International and Economic Policy Aspects of the Soviet Ocean-going Fishing Industry

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ABSTRACT

This thesis examines the economic and political aspects of the Soviet distant water fleet. The Soviet Union is the number two fishing nation, responsible for 12% of the world catch. The USSR is planning to further expand its efforts by implementing a multi-faceted strategy to increase the quantity and quality of fish and fish products. However, future expansion is unlikely.

The 1990's will be a challenging decade for the Soviet fishing industry. Fish will remain a source of much sought after hard currency and food, but the prospects for the optimistic growth forecasted by the Soviet government are not realistic. Despite the current profitability of this industry, several factors limit future growth of this sector, including restricted Soviet access to coastal fisheries, depleted stocks worldwide, as well as the high cost of open ocean fishing operations. In addition, there is pressure for global conservation for many of the stocks targeted by the Soviet distant water fleet. This has led to the increase of regional management schemes in the South Pacific, East Caribbean, and the Antarctic which effectively close off most new areas of expansion to the USSR. As a result, the Soviet fishing industry has increasingly turned to developing its coastal fisheries and mariculture capabilities to increase its annual harvest.

TABLE OF CONTENTS

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This dissertation is dedicated to two Camerons: to Professor Watt who inspired me to take on this venture and to my daughter who motivated me to complete it before she learned to walk.

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PREFACE

"Now, thank God, the period of stagnation is over." *Perestroika*[1] has brought renewed vigor to the Soviet Union not seen since Lenin's New Economic Policy (NEP) program was introduced in the 1920's. The goal of this reform is to raise the standard of living in the USSR through a major restructuring of the economy.

> The main aim is to change the economic management of our country from the administrative (*diktat* or command) system developed over the last 50 years to a radically new one, based on economic levers such as market forces, financial credits and other stronger economic stimuli. The whole process must be carried out alongside a general democratization of our society and a transition to self-administration in our enterprises.[2]

Economic growth will be accelerated through the intensification of production and the extensive democratization of management. Enterprises will transition from dependence on the government to self-financing and self-accounting.[3]

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[1]*Perestroika* was inaugurated in the April 1985 Plenary Meeting of the Central Committee. The June 1987 Plenary Meeting of the Communist Party of the Soviet Union (CPSU) Central Committee adopted the "Fundamentals of Radical Restructuring of Economic Management."

[2]Abel Aganbegyan, Inside *Perestroika*, Harper & Row, Publishers, NY, 1989, p. 1.

[3]Nikolai Ryzhkov, Guidelines for the Economic and Social Development of the USSR for 1986-1990 and for the Period Ending in 2000. *Novosti* Press Agency Publishing House, Moscow, 1986, p. 19.

> The main task of the five-year plan (12th five-year plan period)...consists in enhancing the growth rates and efficiency of economic development through accelerated scientific and technological progress, the retooling and technical reconstruction of industry, the intensive utilization of the existing production potential, an improvement of the economic management system, of the economic mechanism, and the attainment, on this basis, of a further rise in the Soviet people's living standard.

Though the Soviet Union has the population and resources to make this country an economic superpower,[4] the current reality of *Perestroika* is dismal. Officially, the national income grew by 3.6% from 1981-85. Unofficially, Soviet economists have said the economy has stopped growing. The net material product (NMP), the basic Soviet index analogous to the gross national product (GNP), was 3.1% in 1985 and 3.6% in 1987 whereas Western analysts calculated real growth as closer to 0.8% for both years. Inflation is unofficially estimated to be 6-8%, fuelled by a budget deficit of 11% as opposed to 3% of GNP as in the United States.

The benefits of *Perestroika* are not obvious to the average citizen. Soviet housewives spend at least the equivalent of one day's work each week standing in line to do the shopping. Basic goods such as meat, sugar and detergent are often unavailable or rationed. Americans are nine times as likely to have a telephone and 12 times as likely to own a car.

In addition to economic problems, the USSR is facing political turmoil in its empire: 1989 was a tumultuous year for Eastern Europe. An avalanche occurred starting with the Solidarity sweep in the Polish elections last June. By August, General Wojciech Jaruzelski announced the first non-Communist government since the World War 11, and Tadeusz Mazowiecki was nominated as Prime Minister. In October, Hungary went even further and disbanded the Communist Party, renaming itself the Hungarian Socialist Party. Long-time Party Chief Erich Honecker resigned as head of East Germany and several weeks later the Berlin Wall, the symbol of the Cold War, the East-West schism, was turned into a mass of asbestos-ridden rubble. The East German Parliament rewrote its Constitution and scheduled free elections in 1990. In November, Party Chief

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[4]The USSR has one sixth of the world's land area, over 22,400,000 square kilometers, abundant natural resources, more than 286 million educated people, including 1.5 million scientist (which is 25% of the world's total). The Soviet Union is a multinational state comprising of 15 Union Republics with over 100 nationalities. In 1920, the USSR had approximately 8% of the world's population, but only 1% of the total industrial output. By the late 1980's, the USSR produced 20% of the total industrial output, surpassing the combined product of West Germany, Britain and France and second only to the United States. In other words, the Soviet output has grown 590 times since the 1920's.

Todor Zhivkov was ousted in Bulgaria as were Milos Jakes and the *Politburo* in Czechoslovakia. The last holdout, Nicolae Ceausescu was overthrown December 22, after a week-long protest in which hundreds of protestors were killed by his security forces. He and his wife subsequently were tried and executed.

The break-up of the Soviet empire was part of Gorbachev's overall economic strategy which was to place bankrupt Eastern Europe into the hands of the West, relieving Gorbachev of this heavy financial burden. Gorbachev can now address the domestic economy. It is interesting to note that while Eastern Europe has been allowed to explode, Gorbachev has kept a tight reign on the political and racial unrest in the Baltic and southern territories.

Gorbachev is facing unbelievable challenges in this decade. No one knows what will happen next. Last year, few would have anticipated the demolition of the Berlin Wall and thousands demonstrating in Red Square. Dramatic changes in the Soviet Union are happening on a daily basis.

GLOSSARY

Aeroflot	Soviet State Airline
ATA	American Tuna Boat Association
AtlantNIRO	Atlantic Scientific Research Institute for Fisheries and Oceanography (USSR)
AzcherNIRO	Azov-Black Sea Scientific Research Institute for Fisheries and Oceanography (USSR)
Azcherryba	Azov-Black Sea Fisheries Administration (USSR)
BMRT	Large Stern Factory Trawler
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CEAO	West African Economic Community
CECAF	Fishery Committee for the Eastern Central Atlantic
CMEA	Council for Mutual Economic Assistance
COMECON	Council of Mutual Economic Assistance
CPSU	Communist Party of the Soviet Union
Dalryba	Far Eastern Fisheries Administration (USSR)
DWFN	Distant Water Fishing Nation

DWT	Deadweight Tons
EC	European Community
EEZ	Exclusive Economic Zone
EPSEP	*Empresa Publica de Servicios Pesqueros*/State Company for Fisheries Service (Peru)
FAO	Food and Agriculture Organization (United Nations)
FRG	Federal Republic of Germany
FTO	Foreign Trade Organization (USSR)
FYP	Five Year Plan
GDR	German Democratic Republic
Glasnost	Openness-referring to the Soviet policy of increased freedom of speech under Gorbachev
Glavryba	Main Administration of the Soviet Fishing Industry
GNP	Gross National Product
Gosplan	State Planning Committee of the Council of Ministers of the USSR
GRT	Gross Registered Ton
IBFSC	International Baltic Sea Fishery Commission
ICCAT	International Convention for the Conservation of Atlantic Tuna

ICCLRSEA	International Convention on the Conservation of the Living Resources of the Southeast Atlantic
ICCNPFS	Interim Convention on the Conservation of North Pacific Fur Seals
ICES	International Council for the Exploration of the Sea
ICNAF	International Convention for the Northwest Atlantic Fisheries
IOC	Inter-governmental Oceanic Commission
IWC	International Whaling Commission
KaspNIRO	Caspian Scientific Research Institute for Fisheries and Oceanography (USSR)
Kaspryba	Caspian Sea Fisheries Administration (USSR)
Kolkhoz	Soviet Collective Farm
KPC	Kamchatka Pacific Company
LOS	Law of the Sea
LSI	Law of the Sea Institute
MFS	Motorized Fishing Station
MRC	Marine Resources Company
MRCI	Marine Resources Company International

MRT	Small Trawler
MRTR	Small Freezer Trawler
MSY	Maximum Sustainable Yield
NEAFC	North-East Atlantic Fisheries Convention
NEP	New Economic Policy
NMFS	National Marine Fisheries Service (USA)
NMP	Net Material Product
NOAA	National Oceanic and Atmospheric Administration (USA)
OECD	Organization for Economic Cooperation and Development
Perestroika	Restructuring-referring to the current economic program in the USSR
PICES	Pacific International Commission for the Exploration of the Sea
PINRO	Polar Scientific Research Institute for Fisheries and Oceanography (USSR)
PRC	People's Republic of China
ROK	Republic of Korea
RTC	Resource Trading Company
Sevryba	Northern Regional Fisheries Administration (USSR)

SFC	Sierra Fishing Company
Sovkhoz	Soviet State Farm
Sovrybflot	Soviet State Fisheries Company
SRT	Medium Size Fishing Vessel
SRTM	Medium Size Trawler
SRTR	Medium Size Freezer Trawler
TAC	Total Allowable Catch
TINRO	Pacific Scientific Research Institute for Fisheries and Oceanography (USSR)
UNCLOS	United Nations Conference on the Law of the Sea
VNIRO	All Union Scientific Research Institute for Fisheries and Oceanography (USSR)
Zapryba	Western Fisheries Administration (USSR)

INTRODUCTION

Soviet sea power has evolved since the 1930's to become one of the primary maritime powers in the world. The basis for this incredible growth is the apparent integration of all aspects of its sea-use, including central management of the Navy, Merchant Marine, and research expeditions into a central policy.[5]

Soviet sea power evolved under the leadership of Stalin who promoted an offensive naval program by commissioning the construction of two 35,000 ton warships, a 12,000 ton aircraft carrier, as well as 19 destroyers, 18 submarines, and seven cruisers.[6] Khrushchev broadened the scope of Soviet sea power to include the Merchant Marine, fishing industry, and oceanographic research.

More recently, sea power has become an important part of *Perestroika*. Under this program more attention is focused on improving the domestic economic situation rather than increasing the country's military presence. During the new decade, Gorbachev's biggest challenge will be feeding the people. He inherited a disastrous agricultural sector which has been unable to feed the country since Stalin introduced collectivization in 1929. As a result, the USSR has had to turn to its fishing industry to provide the country with animal protein.

Soviet calculations show that currently it is more economical to fish than farm. For example, according to one Soviet economist, Dr. A.A. Aksenov, it takes 2,000-2,500 rubles of

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[5]S.G. Gorshkov, The Sea Power of the State, Naval Institute Press, Annapolis, MD, 1979, p. 42.

> The fishing fleet (in its widest sense) is a constituent part of the civil fleet and an important component of the sea power of the state. The role of this fleet has sharply grown as a result of progress in the mastery by mankind of the World Ocean and increase in the scale of use of various marine products of animal and plant origin for food and industrial purposes. Its most important task consists in ensuring the solution of the acute food problem facing mankind.

[6]Donald C. Watt, "Stalin's First Bid for Sea Power, 1933-1941," U.S. Naval Institute Proceedings, V. 90, N. 6, 1964, p. 90.

investment to produce 100 kilograms of beef whereas it takes only 1,500-1,700 rubles to produce an equivalent amount of fish. In addition, to produce one head of beef requires 20 man-days whereas to produce the equivalent amount of fish takes five days.[7] As a result of the reduced labor costs, fish is less expensive. One gram of protein contained in cod can be purchased by Soviet consumers at 1/6 the price for chicken, and 1/3 the price of mutton or beef.[8] Over 20% of animal protein in today's Soviet diet is from fish and sea products.

Unlike the agriculture sector,[9] the fishing industry is profitable.[10] The fishing industry produces 15 billion rubles gross income, including 12 billion rubles for commercial marketable products, which amounts to 2.5 billion rubles of profit each year.[10] The industry currently produces about 5,000 types of edible fish products and tins. In the period 1981-83 alone, 295 new fish eatables were introduced.[11]

This growth is not likely to continue. Until the mid-1970's, the fishing industry assumed that access to marine resources was limited only by the available technology and fleet capacity. However, worldwide depletions of commercial stocks from overfishing and the introduction of coastal jurisdiction over the most valuable grounds invalidated this assumption. Consequently, the Soviet fishing industry has been forced to explore new fisheries in the high seas and through the development of its domestic mariculture program.

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[7]United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Office of International Fisheries, Fisheries of the U.S.S.R., 1976, Foreign Fisheries Leaflet N. 77-2, Government Printing Office, Washington D.C. , February 1977, p. 453.

[8]N.P. Sysoev, Economics of the Soviet Fishing Industry, translated by the Israel Program for Scientific Translations for NOAA, NMFS, US Department of Commerce, and the National Science Foundation, Government Printing Office, Washington D.C., p. 5.

[9]Please refer to Appendix A on the Soviet agricultural sector.

[10]Press Release May 1989, my translation. Copy from Captain Konstantin P. Tkachenko, First Secretary of Fisheries Affairs, Embassy of the Union of Soviet Socialist Republics, Washington D.C.

[11]*Inrybprom* 85 USSR, International Specialized Exhibition of Soviet Exhibits, Marketing Materials, *Inrybprom*, Leningrad, 1985, p. 6.

Emphasis in the 1990's will be on improving the quality of the harvests, rather than only increasing the quantity of the catch. *Perestroika* has greatly affected the fishing industry by streamlining the bureaucracy in the Ministry of Fisheries and making the industry accountable for its financial operations. Measures have been taken to modernize the fleet as well as improve the infrastructure of the fishing ports and onshore processing enterprises. Spoilage has been reduced due to the improvement in the transportation system and in more efficient distribution channels. In addition, the training and education programs have been improved making the fishing industry a highly skilled and desirable profession.

Despite these improvements, the future for fishing industry in the new decade is dim. Increased investment and focus on the agriculture industry will continue to take funds away from the Soviet fishing industry. In addition, the industry has less upward potential than the agriculture sector. The cream of the ocean resources has been depleted through pollution and overfishing. The extension of coastal jurisdiction in the 1970's has excluded the Soviet fleet from many of its traditional fishing grounds. No longer can the Soviet flotillas "annihilate" fishing grounds through overfishing as in the 1960's and early 1970's. Instead the Soviet Union has had to negotiate for restricted access to coastal fisheries through bilateral agreements and by participating in joint ventures.

Soviet Administration and Management Structure

A study of the Soviet political organization as it relates to the bureaucracy of ocean and inland water policy making.

According to Soviet organizational chart, the Soviet Union has an integrated ocean policy. Fishery, merchant marine, naval, and research issues are closely coordinated into an overall centralized plan with military concerns traditionally taking precedence. Each maritime activity supports the Navy, thus, merchant marine, research and fishing vessels can be transformed into warships. In addition, Soviet fishing vessels reportedly have been used for intelligence gathering. In one instance, up to 35 Soviet "fishing vessels" were used to monitor American military communications and radar installations, aided by the oceanographic vessel, the *Cosmonaut Komarov*.[12] Under Gorbachev, the emphasis on ocean policy has shifted gradually away from the military to focus on domestic issues such as feeding the population. As a result, fisheries have been given increasing importance in the *Politburo* decision-making process.

Theoretically, ocean policy is formulated through the Soviet system of democratic centralism. The Communist Party decides policy which is legislated by the Government and then administered by the Ministries. However, in practice, the Soviet Union is not much different from the United States in its bureaucratic decision-making process. In both countries, special interest groups lobby for favorable legislation to their sphere of influence.

On paper, the Congress of the Communist Party of the Soviet Union (CPSU) is the highest form of government, followed in descending order of importance by the Central Committee Plenum, Central Committee *Politburo*, and the Central Committee Secretariat. In reality, the order of importance is practically reversed with the *Politburo* making the most important decisions, followed by the Secretariat, the Plenum, and lastly the CPSU.

The *Politburo* decides the direction of the Soviet economy. These plans are then implemented by the Government. The agenda

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[12]Robert A. Kilmarx, Soviet Sea Power, Center for Strategic and International Studies, Special Report Series No. 10, Georgetown University, Washington, D.C., 1969, p. 98.

of *Politburo* meetings is secret. What probably happens is that the *Politburo* becomes involved in fishery issues when they arise as part of larger domestic and foreign policy matters. The role of the *Politburo* has changed over the years. In the 1930's, Stalin alone decided most policy on both major and minor issues whereas Brezhnev depended on the consensus of the *Politburo* for decision-making. Gorbachev appears to go one step further and seems to encourage open policy discussions in the current meetings.[13]

The Secretariat of the Central Committee is the administrative head of the Party with control over personnel appointments. This includes the responsibility for filling positions in the Party and State Trade Unions. It has been speculated that the Secretariat implements some of the every day business of the *Politburo*.

The Central Committee is responsible for directing all Party activity.

> The CPSU guides the society's development primarily by elaborating and implementing a scientific strategy and tactic. It proceeds from a deep Marxist-Leninist analysis of the laws of social development, the sum totals of society's interests, its social sections and groups, a comprehensive study of the peculiarities of one or another stage of the country's development and changes in the international situation.[14]

While the Party decides policy and direction for the USSR, the Soviet Government has the legal responsibility for implementing these plans. The Government is made up of the following branches: the Supreme Soviet,[15] the President of the Supreme Soviet, the

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[13]The current *Politburo* appears to be losing some power. It used to meet every Thursday, now it meets only twice a month. Gorbachev has been able to hold his power base. On September 20, 1989, he removed two additional Conservatives from the *Politburo*, including Mr. V. Nokonov for failing in his agriculture position.

[14]Leonid Abalkin, The Strategy of Economic Development in the USSR, Progress Publishers, Moscow, 1987, pp. 10-11.

[15]Previously, the Supreme Soviet was the only body with the right to legislate. It was made up of two chambers, the Soviet of the Union and the Soviet of the Nationalities and meets twice a year for three to five days. The Presidium was the highest level of the Supreme Soviet and operated on a

Council of Ministers and its Presidium, Ministries and State Committees, and lower level organs of the the state.

The structure of the government recently went through a major overhaul. On March 26, 1989, 1,500 were up for election to the Congress of People's Deputies,[16] joined by 750 selected by public organizations ranging from the Communist Party to the Society of Stamp Collecting. Approximately 89% or 173 million registered voters took part in the election of the People's Deputies of the USSR elected in March, April and May 1989.

Under today's system the Congress of People's Deputies will be the "highest organ" of the government. Members are directly elected by the people as well as appointed. This body in turn elects 542 members to form the working parliament of the Supreme Soviet.[17]

The Supreme Soviet will set up a number of commissions to discuss all projects, add amendments to legislation, and draft new laws.[18] In theory, the Supreme Soviet could pass a law over the objections of the Party. This is an unlikely occurrence since 90% of the members are Communists. In addition, if a bill were to pass the Supreme Soviet, the People's Deputies still could veto the bill.

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continual basis with legislative powers when the Supreme Soviet was not in session. The body consisted of a Chairman, Deputy Chairman, and its membership overlapped with the Politburo. Most of the fishery related work in the Supreme Soviet was probably done in the Permanent and Ad Hoc Commissions. This body was responsible for examining and preparing draft legislation as well as ensuring that the drafts complied with Soviet law. They set up policy discussions and requested additional documentation from the Ministries. Subcommissions and Permanent Commissions were also created in the regional levels of government.

[16]Please refer to Appendix B for an outline of the past and present structure of the Soviet government.

[17]Members of the government and other high officials cannot be elected to the Supreme Soviet. The intention is that members of the Supreme Soviet will treat that membership as their main occupation so as to devote their full attention to the workings of the government. The new Supreme Soviet will meet for 8 months a year compared with the approximately six days a year previously and will supposedly hold open debates on proposed legislation.

