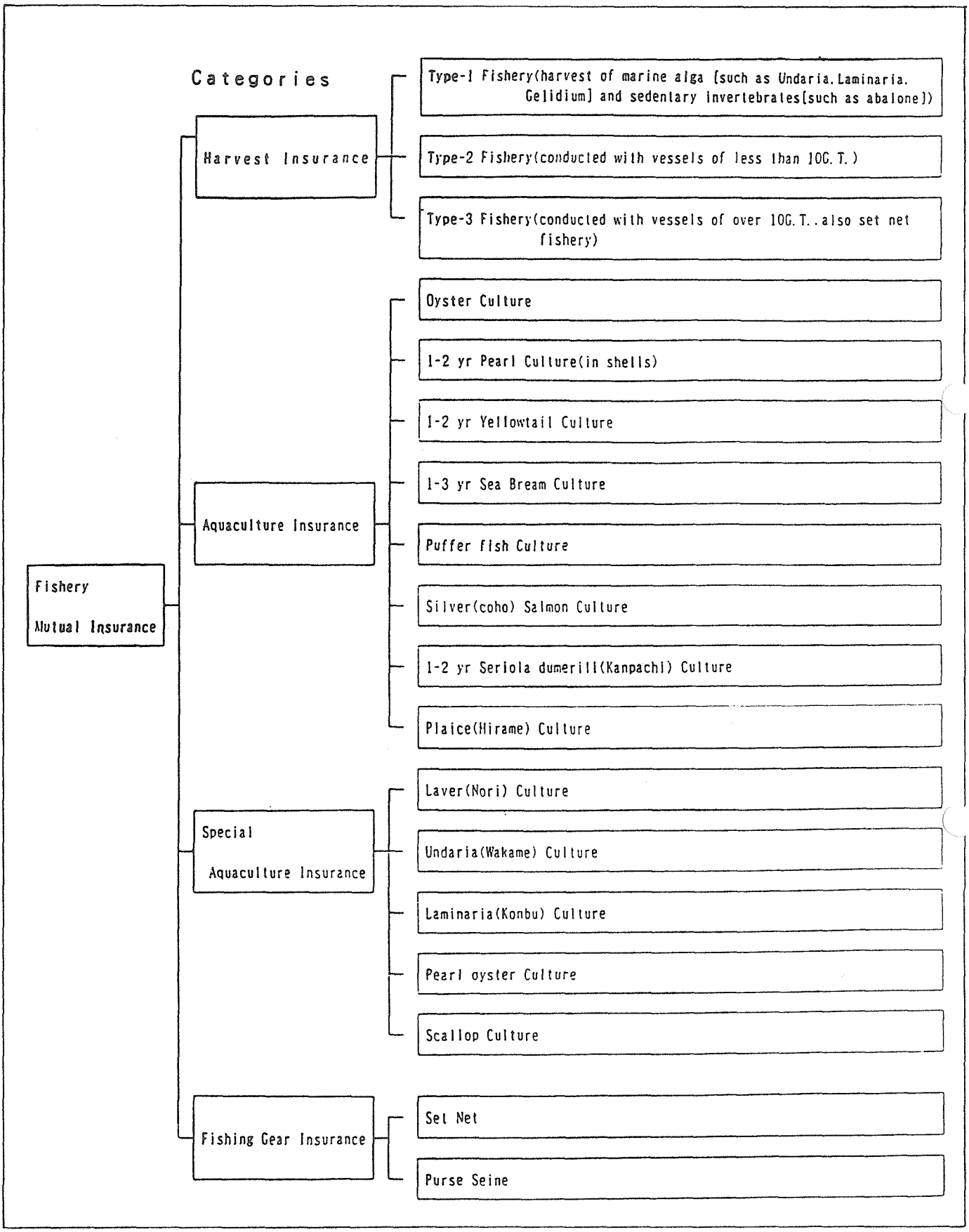
Table (b): Survey Results		
Purpose	**Number of responses**	**%**
Payment for equip/supplies	1,854	69.3
Payment of unpaid wages	297	11.1
Replace equipment	373	13.9
Labor costs	188	7.0
Living expenses	989	37.0
Payment of premium	642	24.0
Savings	369	13.8
Payment of other expenses	260	9.7
Repayment of debt	1,124	42.1
Number of FCA member fishermen who replied to the questionnaire	2,674	100.0
*The reply includes all the items filled in under "purpose" by the respondents.		

Current Problems

While the Fishery Mutual Insurance Program is serving the purposes for which it was established, several problems, remain in particular, recent years have witnessed a stagnation in number of fishermen subscribing to the program. The rate of subscription was not more than 37% in 1992, and is even starting to show a slight decrease. The current subscription rate is less than desirable. Factors include decrease in resources and lower seafood prices. Perhaps more importantly the program is currently operating in the red, with an accumulated debt of 37.7 billion yen as of the end of 1994. Unless the financial situation can be improved, the program may have difficulties in meeting its stated objectives in future years.

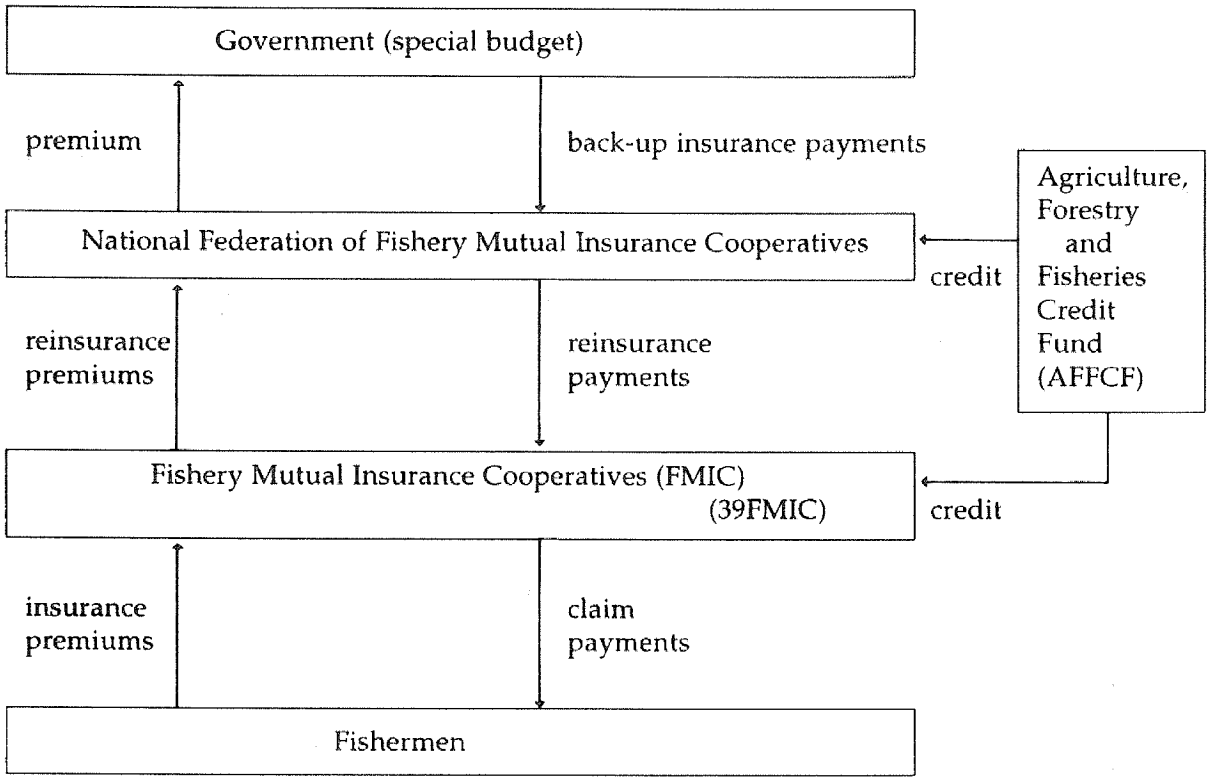
APPENDIX 1

Chart A: Categories of Fishery Mutual Insurance



APPENDIX 2

Chart B: Relationships



APPENDIX 3

Chart C: Sizes of above organizations

	number of organizations	total number of employees	average number of employees
FMIC	39	212	5
Nat, Fed. FMIC	1	40	40
AFFCF*		124	124
	1	(5)	(5)

N.B.: *AFFCF The figures in the bracket refer to the number of employees who are in charge of Fishery Mutual Insurance.

APPENDIX: 4

Table 1: Performance of Fishery Mutual Insurance Program

Trends in Fishery Mutual Insurance 1991-1994

(unit: No of contracts million yen)

Year	Number of contracts	Total cont. value	Total prem. payments	Number of claims	Total claim payments	Claim/ policy ratio	Claim/premium payment ratio
1991	47,764	373,217	15,804	17,790	19,273	37.2	122.0
1992	47,592	387,560	15,863	20,374	20,425	42.8	128.8
1993	47,873	382,985	15,164	18,068	16,671	37.7	109.9
1994	46,983	392,512	15,303	20,774	17,821	44.2	116.5