[18]There are now 14 parliamentary committees with approximately 40 members each to create bills from the proposed drafts. Previously, the first drafts of new laws were drawn up in the Ministries, revised by the *apparatchiks*, and then rubber-stamped by the former Supreme Soviet.

Gorbachev is President of the new legislature which competes for authority with the Communist Party of which Gorbachev is General Secretary. Gorbachev is using the new body to maneuver around the Brezhnev Old Guard still strong in the Party hierarchy, while at the same time, using the *Politburo* to keep the radical element in the new Supreme Soviet under control. Now that the USSR has a Parliament, the Central Committee is losing control over decisions as the Parliament has become the primary decision-making body.[19]

The Council of Ministers[20] is elected by the Supreme Soviet and is wholly responsible to its electors. The same system has been adopted by all republics. More than half the members of the present Council of Ministers will be removed from their positions largely through retirement and attrition.[21]

The Ministries and State Committees coordinate and carry out policy decisions. According to Soviet sources, the overall number of Ministries dealing with basic branches of industry, construction, transportation, the agro-industrial and defense sectors will be reduced by almost 40%-from 52 to 32 Ministries.

Though the Ministries operate under the Party's directive and the laws of the Government, they are powerful because of their technical knowledge. This is especially true in fisheries where

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[19]Since it is dominated by Conservatives, the Central Committee is failing to reflect or keep pace with the sweeping changes in the USSR. One year ago, Gorbachev emasculated its Secretariat, causing *Politburo* members to worry that the Party was losing authority.

[20]Previously, the Council of Ministers was composed of Ministries, State Committees, Government Agencies and Councils, as well as the Chairman of the Republic Level Council of Ministers, and was responsible for direction and coordination of state organs. The Presidium of the Council of Ministers served as coordinator and also had overlapping membership with the *Politburo*. Some Western analysts thought that the Presidium would rely on subordinate Government agencies for specialists in fishery legislation.

[21]Nikolai Ryzhkov, "Report to the First Session of the USSR Supreme Soviet," *Pravda*, June 11, 1989 in Reprints from the Soviet Press , V. 49, N. 4, August 31, 1989, pp. 31-33. The USSR Council of Ministers will comprise 57 Ministries and committees; 25 existing ones will be disbanded. A State Commission of the USSR Council of Ministers for Economic Reform will be formed as a standing government body to oversee the day-to-day systems analysis.

technical knowledge is necessary in the decision-making process. As a result, the politicians are increasingly dependent on personnel--fishery economists and scientists--who sometimes are from outside the Communist Party structure for help in resolving issues and recommending policy.

Two categories of Ministries exist under the current system. The first is the All Union Ministry which directly manages all administrative concerns in its field regardless of geographic location. The second is the Union Republic Ministry which works through counterpart Ministries in each Republic.

Previously, Ministers were appointed by the Central Committee, and now they are appointed by the Congress of People's Deputy. Each Ministry has a Minister with several deputies reporting to him as well as a specially appointed Collegium to act in an advisory capacity. If there is a difference of opinion between the Minister and the Collegium, the Minister implements his decision, but must inform the Government-basically one-man management in conjunction with collegium decision-making. Under *Glasnost* more information on the ocean policy-making process is available, and it appears that the Ministries today are more powerful than at first thought by Western analysts.

The first Ministry of Fisheries was created in 1918 in response to the food crisis after the Revolution. State management of the fisheries was introduced under the auspices of the *Glavryba*, the Main Administration of the Fishing Industry, in October of that year. Associations were established in the Volga-Caspian, Caucasian, White Sea, Aral and Northern Lake Regions. These bought fish from the local fishermen in exchange for materials and credits towards future food and gear purchases.[22] The People's Commissariat of the Fishing Industry had been a division of the Food Industry, but became a separate organization in 1939. In May 1946, two Ministries of Fisheries were established, one for the Western and one for the Eastern regions. These were combined into the Union Republic Ministry of the Fishing Industry in December two years later.

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[22]Sysoev, Economics of the Soviet Fishing Industry, pp. 22-23.

Fisheries affairs were moved into the Ministry of Light and Food Industries in 1953, and then shifted into the Ministry of Foodstuffs. The Union Republic Ministry of the Fishing Industry was established in April of the following year.

Khrushchev abolished the ministry format in 1957.[23] In its stead, the Main Administration of Fisheries was formed under *Gosplan*, the State Planning Committee of the Council of Ministers of the USSR, in June 1960, and two years later, the State Committee for Fisheries was established with subordinate administrations in some regions. This was placed under the Council of the National Economy in January 1963, later to be reorganized back into the State Production Committee of Fisheries. The present form of the Ministry of Fisheries was established in October 1965.[24]

The current Ministry of Fisheries is responsible for the planning, administration and operations involving the fishing industry. The Ministry also runs fishery schools, manages repair and shipbuilding facilities, is involved in foreign relations, and determines the organization of labor and delivery of materials to its institutions. In the 1970's, the Ministry fought for the right to sell fish directly. Now the Ministry controls the export of fish which had been under the jurisdiction of the Ministry of Foreign Trade.[25]

Moscow dictates the production plan which the Ministry in turn allocates to each fleet in a ratio corresponding to the number of vessels-units in each fleet. The allocation is made primarily in monetary terms, but is also divided into categories such as types of fish. For example, to calculate a plan for a factory refrigeration trawler ship with a capacity of 30 tons per 24 hours, the amount of fish frozen per hour is multiplied by the designated number of working days. With 200 working days the plan for vessel A would

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[23]The system of ministries was re-established after Khrushchev's fall from power in 1964.

[24]Terese Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry," Ph.D. Dissertation, Johns Hopkins University, 1978, p. 186.

[25]Press Release May 1989. The Ministry of Foreign Trade has lost its monopoly. A permanent authority, the State Commission for Foreign Economic Relations, was created under the Council of Ministers.

be 6000 tons. If vessel A is affected by weather or breakdowns, the other vessels are responsible for completing the plan. So it is possible that a vessel's production target on a given voyage can exceed its actual capacity by 50% if other vessels in the flotilla are unable to meet their targets. Production targets are calculated on the basis of ungutted, untreated fish. Thus, 100 tons of raw fish are needed to produce 50 tons of salted fish.[26]

As a result of centralization, planning is often far removed from the management responsibility for fulfilling these targets. The setting of annual production targets at the regional and fishing fleet level is divorced from management responsibility for fulfilling those targets. It is important to note there is little motivation to improve the quality of the catch and reduce spoilage because the fleet management is not responsible for the marketing of the fish. Another consequence of the centralized supply system is that it places a wall between the producer and consumer. Under such a system, the consumer cannot influence production to satisfy his needs. In addition, the centralized supply system has led to stockpiling of goods and parts for repairs. At least 460 billion rubles worth of goods are hoarded by factories and enterprises. This hoarding slows down the economy and becomes production for production's sake, a problem the Government is trying to rectify under *Perestroika*.[27] Now under USSR Law on Public Enterprise, the planning process is more regional and less dependent on Moscow for direction.

As part of *Perestroika*, a major reorganization of the Ministry of Fisheries is scheduled to begin in 1990. Currently, The Ministry is divided into approximately 40 working administrations, including six main administrations, with 20 divisions located in Moscow. The lines of authority run from Moscow to the republic branch Ministries and to the regional main basin administrations and enterprises.

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[26]The different sources used for this dissertation state catch in terms of "tons" and/or "metric tons," sometimes interchangeably. I have used whichever wording was mentioned in that source. However, some of the sources state "tons" assuming the reader will think in metric.

[27]Aganbegyan, Inside *Perestroika*, pp. 32-37.

The Ministry of Fisheries is headed by N.I. Kotlyar.[28] He is assisted by the Deputy Minister, V.K. Zilanov, as well as five Deputy Ministers and the Collegium. Underneath the Minister are the five basin Chiefs and their staff: I.F. Denisenko in the Azov and Black Seas Region; A.A. Shaposhnikov in the Caspian Sea Region; N.T. Nosov in the Far Eastern Basin; S.V. Kireyev in the Northern Basin; and B.G. Sokolov in the Western Basin. The responsibility for Fish Breeding and the Inland Waters Main Administration is currently under Y.I. Stepanchikov. In addition to the basin administrations, the Minister is responsible for a number of departments including Protection and Reproduction of Fish Reserves and Regulations of Fishing; Stocking and Fishing in Interior Reservoirs; Design and Capital Construction Administration; Economic Planning Administration; Finance Administration; Fishing *Kolkhozes* Affairs Administration. The Ministry has its own finance and legal departments, communications and safety divisions, fish processing and sales divisions, foreign relations and protocol department, as well as a division entitled "Work with Sailors Traveling Abroad," and even a housekeeping administration.

The existing departments of the Ministry of Fisheries were reduced to 12 in September 1989. The First Deputy and the Council for Science and Techniques report directly to the Minister. Five Deputies report to the First Deputy. The new departments include divisions focusing on living resources--Department for Fish Stocks Reproduction, Environmental and Enforcement, the Department of Science and Technology and the Department of Economics; the fleet--Department of Fleet Operations, Department for Safety, Navigation, and Labor Standards Control; production--Department of production, Department of Marketing, Department of Industrial Supply, and Department of Industrial and Social Construction; as well as one for training and education--Department for Personnel, Education, and Social Development; and the Foreign Relations Department which

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[28]Please refer to Appendix C for three versions of the organizational chart of the Ministry of Fisheries.

oversees joint ventures through *Sovrybflot*, the foreign trading branch of the Ministry of Fisheries.

Five main basin administrations called *glavki* were established in 1962 to provide regional direction for the local fishing efforts as well as to serve as links with the central administration. The basin administrations are responsible for fulfilling their regional plans and are responsible for the economic development of all the organizations, enterprises, and fishery *kolkhozes* in their region. These bodies also have technical councils which act as advisory boards, consisting of senior staff members of the Ministry and functional administrations, scientists, experts, and inventors.

The five main administration basins are *Dalryba, Sevryba, Zapryba, Azcherryba,* and *Kaspryba*. The names are a combination of the name for the region, i.e. Caspian, and the Russian word for fish, *ryba*, which when combined form the name *Kaspryba*. Operations administered by these centers account for 90% of country's total catch and processing of fish food. *Dalryba* is responsible for the Far Eastern Basin, covering the Sea of Okhotsk, Bering Sea and the Pacific and Indian Oceans. It comprises the Maritime, Sakhalin, and Kamchatka administrations of the fishing industry as well as the Magadan, Okhotsk, Nizhne-Amur fishing industry trusts, the administration of the whaling flotillas, and the refrigeration fleet administration. The Vladivostok and Nakhodka fishing ports report to this administration.

Sevryba, the Northern Basin Administration, is responsible for the White, Barents and Norwegian Seas, and the North and Central Atlantic. It includes the Arkhangel and Karelian Administrations of the fishing industry, and operates in the Murmansk region. *Zapryba*, the Western Basin includes the Baltic, North Sea, Central and South Atlantic regions. This administration is also responsible for the Kalingrad, Lithuanian, Latvian, and Estonian regions and the ocean fishing fleet based in Leningrad.

Azcherryba, the Azov-Black Sea Administration, operates in the Black, Azov, Mediterranean and Red Seas and Indian Ocean. It includes the Krasnodar, Rostov, Georgian, Crimean and Black Sea Administrations of the fishing industry. *Kaspryba*, the Caspian Sea

Administration, operates in the Caspian Sea and includes responsibility for the Gurev, Turkmenian, Azerbaidzhan and Daghestan Administrations of the fishing industry.

All inland fisheries are handled by the Main Administration for Fishery Conservation and Fish Breeding and the Regulation of Fisheries. Regional questions related to the internal water bodies are handled by the Republican Ministries of the Fisheries, the Republican Main Administrations and administrations for the management of the fishing industry in internal water bodies and pond fishery.[29]

For scientific support, the Ministry has an impressive 135 laboratories serving the All-Union Research Institute of Marine Fisheries and Oceanography in Moscow, Murmansk, Kalingrad and Vladivostok. VNIRO, the All Union Scientific Research Institute of Fisheries and Oceanography, is located in Moscow. Other institutes include: AtlantNIRO, the Atlantic Scientific Research Institute in Kalingrad and the Baltic Institute of Fisheries in Riga, with responsibility for the Central and South Atlantic regions and the Baltic; PINRO, the Polar Scientific Research Institute, located in Arkhangel working in the North Atlantic and Polar regions and the Norwegian Sea; TINRO, the Pacific Scientific Research Institute, on the Pacific Ocean with branches in Kamchatka, Sakhalin, Amur and Magadan; AzcherNIRO, the Azov-Black Sea Scientific Research Institute, located in Kerch and conducting work in the Southern Seas and the Indian Ocean; KaspNIRO, the Caspian Scientific Research Institute, in Astrakhan with a branch in Daghestan for work on the Caspian Sea. In addition, there are eight scientific research and development institutes in the Ministry of Fisheries working on fishery equipment and instrumentation. These institutes conduct research on fisheries that may directly benefit industrial operations and be of scientific interest.

The Ministry also sponsors exhibitions. The first was *Inrybprom* 68 held in Leningrad in 1968 in an attempt to exhibit Soviet achievements in the industry as well as encourage foreign companies to display their technological advances in this area. The

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[29]Sysoev, Economics of the Soviet Fishing Industry, p. 49.

exhibit lasted two weeks and 75 million rubles in contracts were signed. The second exhibition held in 1975 was much larger and included participation from 400 organizations and 40 Ministries and departments as well as 284 foreign companies. During this one approximately twice the amount of contracts were signed worth over 150 million rubles.[30]

In 1985, *Inrybprom* 85 was held, a specialized international exhibition with the full title of "Modern Means of Reproduction and Exploitation of Water Biological Resources" whose objective was to expand relations and technical cooperation among Council for Mutual Economic Assistance (CMEA) countries and expand business ties with other countries for the cause of "peace and social progress.[31] Contributors included a number of Soviet All-Union foreign trade associations such as *Sudoimport*, *Techmashexport*, and *Prodintorg*. The next exhibition, *Inrybprom* 90, is scheduled for August 1990 in Leningrad.[32]

In addition to the Ministry of Fisheries, ocean policy issues have input from related ministries including the Ministries of the Maritime Fleet, Shipbuilding, Finance, Foreign Trade, Land Reclamation and Water Resources, as well as direct input from the Ministries of Defense and Agriculture.

Ocean science research is accomplished through the Ministry of Defense, Ministry of Fisheries, Ministry of Maritime Fleet, Ministry of Higher and Specialized Education and the Ministry of Geology. The USSR Academy of Sciences which is subordinate to the Council of Ministers conducts and coordinates science research. The P.P. Shirshov Institute of Oceanology at the USSR Academy of Sciences is a major center of oceanographic research. The Oceanographic Commission of the Academy of Sciences began work in 1951 and publishes the journal *Okeanologiia*. The State Committee for Science

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[30]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 387. Only one US company participated--the Xodar Corporation of Rhode Island.

[31]*Inrybprom* Marketing Materials, p. 3.

[32] Deputy Minister of Fisheries V.K. Zilanov Speech, August 11, 1989, Tape 1, translated by the Department of International Affairs under the Department of Commerce, Washington D.C.

and Technology uses a system of science councils to coordinate research across institutional lines.

Gosplan is in charge of long-term and current planning on a national scale. *Gosplan* is the instrument used to translate decisions into productivity and has the capability to monitor, plan, and coordinate the five year plans (FYP). Ministries develop and submit plans for *Gosplan* review. There is some personnel overlap between the Ministries and *Gosplan* which may indicate significant ministerial control over economic planning since the same bureaucrats who develop plans may be the same ones who approve them.[33]

Gosplan has a fisheries industry division and the Ministry retains a *Gosplan* liaison department. In addition, *Gosplan* coordinates all research and is in charge of the introduction of the achievements of science and technology into production.

Under *Perestroika*, the trend has been away from centralized decision-making to giving the regional administrations more autonomy and control over their industries. According to recent correspondence, the idea of centralized decision-making is "unreasonable." In addition, the USSR has begun the process of reorganizing and streamlining the administration area by deleting branches and reducing the central and republican apparatus by 30 to 50%. Under the new system, local Soviet enterprises can adopt their own plans that do not have to be approved by a higher authority. As a result, the centralized plan has lost a great deal of its importance as witnessed in the 1989 plan which has 52,000 fewer organizational headings.[34]

Summary

Although the Soviet Union in theory has an integrated ocean policy, the cumbersome bureaucratic system makes the organizational system unwieldy. Currently, there are 32 ministries in all sectors to carry out policy decisions. In addition

[33]It is interesting to note that Sysoev who is considered the authority in the USSR on the economics of Soviet fisheries is now the head of the *Gosplan*.

[34]Aganbegyan, Inside *Perestroika*, p. 99.

to the Ministry of Fisheries, other ministries are involved with ocean policy issues.

The first Ministry to deal directly with fisheries was created in 1918 as a response to the food crisis after the Revolution. The present Ministry was formed in 1965 and is currently responsible for the planning, administration and operations of the fishing industry and must meet certain budget and production objectives set by Moscow. The current organizational structure has been simplified to five divisions dealing with living resources, the fleet, production, training and education, and foreign relations. There are also five regional administrative basins which account for 90% of the country's total catch and processing.

With the introduction of *Perestroika*, the trend has been away from centralized decision-making to regional administration to help streamline the decision-making process.

Structure of the Soviet Fishing Industry

A study of the four phases of the "complex" fishing industry.

Despite the unwieldy bureaucracy, the Soviet fishing industry is currently producing over five million tons of food, the equivalent of 20% of the total animal protein consumed in the USSR. Per capita consumption of fish and fish products has grown from 7 kg in 1950 to over 18 kg currently and is expected to increase to 20 kilograms during the 1995-2000 plan. The Food Program has called for an increased development rate of 4.3-4.5 million tons of fish edibles by 1990, including 3.2 billion conventional cans of canned fish. In addition, the production of commercial fish in fish-breeding farms is expected to increase three fold by the early 1990's.[35] The USSR has estimated that the development of aquaculture in the Soviet shelf zone alone will yield more than 1 million tons of food products. As a result, mariculture is becoming one of the main reserves for the further development of fisheries and will greatly increase the chance for a successful implementation of the Soviet Food Program.[36]

In the 1970's, the fishing industry employed over 800,000 workers, 2,500 of whom were located in Moscow, and an additional 7,000 in fishery and related-scientific institutes. By 1988, the workforce was reduced by 38% with an additional 50% cut-back expected in 1990 to increase efficiency by streamlining the labor force.[37]

The fishing industry is "complex"[38] and can be divided into four phases: harvesting, processing, distributing, and consuming. The

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[35]*Inrybprom* Marketing Materials, pp. 3-6. The USSR intends to double its 1970's harvest by the 1990's as well as create 750,000 hectares of ponds and lakes for fish farming.

[36]*Ibid.*, p. 44.

[37]Conversation with Milan Kravanja, Branch Chief, NMFS Branch of Foreign Fisheries Analysis, Washington D.C. in July 1989. This has reduced the Moscow staff to less than 600 employees.

[38]Correspondence with Dr. V.A. Teplitsky, Chief Economist, AtlantNIRO, Kalingrad, dated August 23, 1989. The fishing industry includes fishing, transport, processing and auxiliary ships; sea fishing harbors and shore-based fish processing factories; ship repair facilities, shipyards, engineering works and container factories; and collective farms. Related industries include ship building, technical equipment, container making, net making, fleet service enterprises, scientific research and design institutes, and a system of schools.

catch is harvested by the Soviet fleet or produced through fish farming. Harvesting is complemented by the ship building, ship repair and net making industries, various port facilities, and the fleet of refrigeration vessels.

The extractive branch of the fishing industry is made up of state and cooperative enterprises. The state finances the state-owned enterprises, appoints the industry managers, as well as sets production and target wages. Renumeration is guaranteed and does not depend on results. Supposedly, Soviet fishermen receive only 40% of their pay in cash, the balance paid in issue by the Foreign Trade Bank.

A fishery *kolkhoz* is a voluntary producer cooperative of fishermen. Members themselves decide on their wages and make management decisions at general meetings. In 1923, the First All-Russian Constituent Fishermen's Congress in Moscow founded the All-Russian Cooperative Fishermen's Union. By 1928, over 63% of the individual fishermen in the USSR had joined a cooperative. Voluntary producer associations were set up in which vessels and gear became communal property. This allowed for the introduction of advanced technology, motorization of the fleet, and the introduction of highly productive gear. In 1931, the All-Union Association of Fishery *Kolkhozes* and Cooperative Organizations was set up with the primary objective of taking charge of the organization, operation and economic management of all fishery cooperatives.[39]

The government purchases raw and processed fish from the *kolkhoz* and pays a price set according to species, size, quality, season and region. In addition, the *kolkhoz* may receive additional payments for live fish and expeditionary expenses. Also, the state sometimes leases fishing vessels to the cooperatives.[40] The total

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[39]Sysoev, Economics of the Soviet Fishing Industry, pp. 71-74. In 1968, these accounted for 72.4% of the total catch.

[40]The cooperatives concentrate on the organization and technical improvement of fishing, while the state is responsible for the processing and marketing of the harvest.

number of vessels operated by the cooperative increased from 7,500 in 1968 to 9,000 by 1985.

Management of the *kolkhozes* was further centralized in the mid-1980's when the *Politburo* agreed to create one unified collective system, headed by an All Union Association. The All Union Association now directs all aspects of the collectives including the organization and distribution of capital investment, the provision of capital equipment and technology and the training of personnel. By the mid-1980's there were over 400 fishing collectives which accounted for 25% of the total Soviet catch. At that same time, the collectives owned 9,000 vessels and had a large production base which included docking facilities, shipyards and two design institutes.[41]

Kolkhozes earn a gross income of over 270 million rubles, of which the catching of raw fish, marine animals and marine products accounts for more than 65% of the total income.[42] To earn additional income, *kolkhozes* have begun processing operations. These process over 145,000 tons of raw fish and produce over 42,000 tons of fish products, and almost 15,000 million standard cans of fish preserves.[43]

The second aspect of harvesting is through mariculture. The artificial reproduction sector has been called the most important and most promising activity in the Ministry.[44] Even the cooperatives have begun to develop pond fisheries. Over 3,500 tons of pond fish are raised by more than 50 *kolkhozes* annually.[45]

Marine aquaculture or mariculture is a relatively new activity in the coastal zones of seas and oceans. Its purpose is to enhance

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[41]"Russians Set Target," Fishing News International, August 1986, p. 4.

[42]The percentage of total catch by cooperative varies by region. For example, cooperatives account for most of the fish caught in the Caspian, Azov-Black Sea, Aral-Balkhash and Leningrad regions. State fisheries have been dominant in the Murmansk, and Far Eastern regions.

[43]Sysoev, Economics of the Soviet Fishing Industry, p. 77.

[44]Correspondence with Dr. Natalia Mirovitskaya, Institute of World Economy and International Relations, Moscow, dated July 14, 1989.

[45]The development of pond fisheries is one of the main objectives of cooperatives in the Azov-Black Sea and Caspian Basins, and in the inland water bodies of the Ukraine.

biological productivity, commercial stock and catches, cultivate valuable fish, invertebrates, and algae. Pasture fish breeding is the principle direction of development in this area.[46] Since the early 1970's, research institutions in the USSR have studied organisms suitable for mariculture. In the Far East, these include salmon, Okhotsk Sea herring, scallops, mussels, oysters, and sea cucumbers. In the Azov-Black Sea Basin, grey mullet, flounder, sturgeon, mussels, oysters as well as the introduction of striped bass, steelhead, rainbow trout and Far East mullet have been studied by scientists to improve the productivity of fish farming. Salmon, sea trout, and rainbow trout have been studied in the Baltic Sea and salmon, wolf fish, halibut, White Sea herring, and mussels in the Northern basin.[47]

Fish farming is necessary to supplement the natural fish supply adversely affected by water pollution and man-made construction.[48]

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[46]This is the cultivation of diadromous and semimigratory fish mainly salmonids and sturgeons. The fry are released from hatcheries into the sea to reach maturity.

[47]*Inrybprom* Marketing Materials, pp. 41-42.

[48]Dick Thompson, "The Greening of the U.S.S.R.," Time Magazine, January 2, 1989, pp. 68-69.

> The Soviet Union is an environmentalist's nightmare....The riverbed of the Neva, which meanders beside the magnificent Hermitage in Leningrad is covered with a thick layer of oil. Ill advised dam construction and inappropriate irrigation projects have caused the level of the Aral Sea to drop 40 feet. It is possible that this body of water, the world's sixth largest sea, will not exist in 20 years....Worrisome numbers of dead sturgeon are floating atop the polluted Volga River, threatening the Soviets' prestigious caviar supply. Resorts along the Black Sea have banned swimming after the government's warning that the waters are contaminated with dysentery and typhoid germs.

Interest in the environment is relatively new to the Soviet Union. Under Stalin, rivers and forests were destroyed in the rush to industrialize to transform raw materials into material wealth. There was no premium on efficiency or no environmental concerns. In 1968, as many as 26,489 enterprises were found to discharge untreated waste into the water bodies of the USSR.

Siberia's Lake Baikal basin has suffered greatly. The lake holds 80% of the country's fresh water. Over 75% of the lake's 2,500 fish and plant species including the Baikal nerpa, a fresh water seal, are unknown anywhere else in

Spawning grounds are often destroyed by the building of dams which cut off spawning areas from feeding areas. The Ministry has taken measures to preserve Caspian sturgeon, white salmon, Far Eastern salmon, Kamchatka cod, and Kamchatka crab in major waterways of the Northwest.[49]

Fish farming began in Russia in 1854 with experiments on fertilization of the spawn of trout by V.P. Vraskii. He built the first salmon and whitefish hatchery in 1857 on the Pestovka River in Novgorod Province. Similar hatcheries were subsequently built in other areas for Atlantic and Baltic salmon and sturgeon. Until the Soviets came into power in 1917, fish culture was carried out by volunteer societies and individuals. Since 1934, fish culture and regulation has been carried out by the Central Board for the Conservation and Replenishment of Fish Stocks and by the Regulation of Fishing of the Ministry of Fisheries of the USSR.

Such reclamation projects as water purification, control of silting and vegetation overgrowth, construction of fish passes and fish lifts in dams of hydraulic engineering installations, and the equipping of intake structures with fish protection devices, have restored and improved natural conditions for the breeding and feeding of the fish and have created a constant water system in the spawning grounds. Passage of fish to spawning grounds is ensured by cleaning and deepening the channels and by eliminating obstructions on rivers. If natural spawning grounds are scarce, artificial ones, both permanent and floating, are built.

Currently, there are 183 active fish farms including 97 in the system of the Ministry of Fisheries. Fifty percent of the fish farms

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the world. The Baikalsh Pulp Plant was erected here 30 years ago and currently produces 200,000 tons of cellulose fibers a year and directly discharges its waste into the lake creating a polluted zone 23 miles wide.

Gorbachev has shown special concern for the environment. He recently reorganized a number of departments into *Goskompriroda*, the State Committee for the Protection of the Environment. Gorbachev dedicated US$ 24 billion toward cleaning up the environment in 1989. The amount is expected to increase to over US$ 46 billion annually during the 1990's.

[49]Also measures have been taken to protect the Omul salmon in Baikal. The catches of these salmon have stabilized at six million tons and are expected to increase as the stock continues to recover.

operate in the open sea. These farms breed over 40 varieties of commercially valuable fish and over 8.5 billion fry are released into natural waterways each year. This figure includes 120-125 million sturgeon, 800 million salmon, over 100 million white fish and up to seven billion thick net and vegetation eating fry.[50]

Fish farms are now equipped with modern appliances, refrigerators and compressors, pumping houses, feed processing houses, tanks and cages, and large pond areas. The Caspian receives 90 million sturgeon young and the Azov basin over 44 million. Despite reduced spawning areas, the hatchery reproduction in these two areas yield up to 50% of the total catch of beluga sturgeon, 20% of sturgeon and 7% of stellate sturgeon. The fisheries in the Northern Caspian are provided with airlifting and fish pumping plants for pumping fish to transportation tanks and water channels for transportation from the hatcheries to the nurseries. In 1984, a productive hatching apparatus,"Osetr," came into use. New production methods increased an additional 10 million sturgeon.[51]

The artificial reproduction of salmonids is carried out on a large scale in the Far East, Caspian, Barents, White, Baltic, and Black Seas. The young salmon, pink salmon, coho salmon, sockeye salmon, Atlantic and Caspian salmon are bred in these waters.

Acclimization, the process of planting fish into new water bodies, produces over 30,000 tons of fish annually. The first acclimization plan in the world was drawn up in the USSR 1980. This included the successful acclimization of Far Eastern pink salmon in the basin of the Barents Sea. Since then, the Siberian whitefish has been introduced to additional bodies of water in the USSR. In addition, pike perch has been introduced in the water bodies of Karelia, the Urals, Siberia, and Kazakhstan. Bream has been successfully planted in the lakes of the Urals and Siberia. Silver carp and grass carp are now common inhabitants of Central Asia and the European part of the USSR. Presently, there are acclimization stations in the Far North, the Baltic Sea region, Siberia, Central Asia,

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[50]Press Release May 19, 1989.

[51]*Inrybprom* Marketing Materials, p. 11.

Kazakhstan, Ukraine, Azerbaijan, and Soviet Georgia. Each year these stations carry out over 300 plantings of 40 varieties of fish and 13 varieties of live food organisms into more than 200 bodies of water across the USSR.[52]

On the inland waterways, the government has focused a good deal of attention on the development of pond fisheries. Pond fish culture involves the breeding and raising of fish in specially constructed ponds. Man controls the entire process--from breeding to obtaining a marketable product. Pond fishing is economical as the ponds are usually located near population centers which reduces transportation costs.[53] In addition, the use of live tanks makes it possible to supply pond fish more regularly thus reducing the seasonality of the fish supply.

Fish are raised in ponds and in integrated-use bodies of water, peat open-cut mines filled with water, and the warm water from cooling reservoirs of state regional power plants. The fish most often raised in these ponds include carp[54] and trout. Pike, catfish, mullet, and eels also can be raised in ponds. Pond fish culture was primarily established in the Ukraine,[55] and later introduced in the RSFSR and Belorussia. Currently, the USSR has 9,000 *kolkhoz* and *sovkhoz*, state farm, pond fisheries and 230 specialized state farms attached to the Ministry of Fisheries. These ponds occupy an area of about 124,000 hectares.

To improve efficiency in all inland water fish farming, the USSR established a commercial pedigreed fish stock breeding and genetic center. In addition, the use of mineral fertilizers and the introduction of chemical stimulants helped increase the fish yield increase 1.3 times in ten years.[56] Scientific organizations have worked out formulation of effective feeds for fish of various age

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[52]*Ibid.*, p. 12.

[53]The average transport distance does not exceed 200 km.

[54]A.T. Bolotov was the first to build special ponds for rearing carp.

[55]Fish ponds existed in Russia in the 12th and 13th centuries in monasteries.

[56]*Inrybprom* Marketing Materials, p. 17.

groups in mariculture. Formula feed plants have been built within the Ministry of Fisheries.

New directions in fish culture are being developed such as lake and industrial methods of breeding in cribs and basins by applying warm water. Using this method, the production of marketable fish from industrial hatcheries increased 2.6 times during the 1980's. In addition, scientists are working on perfecting a new way of breeding marketable fish and planting stock under conditions of circulating water systems. Methods are also being worked on to further mechanize fish breeding processes including water vegetation control, conveying, storing and distributing feed and catching fish bred in hatcheries. Hatcheries are provided with feed dispensers, reed cutters, mechanized hopper-type storehouses, and container installations for conveying live fish.

In the future, the USSR will begin focusing on the development of commercial cage fish farms and industrial shore tank farms based on the intensive feeding of fish with artificial fodder and the high-level mechanization of fish-breeding processes. This method of breeding is demonstrated by the Banga and Saarekalur collective farms.[57]

Once harvested by the fishing fleet or through mariculture operations, the catch is processed either aboard ship or in land-based fish processing complexes. Processing enterprises include a diverse number of operations such as refrigeration, canning, salting, smoking, and drying. Before the Revolution, there was no equipment to process in bulk except for salting which was done by an army of seasonal workers. By 1913, only six cold storage plants and several small canneries existed which produced a total of 9.6 million standard tins of fish products. By the late 1960's, the number of cans produced increased 1,000 times.[58] Currently, the fishing industry also produces 767,000 tons of fish meal, 119,000 tons of fish fat and 768,000 tons of general feed production for animal husbandry.[59]

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[57]*Ibid.*, p. 43.

[58]Sysoev, Economics of the Soviet Fishing Industry, p. 142.

[59]Press Release May 1989.

Over 70% of the total harvest is processed at sea. Since raw fish cannot remain unprocessed for any great length of time without spoiling, the optimum solution is for the processing industry to be brought as close as possible to where the fish is caught. Onboard ship this is done two ways. First, catch is combined with processing on the same vessel. The downside of this technique is that at its peak season the crews are not always able to process the fish fast enough and so have to lose valuable fishing time which reduces the size of the catch. A more efficient method is to process the harvest on specially designed factory ships. This is the more efficient method, since the fleet can now harvest and process simultaneously.

The development of the fish processing fleet is closely linked with the herring fishery in the North Atlantic. Several month long herring expeditions needed motherships to accept fish products from the catcher vessels and provide technical and medical assistance supplies to the other vessels. As a result, dry cargo ships were refitted in the late 1950's to act as herring motherships.

The Soviet fleet now includes fish processing motherships and refrigerated factory ships. Factory ships including vessels of the *Andrei Zakharov* and *Natal'ya Kovshova* classes, as well as large stern factory trawlers (BMRTs), currently account for over 40% of the canning capacity in the USSR.

The catch is processed by a fish dressing machine which mechanically dismembers the fish. Gutting, sectioning and filleting are carried out by fixed or rotating blades. The machines are divided into conveyor, rotary and drum type designs. Different machines are made to process different fish. For instance, the IRM-3 fish dressing machine was designed to process fresh Baltic herring and can process as many as 200 fish a minute. A promising direction in the development of fish dressing equipment is the production of universal multiple-operation machines with interchangeable assemblies.

Refrigeration is used to keep fish fresh in route to port and eventually to the consumer. The introduction of modern refrigeration technology is one way the Soviets hope to reduce loss of catch and make the processing of edible food more efficient.

Refrigeration capacity grew 10 times during the last 30 years on Soviet fishing vessels.

Fishing ports are an important part of the distribution process. The effective use of the fleet is determined by the adequate development of these facilities. The unit-load delivery of fish products largely contributes to a more efficient and shorter port visit, for it ensures higher volume of loading and uses fewer workers, reducing ship unloading time and expediting the harvest to market. The bindless method of unit-load shipment involves the use of side fork lifts in handling unit loads of frozen fish products. The electric fork lifts are used for discharging unit-load products and for loading railroad cars.

The catch is packaged onboard ship or at onshore processing facilities for transportation to the consumer. There may be up to 10 transfers of a single shipment during this process. Thus shipping and packing materials are also vital segment of the distribution process. The fishing industry is the principle user of shipping cartons in the national economy. Production of packing materials include barrels, bags, cases, boxes, metal and other packing materials to prevent spoilage.[60] The industry uses millions of wooden boxes and barrels and hundreds of millions of cans each year. Packing materials are made of polyethylene, cellophane, polystyrene, and aluminum foil. The Soviets have been trying to improve packaging materials and have designed a variety of machines and devices which mechanize and automate these processes.

Once the catch is packaged for distribution, the Ministries have tried to coordinate operations for the faster transportation of fish to the market. However, transportation remains a key problem in this stage leading Soviet consumers to complain about the poor quality of fish products.[61] This is the result of the distribution network where

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[60]The industry has its own cask making factories. In spite of efforts to introduce new materials such as polymers, wooden casks will continue to be used to pack, convey and store salted fish products aboard ships and at shore based facilities for a long time to come because of the availability of wood in the USSR.

[61]State standards for the output of the fishing industry are approved by the Committee of Standards, Measures and Measuring Instruments under the

unconfirmed reports state that the fish is not kept at a constant -30 degrees C as necessary. This results in a high percentage of spoilage especially for the Far Eastern harvest as over 50% of the catch is transported by train to the population centers in Moscow and Leningrad.[62] As a result, the fleet is forced to catch three to four times as much to compensate for the resulting spoilage. The USSR is trying to improve the efficiency of the distribution system by adding more processing and freezing plants. A short term solution has been for motherships to spend months in port as a floating storage plant in those ports where storage is a problem.[63]

To expedite the distribution process, the government is also trying to improve the rail system. In a recent interview, the Minister of Railways, Nikolai Konarev announced he would introduce special express schedules for trains carrying foodstuffs. Currently, 7,000 to 9,000 rail cars stand idle and up to 12,000 additional cars wait to be unloaded because of mismanagement and the lack of communication between Ministries.[64]

Previously, the the Ministry of Fisheries was responsible only for the extraction and processing stages. The finished product was marketed by the Ministry of Domestic Trade. Now the Ministry has full responsibility including export and import operations.[65] Fish and

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Council of Ministers of the USSR, which has the sole right of publishing all standards of the USSR.

[62]United States Department of Commerce, NOAA, NMFS, Office of International Affairs, Foreign Fisheries Analysis Branch, Soviet-Latin American Fishery Relations, 1961-1989, Government Printing Office, Washington D.C., May 5, 1985, p. 12.

[63]*Ibid.*

[64]Conversation with Captain Tkachenko in July 1989.

[65]"USSR Council of Ministers' Resolution on Further Development of Foreign-Economic Activities of State, Cooperative and other Publicly-owned Enterprises, Amalgamations, and Organizations," *Izvestia*, December 9, 1988 in Reprints from the Soviet Press, V. 48, N. 2, January 30, 1989, p. 5.

> To greatly increase foreign-economic contacts, actively involve them in enterprises, amalgamations, production cooperatives and other organizations, and to further streamline the practical patterns of foreign-economic relations on the basis of actually paying their way in hard currency and consistent use of commodity-money relations, the USSR Council of Ministers deems it

fish products earn the USSR hard currency; the export of canned fish and luxury items such as salmon, crab-meat and caviar earned 89 million rubles in 1984.[66]

A mini-revolution is taking place in Soviet foreign trade.[67] Previously, a few dozen specialist foreign trade organizations (FTOs) had a near monopoly of imports and exports. The cautious decentralization started in 1987. At that time, trading rights were given to 70 large factories and 20 ministries. Since April 1989, all Soviet enterprises can apply to register for independent trading rights.[68] However, the FTOs will still monopolize trade in bulk commodities such as fuel and other raw materials which account for more than 80% of Soviet exports to the West.

The Ministry of Fisheries has expanded its control for managing production and trading fish products, which includes delivery of fish to the retail trade system. It has developed a system of large specialized shops for distribution of fish and fish products to the consumer. More than 250 fish shops are functioning at this time, including 130 specialized "Ocean" shops. These establishments are used as marketing tools to introduce new species to the consumer and try to promote increased consumption of fish in the USSR. The shops arrange regular tastings of new types of fish products and so are a sort of laboratory for studying consumer taste. These programs are necessary because Soviet consumers prefer fresh water fish. The Caspian and Azov seas were the traditional grounds and set consumer tastes. When new varieties of ocean fish were introduced in the 1940's, consumers labelled these "Ishkov's Folly" after the

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> necessary to grant, starting April 1, 1989, the right of direct export-import transactions to all enterprises, amalgamations, production cooperatives (including all cooperatives engaged in production, and unions and amalgamations thereof), and other organizations whose products, services and other activities are competitive at the foreign market.

[66]"Soviet Fishing off the Developing Countries," Background Brief, Foreign and Commonwealth Office, London, December 1985, p. 3.

[67]Aganbegyan, Inside *Perestroika*, pp. 177-178.

[68]Over 5,000 have already been registered.