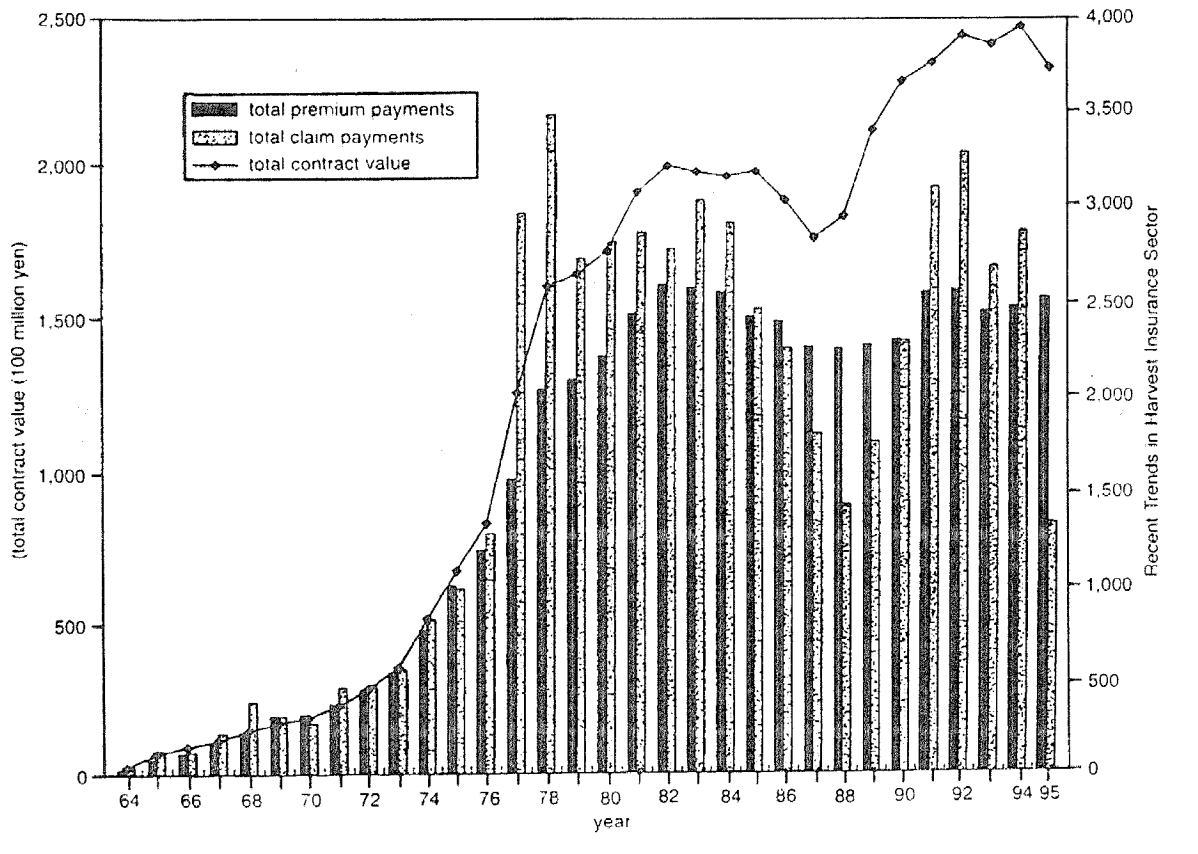
Note:

1) Claim/policy ratio (%) = $\frac{\text{No. of claims}}{\text{No. of contracts}} \times 100$

2) Claim premium payment ratio (%) = $\frac{\text{Total amount of claims paid}}{\text{Total amount of premiums collected}} \times 100$

APPENDIX 5

Chart D: Trends in Fishery Mutual Insurance 1964-1995



APPENDIX: 6

Table 2: Recent trends in Fishery Mutual Insurance for Three Organizational Levels
Result of Profit/Loss by Year

unit: Million yen

Year	------ Pref. FMIC ------ Result	Cumulative total	National Federation of FMIC Result	Cumulative total	----- Government ----- Result	Cumulative total
1964	2	2	55	55	-	-
1965	37	39	289	343	-	-
1966	16	55	170	513	-	-
1967	17	72	139	652	0	0
1968	54	126	266	918	30	30
1969	26	100	146	1,065	376	405
1970	63	37	14	1,051	6	412
1971	4	41	98	952	112	300
1972	27	67	619	1,517	6	306
1973	28	40	226	1,797	381	74
1974	16	56	595	2,392	12	63
1975	16	39	202	2,594	444	506
1976	3	36	1,141	3,735	868	1,375
1977	186	222	2,058	5,793	746	629
1978	678	900	3,939	9,731	7,249	6,620
1979	546	1,446	1,601	11,332	3,266	9,887
1980	411	1,858	1,564	12,897	2,051	11,938
1981	324	2,182	3,497	16,393	228	11,710
1982	279	2,461	2,480	18,873	1,259	10,451
1983	325	2,786	1,172	20,045	413	10,037
1984	461	3,247	837	20,882	1,660	11,698
1985	334	3,581	113	20,769	2,417	14,115
1986	268	3,849	632	20,137	1,010	15,126
1987	119	3,730	1,702	18,435	807	15,932
1988	539	3,191	2,770	15,665	1,776	14,156
1989	411	2,781	1,728	13,937	1,277	12,879
1990	332	2,449	673	13,264	143	13,022
1991	15	2,464	182	13,083	1,898	14,920
1992	139	2,604	389	13,472	1,130	16,050
1993	78	2,682	1,809	11,663	3,558	19,608
1994	418	3,100	885	12,547	2,460	22,067
1995	140	3,241	643	11,904	2,867	24,934

Note: The data are as of 31 March 1996.

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