Minister of Fisheries. Even today few Soviets enjoy shell fish.[69] In addition to the specialized shops, the Government also manages 100 specialized public catering establishments, including restaurants and cafeterias.[70] These marketing efforts have helped to increase the consumption rate from 17 kg in 1974 to 18 kg currently. The USSR expects consumption rates to increase to 19 kg by the 1990's. The increased consumption rate has resulted in a concurrent increase in the rate of fishmeal production since the industry is producing more finished fish products such as fillets and selling fewer whole frozen fish. The waste from the processing is used for fishmeal.[71]

The government forecast for an increased consumption rate may be very optimistic. Several factors limit the growth of the consumption rate. The first is the availability of fish. Stock depletions and increased coastal jurisdiction have changed traditional Soviet fishing patterns. The second factor is that the USSR now harvests less desirable fish, switching from the popular herring, cod and red fish to pollack, hake, and krill. To the Soviet consumer, the higher the fat content of the fish, the more desirable it is, so salmon, sturgeon, Danube catfish, pike, eel, and cod are considered to be good eating fish. In addition, cultural and geographical factors affect consumption.[72] Despite these limiting factors, the Soviet government hopes that its marketing and educational programs will encourage

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[69]Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry," p. 296.

[70]*Inrybprom* Marketing Materials, p. 169.

[71]Correspondence with Dr. V.A. Teplitsky dated August 23, 1989.

> On the whole, the reason is that recently in the Soviet fishing industry there is a sharp rise of production of frozen dressed fish, fillets, Alaskan pollack, shrimp meat, culinary products, etc., the production raw material consumption of which is so much higher than in the case of whole-frozen fish produced formerly. At the same time it is connected with increase of fish meal production from fish waste. Portion of raw fish used for food production has even raised by 18 points for recent 10 years.

[72]Sysoev, Economics of the Soviet Fishing Industry, p. 5. For example, Soviet Georgia consumes 75% less fish than in the rest of the Soviet Union on an average annual basis.

consumers to appreciate the protein content of fish and increase their consumption of this vitamin rich food.[73]

Summary

The Soviet fishing industry is overseen by the Ministry of Fisheries to supply vital animal protein to the Soviet population. Fishing is a "complex" industry divided into four phases-harvesting, processing, distributing, consuming.

Due to the pollution of the water, overfishing, and the introduction of increased coastal jurisdiction worldwide, new avenues of man-controlled reproduction have become a necessity. These include mariculture, fish farming and acclimization programs. Pond fisheries have become an important source of harvest in the inland bodies of water.

Once harvested, processing is primarily handled by state-owned enterprises which often lack modern technology. Thus, much of the harvest is lost due to lack of refrigeration onboard ships and/or inadequate port facilities.

The Ministry of Fisheries has also become involved in the marketing of the harvest to promote increased consumer consumption, as fish are a much cheaper commodity in the USSR than beef. In addition, the fishing industry is currently profitable which translates into much needed hard currency.

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[73] *Ibid*, p. 4. The standard diet is determined by the Institute of Nutrition of the Academy of Medical Sciences of the USSR. The diet takes into account economic (population size and incomes,quantity and structure of the production of consumer goods), social (demographic and professional composition of the population), natural (climatic and geographical living conditions and the state of the population's health) and historical factors (traditions, holidays, habits of the population).

Fish supply animal proteins and essential amino acids to the population. Fish proteins are more easily digestible than meat proteins and account for 7% of the total animal proteins provided for by the standard. For example, 4.3 million tons of fish are equivalent to 6.2 million tons of cattle in terms of live weight or about 17 million head of cattle. The fat content is also an important component for nutritional consideration. The fat content in fish meat ranges from 0.3 to 30% and is absorbed faster and more completely than animal fat.

Soviet Fishing Fleet

A study of the fishing fleet, including its history, equipment, flotilla concept, and its present day status.

The modern Soviet fishing fleet evolved from 12 converted minesweepers in 1920[74] to one of over 3,900 vessels with a combined gross registered tonnage (GRT) of 3.5 million, the largest in the world.[75] One flotilla may now include as many as 200 medium 500-ton trawlers; 40 stern-factory 3,000 deadweight ton (DWT) trawlers; and 30 motherships with up to 15,000 DWT, supported by auxiliary and research vessels.[76] Soviet fishing fleets are located throughout the USSR in Murmansk, Arkhangel, Leningrad, Tallin, Riga, Liepaja, Klaipeda, Kalingrad, Odessa, Nikolaev, Sevastopol, Kerch, and Poti with destinations from the Arctic to the Antarctic.[77]

Before the extensions of coastal jurisdiction in the 1970's, two assumptions were made--the marine resources were unlimited, and the USSR would have unrestricted access to stocks. These assumptions worked through the 1970's when the size of the Soviet harvest was limited primarily by the fleet's technical capabilities.[78] However, the general introduction of the Exclusive Economic Zone (EEZ) during this period changed the Soviet strategy from one of

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[74]Sysoev, Economics of the Soviet Fishing Industry, pp. 19-20. During Czarist times, the "motherships" were sailing boats in the Caspian Sea and the Sea of Azov. These supported the *ela*, a fishing vessel with an upper deck, and a *shnyaka*, another type of small fishing vessel used primarily in the European North. The catch was unloaded by hand, and then transported to the nearby market in wheel barrows. Over 80% of the fish were caught by small fisheries employing approximately 205,000 fishermen. Every season 50% of the nets had to be replaced at a cost of 25% of gross income.

[75]Please refer to Appendix D for a comparison of world tonnage from 1980-1987.

[76]Press Release May 1989. This includes vessels of 100 GRT and above. The actual total number of fishing vessels and support ships is over 24,000 including 2000 ships of 300 GRT or more.

[77]Please refer to Appendix E for background information on the Soviet Merchant Marine and Navy.

[78]Sysoev, Economics of the Soviet Fishing Industry, pp. 177-181. Traditionally, the Soviet Union did not necessarily look at its long distance fleet in terms of profit, but rather as a way to feed its population, i.e. to produce cheaper animal protein than available from its failed agriculture system. Large vessels offer many advantages-for example the catch per crew member and per 1 hp of the main engine is 50-100% higher on large vessels.

resource abundance to resource scarcity.[79] The scarcity has led to the trend of building larger vessels capable of fishing in remote areas of the high seas.

The fleet currently is composed of large trawlers including those of the *Pulkovskii, Meridian,* and *Gorizont* classes which can be used within a continental slope and also in remote areas of the high seas. Fish canning factory ships and processing motherships, such as the *Rybatskaya Slava,* are also part of the fleet and show high performance. Special refrigerator transport ships such as the *Almazny Bereg* service the fishing expeditions. From Poland, the USSR bought the large trawler, the *Ivan Bochkov,* and the mothership, the *Konstitutsiya.*

Recently, the USSR has ordered three 179 meters fish factory vessels from *Rauma-Repola.* A 152 person crew runs each vessel while 368 factory employees work two 11 hour shifts. The resulting products are then blanched, spiced, sterilized and packed in cartons. The vessels are self supporting for 75 days and have a hospital, movie theater, disco, barber shop and bank.[80]

The years of war and political purges devastated the fishing fleet. Approximately 5,000 fishing vessels were destroyed during World War 11, including the entire Caspian and Black Seas fleets, as well as the one based in Murmansk. After the War, the industry concentrated on developing its distant water fishing fleet and by 1966 the fleet was capable of sailing almost 3,000 miles to a fishing ground.[81]

Two innovations contributed to the increased long distance capability of the Soviet fleet. The first was the creation of the stern factory ship developed by the British. This type of vessel could handle a larger quantity of fish and could spend up to one year at

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[79]Vladimir Kaczynski, "The 200 Mile EEZ and Soviet Fisheries in the North Pacific Ocean: An Economic Assessment," Paper prepared for the Law of the Sea Institute, Honolulu, HI, August 5, 1987, p. 4.

[80]"Soviet Ships Close in on the Crab Market," Design News, February 9, 1987, p. 41.

[81]Coastal pollution and overfishing of haddock, cod, ocean perch, and salmon in the closer areas of the Barents Sea, Sea of Japan and the Sea of Okhotsk were major factors in the development of the distant water fleet.

sea. Previously, nets had been hauled in over the side so a vessel would become unstable if the catch were too large. With the new design, the catch can be brought aboard through a stern ramp giving the vessel more stability and allowing the use of larger nets. As a result, the catch from a stern trawler is about six times as great as that of a side trawler. The stern factory vessels also have canning and freezing equipment for immediate processing of the fish. Lacking the technology to copy this design, the USSR ordered 24 trawlers from West Germany, but has since developed the capability to create its own. By the mid-1970's, 15% of all Soviet high seas vessels were large stern factory trawlers.[82]

The second factor was the development of the flotilla fishing concept by the Japanese. To remain at sea for extended periods of time, fishing vessels need fuel, water, extra gear and parts, medical supplies, and even recreational activities. The fishing expeditions often last six to nine months so the flotilla was created consisting of five basic types of ships: motherships, fish processing and carrier vessels, factory trawlers, side trawlers and special function vessels. A flotilla can have as many as 100 stern trawlers which, in addition to harvesting the catch, usually provide their own processing and transportation services. Auxiliary ships also service the flotilla and include scientific research vessels, salvage tugboats, and tankers to supply the mothership with fuel.[83]

The mothership is the head of the flotilla and can carry piggyback six to 14 small catcher boats. These ships can also receive and process the catch before transferring it to refrigeration and cargo ships for transportation to port. The mothership also provides communication facilities, medical and dental services, adequate baths and showers, and recreation activities.

The first Soviet mothership was designed in 1958 and was part of the *Severodvinsk* class built in Gdansk. Other classes of motherships were designed for the USSR and built in the mid-1960s

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[82]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 414.

[83]Conversation with Captain Tkachenko.

in Poland, West Germany and Japan. Tuna motherships like the *Leninskii Luch* and *Krasnyi Luch* were introduced in 1964.

In 1972, the USSR built the world's largest mothership, the *Vostok*, which was designed for independent operation in fishing grounds 10,000 to 12,000 km away from its base port. The ship has a 43,400 ton displacement, and the overall length is 224 meters. The power of the main gas turbine is 19 megawatts, and the speed is 18.5 knots or approximately 34 miles an hour. The ship carries a crew of 600, in addition to the 14 catching vessels. These catching vessels are outfitted for bottom and mid water trawls and for purse seining.

The catching vessels remain on board the carrier ship in route to the fishing grounds. Such a piggyback arrangement cuts down the time needed to move the flotilla to the fishing grounds and deliver catching vessels to distant areas. Once at the fishing grounds, the carrier vessel launches the catching vessels, all of which which are equipped for independent fishing. If the fishing is poor, the carrier vessel can lift the catching boats back on board and move to a new ground in a relatively short period of time. This combination of large factory trawlers and highly mobile support vessels allows the fishing industry to follow the fish which often involves frequent shifting of operations and target species.[84]

The catcher vessels unload the harvest to fish processing refrigerator ships which freeze the catch and then deliver it to port or to a transport vessel. Handling the catch on the processing vessel is done automatically using large derricks to lift the catch from the catcher vessel and transfer it to elevators in the hold of the processing vessel. Once inside the hold, conveyor belts handle and sort the catch. These refrigerator ships may be equipped with devices for removing the head and viscera of fish, for filleting, and for processing waste products. Some even have a stern slip for hauling in trawls containing catch left by the catching vessels. These vessels can be over 130 meters with a hold capacity of 5,000 cubic meters and a speed of 16 knots. They can freeze up to 100 tons of

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[84]Kaczynski, "The 200 Mile EEZ and Soviet Fisheries in the North Pacific Ocean: An Economic Assessment," p. 7.

fish daily. However, with the appearance of factory ships and large trawlers equipped with powerful refrigeration units, the importance of the fish processing refrigerator ships has declined.[85]

During the 1950's and 1960's large freezer trawlers of the *Pushkin*, *Mayakovskii*, and *Leskov* classes were introduced. The major advantage of the *Pushkin* class was its ability to operate in distant waters and to withstand wind force of nine, ordinary trawlers can withstand six. The average catch per vessel in 1968 was 6,050 tons amounting to a profit of 543,200 rubles and a recoupment period of 4.7 years. The vessel has facilities to process the entire harvest.[86]

The large stern factory trawler of the *Caikovskii* class has a refrigeration capacity of 45 tons a day and a fish meal installation processing 35 tons of raw material a day. In addition, the *Mintai* class was developed for the production of fish meal with a refrigeration capacity of 30 tons, and can process up to 70 tons of raw fish into fish meal each day. As the name suggests, the *Tropik* class was built for operation in the tropics and is equipped with trawling and purse seining equipment. In 1967, the *Tropik* class was replaced by the *Atlantik* version.

The refrigerated factory ships of the *Grumant* and *Rembrandt* class were built to operate in the distant waters and could act as catcher vessels as well as accept fish from medium size catcher boats. At the height of the season the vessels can be used also to process fish. This type of vessel caught 150,000 tons of fish in 1968, earning 1.2 million rubles with a recoupment period of 2.6 years. In 1966, a unique canning factory trawler of the *Natal'ya Koshova* class was introduced. The ship is equipped for bottom and midwater trawling and for processing the catch into cans, frozen fish and fish meal. The average profit for this type of vessel was 1.5 million rubles in 1968, and the recoupment period was approximately 3 years.

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[85]*Inrybprom* Marketing Materials, pp. 37-38.

[86]Conversation with Captain Tkachenko. These vessels are more maneuverable than side trawlers since the stern ramps make it possible to simplify and quicken the shooting and hauling of trawls as it is not necessary to circle while the trawl is shot or hauled in.

The flotilla is also made up of specially designed transport vessels. The greater the distance, the more economical the transport vessels are. Transporting one ton of frozen fish from the Atlantic Coast of Canada to Murmansk costs one third the price on a specialized transport vessel than it does on a large factory stern trawler. Refrigerated transport vessels allow the catching and processing vessels to stay out longer as the transport ships receive fish and deliver the catch to port. On the return trip, they take back supplies of fuel, water and provisions to the expeditionary fleet. The size of these transport vessels varies. The *Kustanai* has a cargo capacity of 800 tons and a hold capacity of 1,885 cubic meters while the *Atlaiskie Gory* is 9,550 gross registered tons and a cargo capacity of 7,400 tons and a hold capacity of 11,954 cubic meters.[87]

Trawlers are the backbone of the flotilla. The current stern trawlers evolved from small wooden trawlers (MRT) built in the 1940's with engines of 150-240 hp. These vessels quickly wore out and became obsolete and were replaced by a small freezer trawler (MRTR) of the *Kareliya* class. These newer models have a metal hull and are used primarily for fishing in the Baltic Sea for herring, sprat, and demersal fish and for herring in the North Sea. The medium seiner was designed to use of purse seines, drift nets, and Danish seines. This type of vessel has been used primarily for fishing grey mullets, horse mackerel and Atlantic bonito in the Black Sea and for sprat with electric light in the Caspian Sea. Vessels of the *Kaspii* class were constructed for catching, processing and transportation of Caspian kilka. These vessels are equipped with 1,000-1,200 hp and a cargo capacity of 350 tons and can attain a speed of 11 knots. The refrigeration capacity is 25 tons a day.[88]

Small side trawlers, once the major part of the fleet, have been rapidly replaced by more updated trawlers. Some classes have refrigeration holds, and facilities to produce semi-processed fishmeal

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[87]Sysoev, Economics of the Soviet Fishing Industry, p. 170.

[88]Other similar vessels have been designed with the capacity of 225-300 hp seiners suitable for stern trawling as well as additional medium 225 hp seiners, small 225 hp seiners with a cargo capacity of 10-12 tons and 50-150 hp fishing boats for inland fishing, storage lakes and rivers.

and fish oil. Other trawler classes include medium stern trawlers and side trawlers, again some with refrigeration and some with freezer capabilities. Up until 1967, the medium trawlers were side trawlers, but this has changed and a medium stern trawler has been developed to operate in the temperate and tropical climates of the world oceans.[89]

The SRT-300, SRT-400, and SRTR-540 and SRTR-800 are medium sized fishing vessels built between 1947 and 1957. The SRT was specifically built for herring fishing in the North Atlantic. In 1968 these vessels caught almost 16% of the fleet's total catch with an average catch per vessel of 1,030 tons. The main shortcoming of the SRT is a lack of refrigeration and hold capacity, and their power plants are relatively weak. As a result, the SRTR *Okean* class was developed with refrigeration capacity. A further improvement on the medium sized trawler was the SRTM of the *Mayak* class which could fish with drift nets, bottom and midwater trawls in the Atlantic, Pacific and Indian Oceans. This class was equipped with quick freeze capacity of six tons per day.[90]

Some ships have been designed to operate in specific geographical areas such as the RS-300 seiners built to operate in the Sea of Azov, the Black Sea and the Caspian Sea. These are equipped with purse seines, drift nets, trawls and electric light fishing. In 1968, these landed 610,000 tons of fish or 10% of the total catch with an average catch per vessel of 1,840 tons. Small vessels with a capacity of up to 300 hp have been used extensively for coastal fishing. This category of vessels accounted for over 88% of the total number of self-propelled vessels and included small and medium trawlers, seiners, and special use vessels.

Specialty ships were also designed for the now-extinct whaling operations. The first whaling flotilla, the *Aleut* began operation in the Far East in 1932. After World War 11, four more flotillas were created including the whaling ships, the *Slava, Sovetskaya Ukraina,*

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[89]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 416.

[90]Sysoev, Economics of the Soviet Fishing Industry, pp. 119-122.

Yurii Dolgorukii, and the *Sovetskaya Rossiya.* Medium-sized whalers, the *Vladivostok* and the *Dal'nii Vostok,* began operation in the Pacific in 1963. These vessels have been retired or refitted when whaling operations ceased in the mid-1980's.

Recently, vessels have been designed for harvesting previously unsought for species in remote areas such as krill and tuna. The krill vessels are designed to use a midwater trawl in the high seas under potentially harsh climatic conditions. The USSR also has had to specially design and heavily invest in a tuna fleet to operate in the tropical and subtropical waters of the Atlantic, Pacific and Indian Oceans. In 1976, the USSR ordered US$ 100 million worth of vessels from Poland, including 50 tuna long liners, each 52.5 feet long, one tuna mothership,10 tuna super seiners, each 1,800 DWT, and 10 super seiners.[91]

The most important shifts in the composition of the fleet in the post-EEZ period have affected two types of small fishing vessels, those built to fish in Soviet coastal waters and the catcher boats used within mothership expeditionary trips. The number and total tonnage of these types have been reduced by more than 50% as the USSR emphasis has been to increase the number of large ships which can operate worldwide in a variety of conditions.[92] In terms of GRT, the Soviet fleet grew by 2% and the number of factory vessels by 25% in the post-EEZ period. This included the construction of 11 super factory trawlers with over 4,000 GRT designed for Antarctic fisheries and open ocean operations.

The fleet's extracting capability has grown 53% from 5.5 to 8.4 million metric tons of fish annually. This is based on the assumption that in the late 1970's an average ship of this class could catch 40 tons of fish per day and would operate 150 days of the year. By the 1980's the average number of fishing days remained the same, but

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[91]Kaczynski, "Soviet Bloc Tuna Fisheries: Perspectives for Development," Paper prepared at the University of Washington, Seattle, WA, May, 1978, p. 6.

[92]Please refer to Appendix F for a comparison of the composition of the Soviet fleet before and after the general introduction of worldwide EEZs in the 1970's.

the vessels could catch on average 50 tons per day. This breaks down to 48 tons per year per fishermen which is twice the world average.[93]

A typical 3,000 GRT trawler requires a crew of 75 and uses four tons of fuel per day and costs approximately US$ 15,000 per day to operate. Refrigerated vessels also require a great deal of fuel. Fuel does not cost the USSR hard currency as they are a leading oil producer, but it does cost them in terms of opportunity as the oil could be exported for hard currency.[94] Operating cost are even higher outside the 200 mile EEZ of Chile and Peru as the USSR conducts a mid water trawl for jack mackerel which are found at depths of 200 meters or more. The great drag on the nets at this depth results in substantial use of fuel. Since this species are relatively fast swimmers, the trawlers must cruise at around six knots which is two knots faster than a bottom trawler. In addition the added expense of harvesting jack mackerel, the USSR pays about US$ 30 million to Peru for supplies and support for its vessels.[95]

The financial statements suggest that the operation of the distant water fleets is costly and inefficient.[96] Despite the fact that the USSR has 50% of the world's fleet tonnage, it catches only 12% of the world's catch.[97] To put this into perspective, Japan has 8% of the world's tonnage and catches 13% of the annual world's catch. The disparity is partially due to the fact that 50% of the Soviet fleet is

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[93]Press Release May 1989. The world average index states that the average fisherman catches and processes 23 tons per year.

[94]Correspondence with Dr. V.A. Teplitsky dated September 26, 1989. As a result, production costs to harvest one ton of fish are double what they were before the extension of coastal jurisdiction.

[95]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 19. In Argentina, the USSR spent an estimated US$ 25 million during May 1987 to April 1988 including a licensing fee, for an estimated operation cost of US$ 7 per ton of fish caught. This is relatively inexpensive compared with the US$ 78 per ton cost of catching Pacific hake or the US$ 95 per ton of Alaskan pollack which is what the US charged foreign fishermen for operating in the US EEZ during 1988.

[96]Vladil Lysenko, A Crime Against the World, translated by Michael Glenny, Victor Gollancz, Ltd, London, 1983, p. 17.

[97]Kaczynski, "Soviet Bloc Tuna Fisheries: Perspectives for Development," p. 10.

made up of support vessels including motherships, fuel tankers, and repair ships, while only 15% of the Japanese fleet is comprised of support ships. The Japanese are more willing to spend hard currency for services and repairs in foreign ports, whereas the USSR brings the majority of its fleet support with them on each expedition. The advanced age of many of the Soviet vessels also adds to the overall inefficiency of its fleet. For example, the majority of the Soviet vessels operating in Peruvian waters in the beginning of 1989 were 3,000 tonnage trawlers built in the USSR in the late 1960's. As a result of the vessels' age and reportedly poor quality equipment, Soviet ships spend 50% of the time idle in ports or shipyards.[98]

In addition to the high operating costs, the USSR must target lower value fish such as Chilean jack mackerel and southern blue whiting because of its accessibility.[99] As a result of restricted access to traditional grounds and depleted stocks in coastal waters, the USSR now harvests less desirable fish, switching from the popular herring, cod and red fish, 75% of which is useable, to pollack, hake and krill of which only 13% is useable. Thus, even though the volume may be the same, the protein content is much lower. To secure the same amount of protein, the Soviets have to harvest and process more fish now. These currently harvested species are not as familiar to consumers and so have a lower market value.[100]

As a result of the increased expense of fishing in the post-EEZ period, the amount invested in the fishing industry has had to increase.[101] Harvesting in the open ocean necessitates the designing

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[98]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, pp. 17-18.

[99]Conversation with Dr. Vladimir Kaczynski, Institute of Marine Studies, University of Washington, Seattle, Washington in November 1988.

[100]Conversation with Milan Kravanja. Another example was the catch in the Southwest Atlantic where the USSR caught 188,000 metric tons of fish under its agreement with Argentina, but since the species such as southern blue whiting are not familiar to Soviet consumers and sometimes invested with parasites, only 114,000 metric tons were produced for a value of US$ 51 million, or approximately US$ 450 per ton.

[101]Mikhail Gorbachev, Political Report of the CPSU Central Committee to the 27th Party Congress, *Novosti* Press Agency Publishing House, Moscow, 1986, p. 33.

and building of sophisticated fishing vessels equipped with expensive generators, navigational and fishing systems. It is estimated that this type of vessel would cost US$ 7,500 per GRT to build in a western shipyard. This amount will fluctuate depending on the the equipment installed, but on average a 3,000 GRT Soviet trawler would cost US$ 22.5 million.[102]

Investment in the fishing fleet exceeded US$ 1 billion in the 1970's.[103] Ships are expensive, long-term investments as it usually takes three to eight years from the time of the concept to the completed vessel. Many factors can change during this period of time. The design of the ship can become outdated and the supply of fish may change. Once constructed, the ships are used for 20 to 25 years so any problems of design are magnified.

The investment in the fishing industry increased dramatically after World War 11. Between 1952 and 1958 alone, over 1,300 million rubles were invested. Rubles were spent to rebuild vessels, port and processing facilities in the Barents, Baltic, Black and Caspian Seas which were destroyed during the war. Under Stalin, almost 50% of the budget went towards building vessels and the other half to shore facilities including ports, storage and processing plants. As the Soviet Union became more involved in distant water fishing, the amount of the budget spent on the fleet increased to 75%. From 1956 to 1965, the USSR doubled fishery investments from 144 million rubles to 290 million rubles a year and negotiated purchases

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> First of all, changing the structural and investment policy. The substance of the changes lies in shifting the center of attention from quantitative indices to quality and efficiency, from intermediate results to end results, from building up production assets to renewing them, from expanding fuel and raw material resources to making better use of them, and also to speeding up the development of research-intensive industries and of the production and social infrastructures.

As a result, the government has allocated more than 200 billion rubles for modernizing and technically re-equipping Soviet industry.

[102]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 17.

[103]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 394.

of new vessels from West European countries.[104] These included large and medium size stern factory trawlers from the United Kingdom in 1954 and from West Germany in 1955 which helped to increase the Soviet fleet's gross tonnage by more than 50%.[105] The fishing industry operated at a profit by the end of the 1950's, from 33 million rubles in 1959, to 106 million in 1960 and 541 million in 1964.[106]

Almost 1,700 million rubles were spent on the industry during the period 1966-68, including over 1,200 million rubles directly on the fleet. The USSR invested over 12 billion rubles in the industry between 1928 and 1975. In 1975 alone, 800 million rubles were invested which was almost triple the amount invested in the first 20 years of planned investment policy.[107]

Up to 80% of the budget was spent on improving the Soviet fleet, with the remainder left for constructing port and onshore facilities through the 1960's. As a result of this discrepancy in expenditure, the fleet expanded faster than shore-based facilities. Consequently, the antiquated onshore facilities have not been able to handle the catch. Priorities have changed somewhat since 1969 with more emphasis on improving port, storage, repair, and processing facilities. During 1976 to 1980, a large percentage of the budget was spent on constructing 15 modern fish processing facilities as well as over 100 retail fish stores in urban areas.[108] Currently, capital investments in the fishing industry fluctuate between one and one and a half billion rubles a year. About 60% of capital investments is spent on fleet construction, 3-3.5% on ports, 5-6% on shore-based

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[104]The fishing vessels for the USSR built in East Germany and Poland are paid through a barter arrangement through the CMEA. Hard currency is used to purchase vessels from the West Germany, Finland, the Netherlands.

[105]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 391.

[106]Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry," p. 272.

[107]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 378.

[108]*Ibid.*

processing plants and the remainder on the repair, research, and the improvement of technological equipment.[109]

As investment increased, fishing techniques and equipment became more efficient. The net-type mouth mid water trawls recently have been replaced with the more effective midwater rope trawls which have a lower hydrodynamic resistance and improved parameters. Trawl 2214 was designed for use on the BMRT class vessels for deep-water fishing. The midwater Trawl 115/182.4 was designed for catching concentrations of moving fish in the central and southeastern Atlantic and in the southeastern Pacific. The four-sheet bottom-trawl 33/64 is used on BMRT classes in the Atlantic and Indian Oceans.[110]

Drift net fishing is used primarily for quickly moving fish of medium or low concentration. The efficiency of this method has improved with the use of sonar. Drift net fishing is still important in the USSR and is actively practiced in the Far East, the Baltic, and Caspian Seas. Improvements in the design and rigging of the nets have enabled the USSR to surpass other countries in the mechanization of drift net fishing. Where these methods of fishing cannot be employed, drifting and bottom longline fishing are successful for catching low concentrations of fish in regions where other methods cannot be employed. The most valuable catch is tuna, halibut and salmon which are caught with longlines.

Netless commercial fishing gear was used successfully for the first time in the world in the USSR.[111] Netless fishing became popular in the 1950's and includes the technique of fishing with fish pumps and electric lights. Over 250 vessels use this method in the Caspian Sea which accounts for 90% of the catch there. Pacific saury fishing with electric light and conical and stick-held dip nets was

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[109]Correspondence with Dr. V.A. Teplitsky dated September 26, 1989.

[110]*Inrybprom* Marketing Materials, p. 124.

[111]*Ibid.* Fish pumps are used for catching Caspian sprat, whose schools are attracted by use of electric light. Using fish pumps together with traditional fishing gear such as trawls or seines has made it possible to develop continuous action hydraulic mechanized equipment. In 1970, 67.3% of the fish caught in the USSR were by trawling; 9.1% by purse seining; 6% by light fishing; 1.5% by drift nets; and 16.1% by other methods.

introduced in the Far East as early as 1956 and is still in use today. On inland waterways, pound nets, drift nets, drag seines, fish traps, and hook-type of fishing gear are used.

Before the Revolution over 60% of all fishing nets were made by hand, with remaining amount imported. After World War 11, machinery was designed to make better nets.[112] Currently, the Soviet Union ranks among the first in the world in production of netting materials--kapron knotted gill nets, shrink-proof knitted netting, knotted netting made from kapron twine, and netting made from multi-component kapron 40-filament yarn.

The major advantage of using these new netting materials is that their longer service life allows greater catch volume and efficiency. The Soviet Union began to use kapron synthetic fiber so that its nets could be pulled up more slowly thus saving a greater percentage of the catch. Previously, while hauling in deep water perch, their internal bladders would expand and burst the net upon reaching the surface. The fish would then float away to be picked up by small Norwegian coastal boats waiting nearby for their easy harvest.[113]

In addition to improved netting materials for the harvest, the Soviet fleet has been equipped with improved equipment to find the stocks. The fleet is now equipped with new radio communication, radio navigation, and fish finding sonar equipment. Onboard fish finding is a method of locating fish for commercial purposes through active and passive underwater sonar detection. Active fish finding equipment includes echometers which search for fish in a vertical plane and sonars which are designed to located fish in all directions relative to the vessel. Passive fish-finding equipment includes hydrophones and noise indicators which are used primarily in fishery research to study the sounds of marine organisms. Passive equipment is also used to detect tuna which are difficult to find using the active type equipment. Television units are used for locating benthic commercial products such as crabs and mollusks and for

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[112]Sysoev, Economics of the Soviet Fishing Industry, p. 156.

[113]Lysenko, A Crime Against the World, pp. 50-51.

studying the behavior of fish. Currently, aircraft and earth satellites are being developed to locate aquatic organisms in vast expanses of water.[114]

The amount of electronic equipment installed on individual ships ranges from eight to 65 sets and can account for up to 30% of the ship's value. The sonar *Omul* is designed for purse seining for vessels with a displacement of 75 to 100 tons. It has a range of up to 900 meters. The *Kal'mar* is used for finding pelagic and demersal fish up to depths of 800 meters. The *Sudak* and *Yaz* instruments are used on small and medium vessels.

In addition to the net making and equipment industries, the fleet is serviced by shipyards. Efficiency in shipyard operations varies among regions but, in general, has not improved over time. The disproportion between the size of the fleet and the capacity of the yards has resulted in long repair time. Ships can spend 30% to sometimes 50% of their fishing time waiting for repairs, and additional time is spent waiting for cargoes to be unloaded as a result of insufficient onshore processing facilities. Ports have been a serious bottleneck in fishing operations and numerous articles in the Soviet press have appeared calling for the need to improve the efficiency of ship repair.[115]

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[114]*Inrybprom* Marketing Materials, p. 124.

[115]Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry, " pp. 310-311. N.S. Goriunov, Director of the Administration of the Exploitation of the Fleet and Ports:

- -time lost by ships in repair, approximately 30% of ship time is spent waiting for repairs because of insufficient facilities and slow work
- -time lost by ships in port
- -time lost in transferring fish catch from fishing to transport ships because of too few processing and refrigerated transport ships and organizational problems
- -time lost by ships in transit from one fishing region to another
- -time lost to lack or equipment or accident.

Summary

The Soviet fishing fleet is the largest in the world today. However, coastal pollution, overfishing, and the introduction of the EEZ changed the Soviet strategy from resource abundance to resource scarcity, leading to the development of distant water fishing flotillas to harvest food for the Soviet population as well as earn much needed hard currency.

Contributing to the long distance capacity of the Soviet fleet are the introductions of the stern factory trawler and the flotilla concept. However, good the concept, the advanced age of many of the vessels has decreased the overall efficiency of the fleet with ships spending at least 30% of their time in port.

As a result of limited access to their traditional grounds, the Soviets must target lower value fish, thus decreasing the profitability of the catch.

History of the Soviet Fishing Industry through the post-EEZ Period

A study of the history of the Soviet fishing industry with special emphasis on the effect of the Exclusive Economic Zone on Soviet fishing patterns and the resulting increased attention focused on fisheries in the high seas and inland waterways of the USSR.

The Soviet fishing industry emerged from a primitive fishery to become the number one nation in terms of fleet tonnage, and the number two fishing nation, after Japan, in the world, harvesting 11.2 million tons or 12% of the total world catch for 1987.[116] To become the second largest harvester, the Soviet fishing industry has had to recover from two world wars, regroup after major political and economic changes, and adapt to widespread stock depletions. Probably the most dramatic event affecting the Soviet fishing industry was the worldwide acceptance and enforcement of a 200 mile EEZ. First introduced by Latin America, the zone became customary international law during the United Nations Conferences on Law of the Sea. The law gives coastal state total jurisdiction over all living and nonliving resources within a 200 mile area from the shore. By 1977, more than four-fifths of the world's 200 mile zones were claimed by coastal states. Since over 95% of all fish are caught within these EEZs, developing nations now controlled two thirds of the world's fish supply. The EEZ has severely limited access to traditional fishing grounds of the Soviet distant water fleet. The immediate result was a 10% decrease in the Soviet annual catch. More recently, *Perestroika* has implemented a major restructuring of the industry which is currently in process.

During the nineteenth century, the Russian fishing industry was concentrated in the inland waterways near the main population centers of central and southern European Russia. These fisheries developed as a result of their proximity to a ready market, abundant labor force, and salt mines located near the Caspian, Azov and Black Seas as salting was the primary processing method used. The sturgeon fishery in the Caspian Sea accounted for 63% of the total catch in the 1800's. By 1830, the decrease in sturgeon, due to

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[116]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 379 and pp. 393-394. As a result of increased investment and modern vessels and equipment, the total catch reached prewar levels by 1947 and increased to 5.77 million tons in 1965, and to over 10 million tons in 1975. This was an 18% increase in annual catch, more than twice the world growth of 6.7% for the same period.

overfishing combined with the increased demand for fish products, led to the commercial fishing of bream, pike, perch, and carp.[117]

During the 1880's, the fishing industry flourished as the railroads connected the Volga towns with other areas in Russia. By 1905, 3,000 tons of fish were carried by rail, increasing elevenfold by 1910. In addition, the introduction of the steamship reduced transit time between Astrakhan and Gorky from two months to two weeks.[118] The Far East fisheries remained mostly isolated until the Murmansk railroad was completed in 1916.[119]

Fishing operations came to a virtual halt during World War 1. The industry made a comeback in 1917 with a total catch of 890,000 tons, but fell again during the Civil War and "foreign intervention" to an all time low of 170,000 tons in 1919.[120] To alleviate the ensuing food crisis, state management of the fisheries was introduced in October 1918, only to be reversed three years later by "The Fishing Industry and Fishery" decree under the NEP.

NEP breathed life into the fishing industry by attracting private capital to accelerate the development of the economy. The total catch increased 85% by 1926. However, the capitalist influence was short-lived, as socialism soon replaced individual initiative with the 1925 introduction of state-operated and cooperative fisheries. By 1929, 60% of the fisheries were cooperatives.

As the population began to recover from the ravages of war and political purges, greater demands were made on the fishing industry to supply food to the people. Although the majority of fishing was still done in rivers, lakes, and inland seas of the Caspian,

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[117]Sysoev, Economics of the Soviet Fishing Industry, p. 17. Overfishing in the late 1800's led to a 33% decrease in catch in the Sea of Azov by the 1900's. Also, the sterlet population was exhausted in the Volga River, and there was a decline in the carp and sturgeon harvest in the Caspian Sea.

[118]*Ibid.*

[119]There was salmon fishing in Kamchatka using passive fishing techniques in the spawning grounds. However, in general, the Far Eastern fisheries were underutilized at this time because of the scarce local population and the lack of reliable transportation.

[120]The low harvest in 1919 was the result of the effects of World War 1, the Japanese occupation of the Far East, and the British seizure of Arkhangelsk in the spring of 1918.

Azov and Black Seas, high seas fishing increased 130%,[121] expanding into the open waters of the Far Eastern and Northern basins, including the rich grounds near Medvezhii Island, Gusinaya Bank near Novaya Zemlya, and the Demidovskaya Bank. At this time, the fishing *kolkhozes* and motorized fishing stations (MFS) introduced in 1932 began to play an important role in the industry. The total catch of fish, marine animals and whales grew from 960,000 tons in 1929 to 1,400,000 tons by 1940.[122] This was due in part to the increased harvest of herring, Caspian kilka, Baltic herring, anchovy, Azov kilka, cod, and flounder. During the same period, the catch from inland waters remained the same, accounting for less than 60% of the total harvest by 1940.[123]

During the "Great Patriotic War of 1941-45," the Baltic, Black, Azov, and Barents Seas were part of the war zone. Fishermen were enlisted resulting in more than 40% drop in the annual harvest. At this point, measures were taken to develop fishing in Siberia and the Far East to supply food to the military.

The entire European fleet and most of the Pacific fishing fleet were destroyed during World War 11, as were the majority of ports and shore facilities. Direct losses in the fishing industry were estimated at 56 million rubles, including 11.5 million rubles for the fleet destruction. Indirect losses were over 200 million rubles. After the war, the immediate objective was to rebuild the fisheries in the inland and coastal waterways. Fishing was concentrated in the near

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[121]Press Release May 1979. The amount caught in the high seas grew from 240,000 tons in 1928 to 560,000 tons by 1940.

[122]Note that the Soviet numbers are higher than those of the Food and Agriculture Organization of the United Nations (FAO) because the FAO does not include the catch of marine mammals in metric tons and the amount of marine plants harvests.

[123]The drop was due in part to the decreased runoff resulting in a lower level of the Caspian Sea during the 1930's. Also, the insufficient flow of water from the Don and the Kuban led to increased salinity of the Sea of Azov which adversely affected the reproduction of commercial stocks. The lower runoff was the result of the construction of hydro-development and land improvement measures such as the building of reservoirs, irrigation of arid zones, and snow retention. Simultaneously, there was an increase in the temperature in the North resulting in greater evaporation.

shore areas of the Barents, Baltic, Japan and Okhotsk Seas.[124] The harvest from the Western Basin, with its ice-free ports like Kalingrad and good transportation ties to the urban centers, experienced the greatest growth, increasing 66 times between 1940 to 1968. The catch in the Far Eastern region with its ice-free ports of Vladivostok and Nakhodka increased seven times during the same period.[125]

The postwar emphasis shifted to developing long distance fisheries. More than 80% of the investment in the industry by the late 1940's was dedicated to creating a modern industrial base for oceanic fisheries. In his new role as the Minister of Fisheries in 1948, Mr. A.A. Ishkov repeatedly stressed the need to develop distant water capability. The first expeditionary voyage sailed to Iceland that year. Although no fish were caught, the trip was hailed as having "initiated the development of Soviet fishing in the high seas."[126] By the late 1940's, 46% of the catch was from the high seas. This increased percentage was made possible by the introduction of large refrigeration vessels, followed by the addition of vessels with freezing capabilities, canning lines, and fishmeal reduction plants. Motherships, floating canneries and long range support vessels further enhanced the Soviet ability to fish the world's oceans. As a result of increased investment and modern vessels and equipment, the total catch reached prewar levels by 1947 and increased to 1.75 million tons by 1950.

Khrushchev introduced an aggressive seven year plan which shifted funds away from the Navy to the fishing industry. With the additional rubles, the industry was able to branch out from its North Arctic and Pacific fisheries sending vessels to Iceland and the Faroe Islands in 1953 and to the Grand Banks off Newfoundland two years later. Increasing the annual harvest became a political priority. In 1962, the Central Committee of the CPSU and the USSR Council of

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[124]Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry," p. 251.

[125]Sysoev, Economics of the Soviet Fishing Industry, p. 205. Kamchatka was the most important Far Eastern region.

[126]Sulikowski, "Soviet Management of Ocean Affairs: The Case of the Fishing Industry," p 253.

Ministers adopted the decree "On Measures to Increase the Catch of Fish and the Output of Fish Products" which set the industry objective-raise the catch of fish and marine animals to 5.5 million tons by 1965.[127] The goal actually was overfulfilled by almost 300,000 tons.

The North Atlantic became the main fishing ground for the Soviet fleet during the 1950's. The fleet first concentrated on the Northeastern fishing grounds, i.e. the Barents, North, Norwegian, and Baltic Seas as well as the waters around Iceland and the Faroe Islands.[128] The Barents Sea area accounted for 10% of the total catch with its rich harvest of cod, herring, capelin, perch, wolf fish, and flounders. The Norwegian Sea was of secondary importance with Soviet harvests of herring (50-60%), cod (12-20%), and coalfish (6-12%), and the remainder catch of haddock and ocean perch.

After depleting the commercially valuable stocks of those seas, the fleet moved on to George's Bank to concentrate on the herring fishery. The USSR took over 60,000 metric tons of herring from this area after Soviet vessels found a large concentration of herring during a research expedition in 1961. Approximately 400 to 500 Soviet vessels would simultaneously drag trawls across the Bank which greatly increased the catch but destroyed the breeding grounds.[129] After overfishing the herring stocks, the Soviets redirected their operations to the more plentiful haddock. As these stocks were depleted, the fleet moved southward along the American East Coast as far as Cape Hatteras in North Carolina.[130]

Soviet fishermen used 40 mm stretch mesh, smaller than the internationally accepted standard, which fired strong anti-Soviet

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[127]Sysoev, Economics of the Soviet Fishing Industry, p. 29.

[128] Norman Polmar, Soviet Naval Power, MacDonald and Company (Publishers) Ltd., London, 1974, pp. 80-81.

[129]Conversation with Dr. Marvin Grosslein, NMFS, Woods Hole, MA.

[130]Conversation with Milan Kravanja. The story goes that the United States did not have a structured body to study Soviet activity until President Kennedy saw Soviet fishing vessels off Hyannisport while out swimming one day. At first, the President thought this was a military threat, but quickly realized instead it was an economic one. He called in experts to monitor Soviet activities.

feelings among American fishermen. American fishermen talked about Soviet ships "harassing" American vessels, Soviet nets, "the size of football fields," full of fish, and discarded nets, tangling American vessel propellers.[131] As a result of these Soviet aggressive tactics, the total harvest in this area increased from 147,000 metric tons in 1962 to a record catch of 418,000 metric tons. The Soviet Atlantic catch increased from 46% of the total Soviet harvest in 1964 to 53% in 1973.

Depletion of the herring, haddock, mackerel, and flounder stocks prompted the need for international cooperation in the management of the stocks. As early as 1949, the International Commission for the Northwest Atlantic Fisheries (ICNAF) was created in 1949 to establish quotas for native stocks.[132] Canada went one step beyond the Commission's quota system by further by closing its Atlantic ports to all Soviet vessels until the latter decreased its fishing operations in this area by 40%.

Hake fishing in the Northeast Pacific, i.e. the Bering Sea, the Gulf of Alaska, and the areas off Washington and Oregon, began in the 1960's when the USSR expanded its operation into the Gulf of Alaska. The fleet "invaded" the Gulf of Alaska in 1962, the coasts of Washington and Oregon in 1966, and California in 1967. The annual Soviet catch rapidly increased to 250,000 metric tons annually and remained at this level until 1975. Fishing activities moved further south to Mexico, and Central America which accounted for less than 2% of the total catch in the 1970's and even less after the introduction of economic zones. The total Soviet harvest for the North American grounds was consistently in the one to two million metric ton range until the strict enforcement of the US EEZ in 1977. The Soviet harvest from the American Pacific grounds was most affected, decreasing from 700,000 metric tons in 1974 to 2,400 metric tons in 1983.

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[131]United States Congress, Hearing Before the Committee on Commerce, 94th Congress, 1st Session, Government Printing Office, Washington D.C., 1975, pp. 28-30.

[132]The USSR joined the ICNAF in 1956.

In 1980, the United States denied access to its fishing grounds to the USSR as a result of the Soviet invasion of Afghanistan. President Reagan partially lifted the ban in July 1984 by allocating Soviet vessels 50,000 metric tons primarily of Alaskan pollack. The Soviet catch increased slightly in the American EEZ in 1984 and 1985, but chances of growth in this area are unlikely because of the development of the American fishing industry in this region.

Soviet activity in the Caribbean area has accounted for only a small portion of the total Soviet harvest each year. Just over 17,000 metric tons were harvested by Soviet vessels in the Caribbean in 1965. The harvest fluctuated from 37,400 metric tons in 1966 to a record high of 69,000 metric tons in 1975. No catch has been reported from this area since 1977.[133] However, the USSR has had a close relationship with Cuba since it established a fishing base there in the early 1960's. The Soviets built a modern port at Havana giving them port access for their South American fishing activities as well as a base for possible intelligence surveillance.[134]

The USSR has had a stormy relationship with Latin America since its first research expeditions to the region in 1961. Soviet fishing vessels targeted the Southwest Atlantic fisheries off Argentina and the Southeast Pacific fisheries off Peru and Chile. The fleet, including over 30 vessels and seven motherships, first descended on the coastal waters of Argentina in 1966, harvesting up to 73,000 tons, over 75% of which was Patagonian hake. The next year more than 70 Soviet vessels appeared, provoking the Argentine government of General Juan Carlos Garcia to declare an EEZ on January 19, 1967.[135] The government implemented a licensing scheme, charging each vessel a nominal fee of US$ 30 every two

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[133]Please refer to Appendices G and H for a breakdown of the Soviet catch by region from 1965-1987.

[134] Kilmarx, Soviet Sea Power, p. 97. Citing Ghana as an example (Ghana had seized two Soviet trawlers in its territorial waters for suspected clandestine support of efforts to return the deposed leader Nkrumah to power), American officials stated that Soviet trawlers operating along the American coast may be engaging in spying or smuggling activities.

[135]Decree number 17094. The Argentines were concerned by the size of the hake harvest as this was the primary domestic fishery.

months. Though refusing to officially recognize the EEZ, the Soviet trawlers, carefully watched by the Argentine Navy, paid for 102 licenses. Despite these restrictions, the Soviet catch increased almost 9.5 times in one year. As a response, the Argentine government further restricted the Soviet fishing by introducing an increased fee of US$ 500 per vessel plus a permit charge based on the tonnage of the vessel. The fishing became unprofitable as the fees for a typical Soviet factory vessel cost US$ 50,000 for a seven month period.[136]

The Soviets were unable to negotiate a lower registration fee, so in April 1968, 30 vessels moved north to Brazil and Uruguay, and the rest set sail for the West Coast of Africa. This was not a quiet departure. The Soviet fleet so delayed its departure that the Argentine Navy finally shot at two Soviet stern factory trawlers which then surrendered to Argentine authorities. The vessels were released from Argentine custody after several weeks of negotiations. Violations continued through the 1970's. The Soviet trawlers, the *Bussol, Theodor Nette, Apatite, Magnite* and later the *Nereid, Prokipievsk*, and the *Frans Hals* were arrested by Argentine naval vessels in the Patagonian Shelf during the fall of 1977.[137]

Uruguay was the next Soviet target. However, having watched Soviet activity in Argentina, Uruguay quickly claimed an EEZ. The Soviet vessels next steamed on to unsuspecting Brazil, harvesting 420,000 tons of fish in the area in 1970. Brazil quickly retaliated by also claiming a 200 mile zone in 1971, and completely closed its coastal waters to foreign fishermen at that time.

In the Southwest Atlantic region, the catch declined from a high in 1967, to 26,000 metric tons in 1971, and to under 5,000 metric tons the following year. Bilateral agreements with countries

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[136]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 25. The US$ 500 fee was for a 12 month period. The permit charge was US$ 10 per GRT for fishing vessels and US$ 20 per GRT for processing vessels.

[137]Lysenko, A Crime Against the World, pp. 9-11.

in this area reversed this trend so that by 1987 the catch was at a 15 year high of 169,000 metric tons.[138]

A brief window of opportunity opened during the 1982 Falklands conflict. The United Kingdom established a 150 mile protection zone around the islands to prevent Argentine patrol craft from entering the area. The British allowed unlimited access to other countries. Always opportunistic, the Soviets arrived with a flotilla of 60 stern factory trawlers. The resulting catch consisted of approximately 50% squid and the remaining, grenadiers and southern blue whiting.[139] Further Soviet activity ceased as soon as the British implemented a licensing and resource management regime.

Since 1979, the primary ground for Soviet fishing off Latin America has been the Southeast Pacific which accounts for 85% of its total Latin American catch. Though the vessels have been restricted from operating inside the Peruvian and Chilean EEZs, the annual harvest increased over 100 times from 54,000 metric tons in 1978 to 547,000 the next year. Over 90% of the harvest is Chilean jack mackerel.[140] Most fleet activity centers around the Chilean and Peruvian boundaries, south and southwest of the Juan Fernandez Islands, along the Chilean Rise.

The USSR has not conducted any major fishing operations in the Eastern Central Pacific off the coasts of Mexico, Colombia and Ecuador since 1973 when Soviet vessels caught 138,100 metric tons of fish, 90% of which were grunts. As a result of Soviet overfishing, the harvest dropped to 22,200 metric tons in 1974. After 1975, the catch dropped rapidly to under 2,000 metric tons and was reported as 100 metric tons in 1987.[141]

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[138]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 25.

[139]The squid was sold in Europe since this species has never been popular in the USSR.

[140]The USSR also caught 40,000 metric tons of chub mackerel annually from 1980-82.

[141]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 13.

The USSR shifted its fishing activity to the coast of Africa after being excluded from Argentine waters in 1968 when 50 of the 80 trawlers in Argentine waters went directly to the coast of West Africa.[142] This area contributed 3% to total Soviet catch in 1964. Catches more than doubled from 480,000 tons in 1965 to a record 2.3 million in 1978. The Soviet fleet harvested primarily horse mackerel. Since then, the annual harvest has fluctuated around the 1.5 million metric ton range. The actual catch in 1987 was 1.7 metric million tons which was the equivalent of 51% of the Soviet distant water catch that year.[143] Like the Latin Americans, many of the African nations declared economic zones in response to the Soviet onslaught. Unlike the Argentines, most African countries have limited enforcement capabilities and fear routine Soviet violations of their coastal zones.[144]

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[142]From conversations with Theo Brainard, an African graduate student at the University of Rhode Island in Kingston, RI. West Africa has the sixth most productive fisheries in the world. The East Central Atlantic Zone contains a wide variety of fish which are also highly migratory and are fished by African, European and Asian countries. The maximum sustainable yield (MSY) has been estimated to be as high as four million tons. The richest area is located in the north between Morocco and Guinea. The fishery is primarily pelagic fish, including sardines, sardinella, mackerel, and horse mackerel. The most productive area for these is from Mauritania to Sierra Leone. The remaining fishery is made up of 15% demersal including hake from Morocco to Sierra Leone, sea bream from Mauritania to Guinea, big eye grunter from Senegal and Gambia and a variety of stocks from Mauritania to Guinea. The remaining 10% consist of cephalopods-octopus, cuttlefish and squid, tuna and shrimp. Pink shrimp is the most important crustacean resource, and is found in lagoon entrances to the ocean and near the mouths of rivers especially in the larger river areas from Senegal to Nigeria and offshore. These stocks are difficult to manage as a result of their highly migratory nature.

[143]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 4. The total Soviet catch from distant water fisheries was 3.5 million tons in 1987.

[144]Notes from meetings with Theo Brainard at the University of Rhode Island and subsequent correspondence. Domestic fishing is primarily artisanal, located in the coastal waters. Large foreign fleets operate outside the territorial limits and harvest the majority of the catch from this area. Distant water fishing nations (DWFNs) accounted for 70% of the catch in 1977, with the USSR the largest in terms of weight. With the introduction of EEZs and the resulting higher operation costs, the foreign fleet harvest dropped to less than 60% of the total production. Part of the reason for the drop was the decline in the Soviet harvest from 1.3 million metric tons in 1976 to 800,000 tons by 1978. Though the increased jurisdiction benefited the West African financially, it also brought increased problems. Many of these countries

After the extension of coastal state jurisdiction, the Soviet Union has negotiated agreements with the different African nations. These usually provide for Soviet economic aid, training, research information, and the construction of onshore facilities and ports. In exchange, the coastal states allow Soviet vessels limited access to their waters.

Despite agreements with the African nations, the USSR was severely restricted in its access to these fisheries. As a result, the Soviet Union developed a strong interest in the Southern Hemisphere. Soviet interest in the South Pacific began in 1965 when 20 research vessels, making up the so-called "Lira Expedition," were sent to test the commercial feasibility of the region's fisheries. Commercial fishing did not begin there until 1971, and the South Pacific still remains one of the most important to the Soviet industry. Officials have emphasized that the Soviet interest in the South Pacific has been primarily economic, not military. The USSR is interested in the tuna and salmon fisheries. Tuna is sought for food, not for foreign exchange.[145] "Oceania" is growing in importance as the catch from this area accounts for 1.5% of the Soviet catch. The 1987 harvest was 166,000 metric tons. Previously, the catch had fluctuated in the 70,000 metric tons range.

The Indian Ocean is of great interest to the Soviet Union. Vessels from the Black Sea Administration began to operate in the

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lacked regulatory or management organizations, and were often unable to patrol their EEZs.

Regional organizations were set up to help manage the stocks. West African Economic Community (CEAO) organization was created in April 1973 by Ivory Coast, Mali, Mauritania, Niger, Senegal, and Upper Volta. CEAO is responsible for promoting the conservation and development of fisheries as well as the coordination of the legislation of member states. Fishery Committee for the Eastern Central Atlantic (CECAF) was created in 1969 under the Constitution of the FAO and is composed of 29 states, 19 of which are coastal African nations. Its objective is to assist members in establishing a scientific basis for regulating and conserving the area's living resources. In 1981, 14 of the West African countries from Mauritania to Namibia signed a comprehensive conservation agreement, including an action plan for conservation measures in the Coastal areas of the West and Central African regions; a convention to protect the marine environment in this area; and a protocol for cooperation in fighting pollution in cases of emergency.

[145]Correspondence with Dr. Anatoly Kolodkin, Professor of Law and Chairman of the Soviet Maritime Law Association, Moscow dated May 26, 1989.

Arabian Sea and Persian Gulf in 1963. The catch increased to 76,000 tons in 1966, but decreased the next year as a result of the closure of the Suez Canal during the Arab-Israeli War. A contract with Pakistan was short-lived in 1971, resulting in a declining harvest from 240,000 tons in 1971 to 44,000 tons by 1973.[146]

Another area of interest is Antarctica. Whaling activities expanded to this area in the 1950's. By 1954 there were four flotillas in this area, working around 40,000 ton ships. The Soviet Union decreased whaling activities in the mid-1960's under pressure from the International Whaling Commission. No Soviet whaling activities have taken place since the mid-1980's.

The Soviet Antarctic catch reached a high of 602,000 metric tons in 1982, but has since declined by 64% in 1987.[147] Antarctic fin fish are primarily harvested by Communist Bloc countries who caught 104,000 tons in 1979 or 63% less than the 1976 catch. Depletion of Antarctic fin fish has forced the USSR to focus on krill.[148]

The USSR initiated a krill fishery in Antarctica in 1974, harvesting 105,000 metric tons of krill. The catch increased to 491,000 metric tons in the next decade, but then declined with the reduction of the number of Soviet vessels fishing in the region

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[146]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 410.

[147]The Soviet catch for 1987 was reported as 384,200. The FAO began recording statistics for Soviet activity in this region in 1976.

[148]Walter V. Reid, "Managing the Southern Ocean Krill Fishery," Resources, Spring 1988, pp. 11-14. Krill is a two inch shrimp-like crustacean that plays a primary role in the ecosystem of the southern ocean around the Antarctic continent--food for whales, seals and marine birds. This resource has become a significant fishery in this area. Worldwide catch has increased from 20,000 tons during 1973-74, peaking at 500,000 tons in the early 1980's. The 1986-87 catch was approximately 375,000 tons. The fishery is dominated by the USSR which takes 80% of the catch. The remaining is mostly harvested by the Japanese with some taken by Poland, Chile, Korea, and Spain.

In the USSR krill is marketed as fishmeal and used as a protein additive for animal feed, while in Japan it is consumed by humans. Though there is some concern about overfishing it has been estimated that 150 million tons of krill could be harvested annually, "a shrimp cocktail the size of a city block and piled five miles high."

because of the high operating costs.[149] Most of the catch is used for meal. Given the high cost of Antarctic operations and specialized processing needs, this is a very expensive method to produce fishmeal. In addition, it takes two to three times as much krill meat to substitute for fish. These costs have been somewhat reduced with the introduction of improved machinery and krill processing techniques in 1987. No statistics have been made available on what percentage of the catch currently is made into fishmeal.

Though most of the press and attention have been focused on its distant water fleets, the USSR does have substantial fishing grounds in their coastal waters and internal water bodies. The USSR has 14 seas with a corresponding 47,000 kilometers of coastline so that two-thirds of its borders are actually shorelines.

As Soviet access to world fisheries was restricted, the Soviets turned their attention to their own coastal fisheries which now account for 60% of the total Soviet catch or 6.7 million metric tons. The total Soviet coastal catch reached an all time high of 7.2 million metric tons in 1984, but this number quickly fell as a result of overfishing. Most of the catch is from the Far East which accounts for approximately 5.5 million tons per year, including over 3.3 million tons of Alaskan pollack, 190,000 tons of Pacific herring, 188,000 tons of Pacific cod, 132,000 tons of salmon, 30,000 tons of shrimp, as well as ocean perch and other marine life.[150]

The USSR has increased it domestic catch by reducing Japanese and South Korean quotas in Soviet waters. For example, the Japanese quota was decreased from 1.5 million metric tons in the late 1970's to 150,000 tons in 1986. Over 30% of the increase in the Soviet catch has been at the expense of the Japanese harvesting of pilchard, capelin, Asian greenling, sculpins, cod, and Pacific herring. In addition, all South Korean fishing was halted which traditionally

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[149]Correspondence with Dr. D.L. Powell, Executive Secretary of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), Hobart, Tasmania dated July 30, 1988.

[150]The Far Eastern portion of the catch has increased to 60% from 31% in 1977. The 1985 figure included 640,000 metric tons from the Japanese EEZ, but the Soviet quota has since been reduced to 150,000 tons.

accounted for 400,000 metric tons a year. In the Okhotsk Sea, the redeployed Soviet vessels have operated as independent trawlers in coastal fisheries or as motherships for smaller local coastal catcher boats.[151]

Inland waterways accounted for over 16% of the total catch in 1965 or 826,000 metric tons. The harvest averaged 800,000 metric tons during the following 20 years and recently reached an all time high of 988,000 metric tons in 1987.

The Caspian and Azov Seas have been the traditional source of fish for the Russian people and determined their preference for fresh water fish. Despite this preference for fresh water fish, the development of these fisheries, as well as pond fishing and fish farming, suffered during the increased attention to distant water fishing. The most important inland fisheries have been in the Caspian Sea, but these have been negatively effected by the building of hydro-power stations on the Volga River. The resulting reduction in river runoff in combination with increased industrial and agricultural pollution have decimated the stocks of roach and killed sturgeon roe.

The Azov-Black Sea area has been the second most important inland fishery.[152] Productivity was very high in this area because of the abundant continental runoff, low salinity and favorable biological conditions in the Don and Kuban Rivers. As in the Caspian, the stocks have been negatively affected by increased industrial and agricultural pollution. Also, the 1952 construction of the Tsimlyanskoe Reservoir destroyed the natural spawning grounds in the Don River.[153]

The USSR has over 250,000 lakes with a combined area of 25 million hectares, including 50 lakes with an area of over 10,000 square kilometers. The largest lakes are Lake Baikal, Balkhash,

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[151]Kaczynski, "The 200 Mile EEZ and Soviet Fisheries in the North Pacific Ocean; an Economic Assessment," p. 11.

[152]The two seas are regarded as one entity because many species such as herring, anchovy, and mullet migrate from the Black Sea to the Azov Sea and vice versa.

[153]Sysoev, Economics of the Soviet Fishing Industry, pp. 199-200.

Ladoga, Onega, Peipus, and Ilmen. Lake Baikal is the deepest freshwater lake in the world. The most valuable commercial stock of this lake is whitefish, but harvests have been declining because of the effects of pollution and overfishing on the stock.

The total length of all rivers in the USSR is approximately three million kilometers of which 350,000 are accessible for fishing. Fishing has also been done in 85 storage lakes with a total surface area of 100,600 square kilometers. The most important of these are the Kuibyshev, the Rybinsk, and the Volgagrad storage lakes. Fishing in these bodies has become an important source of catch for the inland waterways.

In addition to commercial fishing, over 20 million individuals fish for roach, perch, bream, and pike in the Russian Central Zone; cod, flatfish, and navaga on the North Sea coast; grey mullet and horse mackerel in the Black Sea; smelt and navaga in the Far East. Individual licenses are allocated for valuable species such as salmon and herring in the Far East and sturgeon in the Ural River. In some areas, angling has become so popular that it has reached the volume of commercial catches and becomes a factor in management decisions for the fishery.[154]

The USSR will continue to focus on the high seas in their search for underutilized stocks to increase its harvest as the more productive world coastal fisheries become less accessible. In addition, the inland waterways are becoming an increasingly important percentage of the total harvest as Soviet options worldwide are decreasing.

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[154]*Inrybprom* Marketing Materials, pp. 192-194. Fish protection bodies manage the fisheries on recommendations from scientific organizations and fix time limits, sites, methods and volume for individual basins. There are approximately 500 "fisheries functions" which offer services such as lodging, renting boats, fish tackle as well as carry out fish breeding programs and improvement works. Soviets can join fishermen societies enabling them to fish in the country's lakes, reservoirs and river areas and can take an active role in protection of the fish resources.

Summary

Today the Soviet fishing industry's harvest is surpassed only by Japan. Although affected by the 200 mile EEZ where developing nations control two thirds of the world's fish supply, the Soviets still harvest over 12% of the world's catch.

During the 19th century, the Russian industry was concentrated in inland waterways near the main population centers, but expanded overseas with the introduction of the distant water fleet in the 1950's. The resulting Soviet flotillas caused worldwide concern with their massive overfishing of previously fertile fishing grounds. Most coastal states restricted access to the Soviet fleets, forcing the USSR to explore more plentiful stocks like krill in the high seas. The USSR also is focusing on its inland fisheries going full circle to the 19th century.

Soviet Research Capabilities

A study of the history of research for the fishing industry with special emphasis on current education and training as an important segment of that industry.

With the limitations presented by EEZs, oceanographic research has become an even more relevant part of the fishing industry. Its importance has grown rapidly as new techniques have become necessary to find decreasing stocks of fish in increasingly remote areas of the oceans. As a result, the government recently has made a conscientious effort to improve its oceanographic research capabilities as well as other support functions, including the training and educational system as well as the actual living conditions for those involved in the industry.[155]

The Russian research program, in essence, began during the circumvention of the world by the explorers, Ivan Kruzenshtern and Yuri Lisyanskii from 1803-06, followed by Fabian Gottlieb von Bellinghausen and Mikhail Lazarev from 1819-1821. The first research vessel, the *Andrei Pervozvannii*, was built in 1898.[156]

After the Revolution, the Soviet Government expanded the country's oceanographic research capabilities by establishing the first marine institute. By 1922, the institute had its own specially constructed research vessel, the *Persei*. By the 1950's, oceanographic research organizations extended throughout the USSR. During 1957-58, the USSR mounted the world's largest oceanographical research program. At this time, the Soviets launched the *Mikhail Lomonsov*,

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[155]Ryzhkov, Guidelines for the Economic and Social Development of the USSR for 1986-1990 and for the Period Ending in 2000, p. 31.

> ...a first-priority of the 12th five-year plan is that every engineering and managerial decision should be examined in the context of the gradually growing contribution by science and technology to production. Socialism's economic system enables us to make systematic use of the potential of the scientific and technological revolution. Unlike capitalism, where, in the final analysis, the great achievements of science and technology aggravate the social contradictions, in the hands of the socialist state they are a powerful lever for transforming society. Here socialism has a historic advantage, and must use it to the full.

[156]William E. Butler, The Soviet Union and the Law of the Sea, John Hopkins University Press, Baltimore, MD, 1971, p. 160.

the first Soviet research ship designed for distant water research. By 1964, the Soviet research fleet was a large as the American one, surpassing the American fleet six years later. At that time, the Soviet fleet displaced 320,000 tons and the American fleet 180,000 tons.[157]

Since 1966, the *Akademik Korolev* has been the flagship of the research fleet. It is used to photograph the bottom of the ocean up to 5,000 meters and has discovered the large concentrations of iron and manganese nodules found south of latitude 10 degrees south.[158] In addition, the older factory trawler, *Akademik Knipovich*, was refurbished and equipped for research by the Ministry of Fisheries and participated in 20 expeditions, primarily in the Southwest Atlantic and Southeast Pacific between 1962-1982.[159] Another research vessel, the *Vityaz*, has completed more than 60 expeditions, including the exploration of several deep sea underwater mountain ridges such as the East Indochinese Ridge.

By 1970, the USSR owned 70 research ships, increasing to 200 ships four years later. The total capacity in terms of tonnage grew over 60% in the 1980's. As a result of the increased size of the vessels, more laboratories and a larger number of scientists can be aboard each ship.

A large percentage of the research vessels built in the USSR have been converted from merchant ships, fishery trawlers, passenger ships and even ferries. Several of these vessels reportedly lack sophistication and often must use brute strength rather than technology to carry out research-oriented tasks. Many operations use side trawlers instead of stern trawlers. In addition, Soviet vessels sometimes are not equipped with a sufficient number of

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[157]Mark Janis and Donald C.F. Daniel, "The USSR: Ocean Use and Ocean Law," Occasional Paper N. 21, Law of the Sea Institute, Kingston, RI, 1974, p. 6.

[158]Butler, The Soviet Union and the Law of the Sea, p. 161.

[159]Vladimir Kaczynski, "The Status and Potential of the Soviet Ocean Science after 200 Mile Economic Zone," Paper prepared at the University of Washington, Seattle, WA, March 1984, p. 7.

computers. In some cases, the vessels do not have the technology to determine the depth of the schools of fish.[160]

To gain access to Western technology, over 70% of the research fleet has been purchased outside the USSR, primarily from East Germany, Poland, and Finland, who have fewer trade restrictions with the West than the USSR. East Germany supplies 40% of these vessels including oceanographic/meteorological ships, fishery research vessels and fishery training trawlers. The Poles supply hydrographic/meteorological ships and Merchant Marine training ships. From Finland, the USSR primarily purchases smaller hydrographic research ships with an average tonnage of 1,390 GRT per vessel.

In the vessels purchased outside the USSR, main propulsion engines are built with licenses bought from *Sulzer* in Switzerland, *Burmaister* and *Wein* in Denmark, and Fiat in Italy. Hydraulic machinery is built in East European countries from blueprint specifications from Sweden, adjustable pitch propellers and echosounders from Norway, and Decca Navigator Systems from Great Britain. In addition, fish processing equipment is supplied by West Germany.[161]

In addition to surface research vessels, self-contained manned vehicles are one of the most important items of submersible equipment used in the ocean and continental shelf research. "Rif" is a manned submersible designed for a numerous underwater fishery operations. The vehicle surveys coastal waters to select plantation sites and checks the conditions of cultivated marine life.[162]

In addition to the fishing industry, research benefits the Merchant Marine and Navy by supplying them with information on

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[160]This information is from a source who requested anonymity. He was amazed at the lack of sophistication, but said that despite the lack of computers, when one was available, the scientists were very familiar with the latest Western technology. Also, he noted that the Soviets were more economical than their Western counterparts--the Soviet fishermen would fix nets with holes the size of a wall which US fishermen would throw out.

[161]Kaczynski, "The Status and Potential of the Soviet Ocean Science after 200 Mile Economic Zone," pp. 11-14.

[162]*Inrybprom* Marketing Materials, p. 141.

wind and current conditions which is incorporated into charts and navigational aid publications. The Navy also benefits from the information on the movements of foreign navies. The USSR uses their research as a leverage in the international scientific community to gain access to foreign findings. Although research is used as a tool to assist Third World countries, it is most often collected to aid domestic economic development.

During the 1980's, the research objective was to find new fishing grounds since that the traditional ones were often closed to the Soviet fishing fleet. Over 70% of the research expeditions are currently sent to areas in the Atlantic and Pacific Oceans located outside national jurisdiction, and are now also exploring potential commercial fisheries in the Antarctic and South Pacific.[163]

One of the main areas of interest in ocean research is physical oceanography, including the study of sea waves, currents, tides and ice covers on the oceans. The USSR has also concentrated on hydrometeorological studies of the Polar Navigational Route[164] and is expected to continue weather studies in the Arctic and Antarctic. Two major research programs were launched in the 1970's--"Polar Experiment North" and "Polar Experiment South."[165]

The USSR conducts biological oceanographic research as well as chemical oceanographic research on the properties of sea water. Geology and geophysics are also studied, focusing on the theoretical aspects of ocean geology, the development of tectonics in the lithosphere and the theory of oceanic sedimentation. The USSR has in recent years become involved in continuous seismic profiling and deep water seismic sounding. In addition, the USSR has carried out

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[163]Conversations with Dr. Bruce Collette, NMFS, NOAA, Washington, D.C. in July 1989. The majority of these vessels are old converted fishing ships and lack the necessary scientific equipment, laboratories, computers, and express-analysis instrumentation to successfully do research. The USSR is in the process of installing electronic processing equipment onboard their vessels to process data quickly and utilize results in a much shorter time.

[164]As a result, the USSR has had a year round open route in the western part of the Arctic Ocean since 1980 as well as increased safety and protection of the Soviet fleet and fishing fleet in the Antarctic waters.

[165]Kaczynski, "The Status and Potential of the Soviet Ocean Science after 200 Mile Economic Zone," pp. 4-5.

oil and gas research in its internal waters and coastal seas. Some of this research has been done in cooperation with Japan and is continuing with East Germany and Poland.[166]

Scientific cooperation is based on multilateral and bilateral agreements, the most important of which is the intergovernmental Agreement of the Socialist Countries on Scientific-Technical Cooperation, signed July 28, 1962. Known as the "Six Country Agreement," this was originally signed by the USSR, Poland, East Germany, Romania and Bulgaria, followed by Cuba in 1978. The document concentrates on applied research that benefits the fishing industry. As part of the agreement, 16 institutes and laboratories are involved in joint scientific research located in the member countries. The Council of Mutual Economic Assistance (COMECON) "Project XIII-4 World Ocean" is another multilateral agreement within the framework of the Eastern Bloc. This program is located in the P.P. Shirshov Institute of Oceanology in Moscow. Its main objective is to develop joint chemical, physical, biological and other oceanographic research to benefit the parties involved.

Cooperation within the Soviet Bloc takes the form of scientific conferences, joint publications, cooperative research expeditions, and joint research. The First International Expedition "Open Atlantic" was held in 1978 in conjunction with other Communist Bloc countries to better understand resource opportunities outside national jurisdiction. Soviet Bloc research operations also have been conducted on the open seamounts and plateaus in the Southeast Atlantic--Tristan de Cunha, Discovery Bank, Bouvet, Meteor Bank, Walvis Bank, and Walvis Ridge.[167]

In addition, the USSR has signed bilateral agreements with the West and with developing nations in order to assure research access to the coastal zones of these countries. Soviet fishery specialists also are involved in aid programs and consulting to developing Communist nations, such as Vietnam, North Korea, and the People's

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[166]*Ibid.*, p. 6.

[167]Kaczynski, "The Status and Potential of the Soviet Ocean Science after 200 Mile Economic Zone," pp. 35-38.

Republic of China (PRC) as well as several African and Latin American countries. In addition, the USSR has also become involved in international bodies such as the International Council for Exploration of the Seas, North Atlantic Fishery Organization, Commission for East Central Atlantic Fisheries, and the Baltic Convention.

Soviet research has sometimes been conducted in conjunction with international projects such as International Geophysical Year (1957-1959), International Indian Ocean Expedition (1959-1964), International Geodynamic Project (1971-1980). The Soviets vessels, the *Akademik Kurchatov, Dmitrii Mendelejev, Professor Shtokman, Akademik Vernatskii,* and the *Mikhail Lomonsov* participated in these expeditions.[168]

Research in the Soviet Union is managed by a variety of organizations with overlapping management responsibility. *Gosplan* coordinates the planning of Soviet research. The Academy of Sciences of the USSR primarily conducts research and is responsible for coordinating research operations and aid in the introduction of new equipment. This organization receives assistance from relevant ministries and agencies planning economic development.

Additional organizations have been set-up within the USSR to oversee its research operations, including the Oceanographic Commission of the Academy of Sciences and the Scientific Council for Study of Oceans and Seas. The latter body is composed of members from the Ministries of Fisheries, Defense, Geology, Transport, and the Academy of Science. In addition, the State Committee for Science and Technology uses a system of science councils to coordinate research across institutional lines.

Within the USSR, the ACY OP management information system has been developed to manage the fishing industry. This includes the system servicing the Ministry of Fisheries and the All-Union Associations' staffs as well as special purpose complex programs designed for long-term and short-term planning.[169] In addition, the

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[168]*Ibid.*, pp. 5-6.

[169]*Inrybprom* Marketing Materials, p. 187.

fishing industry set up its own scientific and technical information system in the early 1970's. This system caters to the needs of 282,000 subscribers including researchers, theoreticians, and the managers involved in scientific policy-making. In one year, 252 officials in the various departments and regions of the Ministry of Fisheries were issued 8,700 pieces of information accessed from this system. Additional modernized systems are expected to be introduced in the early 1990's.[170]

While basic research is the primary responsibility of the USSR Academy of Science, most applied research is centered in industrial ministries. Most marine-related research is done at one of the 100 specialized institutes such as the P.P. Shirshov Institute of Oceanology, the Acoustics Institute, and the Institute for Microbiology. The Ukranian Academy of Sciences is located near the Black Sea in Sevastopol. Environmental research is conducted by the Chief Directorate of the Hydrometeorological Service in Moscow, the Far Eastern Hydrometeorological Scientific Research Institute in Vladivostok, and the Arctic and Antarctic Research Institute in Leningrad. Other research is carried out under the State Industrial Fisheries Committee, the Hydrographic Service of the Navy, and the All-Union Scientific Research Institute of Marine Geology and Geophysics in Latvia.

The Ministry of Fisheries has its own network of science and research facilities including VNIRO, AtlantNIRO, the Baltic Institute of Fisheries in Riga, PINRO,[171] TINRO, AzcherNIRO, and KaspNIRO employing a total number of 2,400 scientists. An important part of their work is to develop an adequate total allowable catch (TAC) for the different fisheries to effectively manage the fisheries.

The TAC is calculated using past and present periods as the scientific basis for state annual plans for the fishing harvest. These include recommendations from a survey of 100 species in 27 major fishing areas in which are deployed the Ministry's fleet of medium

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[170] *Ibid.*, pp. 211-212.

[171] In fact it was a researcher named Konstantinov at PINRO who caused so many problems by proclaiming the "inexhaustibility" of the Barents fish stocks during the years 1954-1968.

and large tonnage research vessels. Several different independent methods are used to determine the stock size. If the numbers are similar from the different methods, then the number is considered a reliable measurement.[172]

Investment in Soviet research has been high. In 1968, 37 million rubles were spent on scientific development in the fishing industry. Almost three and a half times as much was spent 20 years later. In 1989, the Ministry of Fisheries spent 122 million rubles for studies of biological resources, including 88.1 million rubles for expenditures on the research fleet.[173]

Noting the inexperience of the new seamen, the Ministry ordered specially built training vessels. In 1950, the USSR had two training vessels and over 20 by the mid-1970's, with a total GRT of 67,054 tons, the largest in the world. One half of the new vessels were built in East Germany, the remaining were purchased from Poland and Denmark. Four of the later vessels were built in the Soviet Union as its capabilities improved.[174]

The regional fisheries administrations apparently assume the operational expense of the training vessels and use the profit from the catch to help reduce expenses. The Western Administration was the first to have training vessels in 1963, and by 1975 had nine vessels including an East German stern trawler. The Azov-Black Sea Administration operate three vessels, including a 1969 Danish vessel of the *Grumant* class and an East German vessel built in 1973. The Far Eastern Administration fleet became the most modern after the delivery of three East German super trawlers of the *Atlantik* class specifically designed as training vessels. This region now has six training vessels all constructed after 1968 with a total gross tonnage of 25,000 tons.

As part of its research program, the Soviet Union has invested heavily in its training programs, but apparently has not developed

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[172]Correspondence with Dr. Teplitsky and conversations with Captain Tkachenko.

[173]Press Release May 1989.

[174]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 439.

an apprenticeship program on commercial vessels. However, the current emphasis on training shows a shift in thinking from using schools as a dumping ground for obsolete ships to making training an important segment of the fishing industry.

Part of the extensive training investment has been to improve the education system. Although a fisheries school system has been in place since the Revolution, today the Ministry of Fisheries has turned fishing into a highly skilled profession, with a developed free education system of secondary and university school programs. These are administered through the Office of Personnel and Educational Institutions with branches in the five territorial administrations of the Ministry. Approximately 10,000 students graduate from the secondary and higher fishery schools system each year. Current student to professor ratios are approximately 20-25:1. An unusually high percentage of these professors belong to the Communist Party. By the mid-1970's, there were over 3,000 full-time professors in the school system with 7,000 assistants.[175] In addition, over 1,300 foreign students from more than 60 countries study at the fishery schools.[176]

The system has a wide variety of education programs. The lowest level is a trade school for eighth grade graduates. This is a one to two year program offered through six Fisheries Trade Schools and one *Kolkhoz* Training School. Secondary schools, developed to train officers, are offered through 15 Secondary Fishery Schools and 10 Secondary Coastal Fisheries Schools which specialize in the coastal and inland water fisheries. The higher education institutions are equivalent to the American system of colleges and universities.

Fishing Industry Institutes have been created to train engineers, economists, and ichthyologists for employment in the fishing industry. These include the Astrakhan Fishing Institute founded in 1930; the Kalingrad Fishing Institute founded in 1930 in Moscow and moved to Kalingrad in 1958 with a branch in Riga; and

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[175]*Ibid.*, p. 386. The large number of Communists may be the result of government pressure due to the amount of investment in the schools. In the 1970's, the Ministry spent the equivalent of US$ 1,050 per student per year.

[176]*Inrybprom* Marketing Materials, p. 8.

the Far Eastern Fishing Institute founded in 1950 in Vladivostok with a branch in Petropavlosk-Kamchatskii. At these institutes training is provided in ship building and repairs; machinery and equipment for food production; ship machinery and mechanisms; ship propulsion units; ship electrical equipment; automation and full mechanization of chemical production; commercial fishing, ichthyology and pisciculture, navigation on seaways, operation of water transport, economics, and the organization of the foodstuffs industry. These institutes have day, evening, and correspondence divisions in undergraduate and graduate programs.[177]

Candidates for the fishing industry schools are abundant since the industry pays twice to three times the salary paid to most Soviet workers.[178] For example, during the 1970's, deckhands on a freezer trawler earned as much as US$ 600 a month and captains over US$ 1,000 whereas the average Soviet worker earned approximately US$ 200.

Stories abound about the horrendous living conditions onboard Soviet vessels. One defector, Captain Lysenko wrote an entire book on the harsh reality of life on a Soviet fishing ship when crewmen were expected to salt and gut fish 16 hours a day. In accordance with decisions made in the 26th Congress and the Soviet Food Program, the government has made a public effort to improve the environment[179] of the fishermen and in addition, provide them with recreation and rest facilities onboard vessels during long voyages. Even the workers' diet seems to have improved. Apparently, now the crew no longer is forced to eat canned fish even though they are

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[177]Also offering a selection of day, evening and correspondence courses, are the Murmansk and Kalingrad higher schools of maritime engineering.

[178]United States Department of Commerce, Fisheries of the U.S.S.R., 1976, p. 428.

[179]Conversations with Captain Tkachenko and Dr. Bruce Collette who has participated on several joint expeditions.

"wading" in fresh fish or even having to buy food in order not to starve.[180]

Accommodations have also improved as a result of government attention to the welfare of the crews on the distant water fleets. Even one American observer on a Soviet vessel said recently that the environment onboard ship has improved considerably in recent years.[181] Crew members are accommodated in single and double berth cabins. Ships have saunas, shower stalls, laundries, dining rooms, and rest and recreation facilities. Many of the larger vessels operate shops trading in essentials. All medium and large tonnage ships have medical bays, and floating bases and factories have surgeries, dentists and X-ray rooms. The fleet employs approximately 2,000 skilled physicians and paramedical personnel. All medical care, treatment and drugs are financed by the state.[182]

Seaman are provided with free bed, clothes, and food. Meals are the same quality for all members regardless of rank. The diet is designed by medical scientists specifically for each region. All medium and large tonnage ships have radio telephones so that crewmen can speak with their families. The fleet has a total of 6,000 radio sets, 2,000 television, 3,500 film projectors and video recorders. The film industry produces approximately 90 new feature films, 80 documentaries, 50 animated cartoons and dozens of popular science and training films in more than 50,000 copies for onboard projectors. In addition, there are about 3,000 onboard libraries with up to 3,000 books per library. Each ship receives annually a total of 57,000 copies of up to 50 different newspapers. More than 2,000 ships have onboard fax machines which receive bulletins. Many ships have gyms and weight rooms, musical instruments, table games and sports gear. On shore there are 22 rest homes, 45 stadiums, 20 gyms, 2 swimming pools, three yacht clubs, 12 health-building bases, and 19 fishing and hunting lodges for use by the fishermen and their

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[180]Lysenko, A Crime Against the World, pp. 30-32 and p. 37. "In general the men, in true Russian fashion, accepted the situation as inevitable and did their best to adapt to it in order to keep up their earnings."

[181]Conversation with Dr. Bruce Collette in July 1989.

[182]*Inrybprom* Marketing Materials, p. 208.

families.[183] This may be propaganda since the welfare of the Soviet people has never been a priority to the Soviet government.

The Soviets now appear to realize that only through extensive research, training, and education will the Soviet fleet be modernized and competitive enough to provide a harvest capable of supplying food to the population.

Summary

The importance of research to the Soviet fishing industry has grown rapidly as new techniques become necessary to find stocks in remote oceans. The Soviets have been interested in marine research since the Revolution, and now the Soviet research fleet has surpassed that of the United States. Despite the size and number of the Soviet vessels, they lack the necessary technology and so the USSR has purchased much of its research fleet and equipment outside the USSR.

The Soviets use research as leverage in the international scientific community to gain access to foreign findings. In addition, Soviet vessels have participated in international expeditions and have signed bilateral agreements to assure access to coastal zones.

Educational and training programs enhance the Soviet research program and have developed fishing into a highly skilled profession with a more suitable onboard environment.

[183] *Ibid.*, p. 209.

Soviet Political and Economic Ties

An indepth study of Soviet global fishing agreements and joint ventures with special emphasis on these after the implementation of the EEZ.

The general introduction of the EEZ during the 1970's changed the economic and political face of the world oceans. Now 95% of the world's commercially harvested stocks are under coastal state jurisdiction. Nations with large distant water fleets like the Soviet Union and Japan were greatly affected by the closure of their traditional fishing grounds.

In the post-EEZ period, politics in addition to technology have played a major role in the Soviet fleet's harvesting capability. Previously, as the major stocks declined, the USSR became dependent on more and more sophisticated technology to find the remaining fish and to discover new species. Now, instead of operating at will, the USSR has been forced to negotiate for access to fishing grounds in the deeper waters off coastal African States, the South Pacific, the West Central Atlantic, and Pacific Oceans.

The Soviet Union has had to increase its political and economic ties worldwide through aid programs, bilateral treaties, and joint ventures. By May 1989, the USSR had signed intergovernmental fishing agreements with 44 countries and participated in 14 joint ventures related to the fishing industry on Soviet soil and 16 additional ventures abroad. The USSR also presently participates in international organizations, such as the Convention for the Preservation of Living Resources of Antarctica. In fact, the USSR "thinks it is important to actively participate in international management organizations," and membership in the Food and Agriculture Organization of the United Nations (FAO), opposed by the Ministry of Fisheries for many years is expected to be sought in the near future.[184]

Under aid agreements, the USSR has donated or loaned fishing vessels to the developing coastal state as well as trained their fishermen locally, onboard Soviet vessels, and even at Soviet education facilities. In addition, the USSR has helped developing

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[184]Correspondence with Dr. Artemy A. Saguirian, Institute of World Economy and International Relations, Moscow, dated June 15, 1989.

countries create a fishing infrastructure by aiding in the construction of shore facilities, including processing plants, canning factories, and ship repair facilities. The USSR has also surveyed local resources which benefits both countries. In addition, aid packages, as well the other types of agreements, usually have provisions to permit the establishment of local fisheries offices as well as landing rights for *Aeroflot* for crew changes.

Developing nations were initially eager to enter into fishery agreements with the USSR, motivated by the potential hard currency, technical equipment, and knowledge the relationship would bring. Their enthusiasm has waned in recent years with complaints that the USSR has abused the fishing privileges given to them by the coastal state, including fishing above the quota and supplying the coastal state with inferior quality fish to fulfill the Soviet part of the contract.

In additional to aid and cooperation pacts, the USSR has 70 agent agreements to repair the Soviet fleet, and "is thankful to its partners for high quality service" in the ports of the German Democratic Republic (GDR), Poland, Bulgaria, Romania, Yugoslavia, Denmark, Spain, Argentina, Peru, Finland, New Zealand, Singapore, Morocco, Angola, Canada, and the United States.[185]

Of all these arrangements, joint ventures are receiving the most attention. A joint venture is a commercial relationship between two or more partners who share the profit and loss from a specific business venture. In the fishing industry, the partners are usually governments or private interests. In general, the coastal state has the resources but lacks the expertise. The foreign partner has the technical know-how but lacks access to the resources. The coastal state will often use a joint venture as a way to develop its resources and improve the domestic infrastructure of its fishing industry. The country also benefits from the increased efficiency of its operations from incorporating Soviet expertise. A major motivation for a joint venture is to increase the fish harvest without increasing costs. In addition, all partners benefit from selling the catch on either

[185]Press Release May 1989.

partner's domestic market or the international market to earn hard currency.[186] Also, the joint venture increases employment opportunities as well as supplies additional food to the local population.

The foreign partner benefits from the joint venture by gaining access to restricted fishing grounds and employing its distant water fleet to produce hard currency and to attain food for its population. In the case of the USSR, these ventures also have been used to gain political influence in the developing countries. In return, through research cooperation programs, the USSR gains knowledge of hydrographic and geophysical data of the area which can have military and economic importance.

Two basic types of joint ventures exist. In regards to the fishing industry, the first is a short-term arrangement which contracts a single venture like a survey project. The second is an equity venture, usually an ongoing commercial arrangement forming a jointly-owned company. Trawlfish are the primary target of this type of venture. Although the USSR participates in both these types of ventures, the majority of their partnerships are equity ventures which involve catching and processing at sea.[187] In most Soviet ventures, local fishermen catch the fish which is then processed by the nearby Soviet factory ships.

The joint venture contract details the business arrangement concerning fisheries, fishing gear, fish processing or marketing to be entered into among the partners. The contract covers the percentage of equity, location of the headquarters of the company, fiscal favoritism under national law, training, and exchange of information.

The idea of a joint venture is relatively new to the Soviet mind. Although there was "some discussion of encouraging foreign capital

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[186]If the fish is marketed in the domestic market, the foreign partner may receive hard currency or payment in kind such as an increased national quota and/or servicing of its fleet in the local ports. In addition, the fish may be sold in the foreign partner's domestic market.

[187]This is unlike the Japanese who tend to concentrate their partnerships in land-based processing companies in the United States and Canada.

in the 1920's,"[188] the concept was generally not popular until the April 1985 Plenum as part of *Perestroika*. By January 1, 1989, 191 joint ventures had been registered on Soviet territory, but only a small number of these is associated with the fishing industry.[189]

Under the new rules of *Perestroika*,[190] the Soviet Union guarantees the security of the foreign partner's property and its right to transfer profits. Joint ventures also receive special privileges in that they receive priority status for building requirements. They can work outside the state plan as well as handle their own import and export activities. The state can tax the joint venture up to 30%, although this is reduced during the first years of activity. Earnings abroad are taxed at 20%, making it profitable for the enterprise to use its earnings for growth or re-equipment. Although the venture must conform to Soviet labor laws, the state pays the workers' benefits. In the case of disagreements or the closing down of the ventures, decisions are subject to international regulations.

In December 1988, the Council of Ministers further liberalized the conditions for joint ventures in the decree "Further Developments in Foreign Economic Relations." Under this decree, after 1989, the share of capital in Soviet and foreign hands no longer is regulated and can be decided by agreement where previously there was a 51% Soviet control mandated. Now the chairman and general manager can be citizens of a foreign country, and company decisions can be decided by consensus rather than solely by the Soviet participants. Special allowances are given to companies producing necessary consumer goods and also to companies willing to operate in the Far East. The USSR is also looking into the possibility of creating a special economic zone, probably located in the Far East.[191]

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[188] Aganbegyan, Inside *Perestroika*, p. 107.

[189] *Ibid.*, p. 197. Several hundred more joint ventures are under consideration. The total capital in joint ventures in the USSR is almost US$ 1 billion, but by making the ruble convertible and becoming more competitive, the USSR will receive additional money. For example, the PRC has US$ 20 billion in capital investment and over 10,000 joint ventures.

[190] Please refer to Appendix I for a copy of the latest draft law on Soviet joint ventures.

[191] Aganbegyan, Inside *Perestroika*, pp. 204-206.

Despite these measures, problems still remain particularly the inconvertibility of the ruble. This has been recently addressed, and the ruble was devalued 1.6 times in an attempt to price the currency more closely to its market worth. Complete convertibility is currently being discussed.[192] No specific ideas are being mentioned publicly by the Soviets. Even at a June 1990 Soviet-Silicon Valley business summit, the Soviet delegation agreed that total convertibility was desirable, but was unable or unwilling to suggest a feasible method to do this.[193]

Another major obstacle to the setting up of joint ventures is the inability of the supply and distribution system to handle the flow of goods in the Soviet Union. For example, in the fishing industry as much as 30 to 50% of the catch spoils on the way to market because of a lack of refrigeration and processing facilities.[194] In addition, the rail and road systems are inadequate to handle transportation of the harvest between the ports and the population centers. The government has committed funds to resolving these problems of major spoilage.

Currently, there are plans to improve the food-processing industry and build storage facilities. Some of these kinds of equipment will be purchased from West Germany and financed by either foreign credits or through joint ventures. Additional equipment will be produced by Soviet factories including those managed by the defense industry. One short term measure has been

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[192]*Ibid.*, p. 221.

> The rouble can become convertible on the world market only if the Soviet Union and other socialist countries are no longer subjected to artificial discrimination and restrictions in their foreign economic activities, if there is economic security for all states.

[193]The Soviet-Silicon Valley Summit was held in Santa Clara, California during June 1990. A Soviet delegation of engineers, scientists, and politicians met with business leaders in the high tech industry to discuss joint venture opportunities. I attended the seminar part of the conference which discussed business opportunities in the USSR. This type of conference would have been unimaginable only a few years ago.

[194]Marshall I. Goldman, Gorbachev's Challenge, W.W. Norton & Co., NY, 1987, pp. 37-38.

to use some of the Soviet ships equipped with refrigeration facilities which have been withdrawn from the American EEZ as port cold storage facilities until onshore plants can be built.

All practical export activity, including the creation of joint ventures and conducting cooperative transactions, are now left up to the local organization on the spot. Currently, ventures themselves determine with whom they will collaborate and in what direction. However, it is "natural" that such collaborations are carried out under "supervision."[195] The Ministry is still responsible for working out the overall strategy for trade activities, including the planning and control for the execution of export/import operations, and control over state interest and laws concerning the joint ventures.

Soviet joint ventures in the fishing industry operate through *Sovrybflot*. The joint venture company acts as a commercial enterprise and shares its profits with *Sovrybflot* on an agreed basis. Local port and service facilities are usually provided for the Soviet fishing fleet. A portion of the joint venture's catch is marketed locally. The remainder is retained by the USSR for domestic consumption or re-export. *Sovrybflot* has organized 11 joint companies and two joint expeditions. In 1988 joint ventures were organized with companies in Sweden, Finland, Japan, the United States, Singapore, and West Germany.[196] Currently, *Sovrybflot* is negotiating a joint venture with a West German company, *Sokop*, to refit the Soviet fleet, and additional *Sovrybflot* negotiations have

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[195]Press Release May 1989.

[196]*Ibid.* In 1988 the following joint ventures were organized:
-Soviet-Swedish joint venture on marine resources called "Neptune"
-Soviet-Finish joint venture called *Esva*
-Soviet-US joint venture called *Sovelan Aroma*
-Soviet-Japanese joint venture called *Pilenga Godo*
-Soviet-Japanese joint venture called "Diana"
-Soviet-West German joint venture called *Allimpeks*
-Soviet-West German joint venture called *Alinter*
-Soviet-Singapore joint venture called "Atol"
-Soviet-Japanese joint venture called *Okhotsk Suisan*.

begun for joint ventures with six developing nations, Angola, Morocco, Tanzania, Liberia, India, and Korea.[197]

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[197]Press Release May 1989. *Sovrybflot* is now responsible for:

-export and import of fish and sea products, canned fish and sea products
-organization of work of fleet in EEZ or foreign countries on a licensed basis and other commercial conditions as well as carries out fish exchange operations, i.e. fresh fish for fish goods
-import of ship equipment, packaging and processing production equipment and other navigational and fish finding equipment, refrigerators, and other commercial goods for the Ministry
-import of technology goods on a barter basis
-agenting supply and repair of vessels of the Ministry in foreign ports as well as the transport of ship crews to and from foreign ports
-purchase and exchange operations with regard to fuel for the fleet
-charter of vessels of the Soviet fleet for transport of cargos from Soviet organizations and foreign charters. Also charters foreign transport ships for distribution of Soviet fish products to foreign buyers
-creation and work of joint ventures and of fishing expeditions outside the USSR
-legal defense and arbitration abroad of Ministry vessels and property
-capital repair and refitting of fleet abroad
-free market work on all commercial operations
-advertising and presentation of fish products at international expositions and fairs
-technical collaboration with developing countries on planning, building and fisheries and use of fleet.

The Ministry has recently created these entities to efficiently fulfill export operations and intermediary activities:

-*Moreprodukt* is involved in the export and import of fish
-*Okean* is an organization of work of vessels of the Ministry in foreign zones and of foreign fleets fishing inside the Soviet EEZ Also involved in the purchase of raw fish from foreign fishermen at sea and with the appropriate preparation on Soviet ships
-*Inrybmash* is involved in the import of various types of fish processing equipment; refrigeration; tin can producing, different

Since its creation in 1964, *Sovrybflot's* activities have expanded considerably. In 1988, the operations resulted in a turnover of over one billion rubles, including 700 million rubles in import/export activities. In addition to its joint venture responsibilities, *Sovrybflot* handles the import and export of all fish and sea products as well as the import of ship hardware, including packaging, processing, and navigational equipment needed by the Ministry. *Sovrybflot* also organizes and oversees the repair of vessels overseas, and handles the shipchandler service for an average of 6,700 Ministry vessels and the in-port technical service for 1,500 vessels each year. In addition, over 150,000 crew members and repairmen are transported annually by *Aeroflot* from Moscow to the foreign fisheries and back.

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types of packaging; fish breeding equipment; oceanographic equipment including navigation equipment and fish finding equipment; computers; and is involved in the export of fish processing equipment manufactured by the Ministry

-*Tekhsnabzhenie* is involved in the importing of packaging materials and technological supplies including olive oil and the flavor and aromatic additives; spices; cans; special clothing and chemical goods

-*Flot* is the agent organization or shipchandler (supplier for ships) which supplies Soviet vessels in foreign ports and is involved in the purchase and trade operations of fuel

-*Sudoservis* is involved in the organization of in port repairs of vessels in foreign ports and also handles the airline transportation for crew members and repair teams to and from the ports

-*Sudoremont* is involved in capital repairs and refitting of the Soviet fleet overseas, the sale of ships for scrap, and the leasing of ships which eventually become the property of the Ministry

-*Inrybfrakht* is responsible for the chartering of foreign transport vessels for carrying export cargos for the Ministry

-*Tekhsodeistvie* collaborates in the planning, construction and utilizing of the coastal fisheries and is responsible for full utilization of national fleets of developing countries.

Sovrybflot carries out the "technical collaboration" with developing nations on planning and constructing local industry infrastructure, as well as overseeing the training local fishermen. For example, in 1988, *Sovrybflot* aided in developing the national fishing industries in Cuba, Poland, Vietnam, Nicaragua, Angola, Mozambique, Yemen, and Mauritania.

Several other organizations have been formed to "efficiently" handle the Soviet export operations under *Sovrybflot*. These include a number of overlapping bureaucratic entities such as *Moreprodukt* which is directly involved in exporting fish products; *Okean* which purchases fish from foreign fishermen at sea; and *Flot* which handles the provisioning of ships in foreign ports as well as purchasing fuel for these ships.

The current trend in the USSR to become more consumer-oriented is evident in the Ministry of Fisheries. As a result, *Sovrybflot* has created three specialized marketing divisions--a term virtually unheard of in the pre-*Perestroika* period. The first division analyzes the market and demand for products, while the second is responsible for developing new products to satisfy consumer preference. The third division is a marketing and advertising group to educate the public on fish and fish products. As an increasing percentage of the Soviet catch is from unpopular species, this Soviet "Madison Avenue" has an enormous task to attract consumers.

Sovrybflot represents the Soviet government in its joint venture activities. *Sovrybflot* has traditionally avoided capital intensive projects since the Soviet Union learned its lesson in Egypt during the 1970's. The Soviets invested heavily in the construction of the Aswan Dam hoping for a high presence in the Third World, but were expelled by Anwar Sadat gaining no political or economic return on the investment. The USSR now focuses on lower risk, less capital intensive projects. The advantage of fishing vessels is that these are mobile and repayment is usually in resource access, fish,

and domestic market access as opposed to hard currency so repayment is more likely.[198]

The following examination of Soviet political and commercial relations globally is broken down alphabetically by area: Africa, Latin America and the Caribbean, South Pacific, North America, Asia, and Europe. Each section discusses the more important aid packages, bilateral treaties and joint ventures entered into by the Soviets on a country by country basis. In general, the USSR has been most eager to encourage relationships with developing countries in Africa, Latin America, and the South Pacific. These ties that began as aid packages in the 1960's and 1970's, progressed to access agreements in the post-EEZ period, and more recently, to joint ventures. Joint ventures received a great deal of attention in the 1980's, but future prospects are not as favorable for the current decade as coastal states become more self-sufficient in their fishing industries.

Soviet agreements and joint ventures have focused particularly on the fertile fisheries off the African coast. Like the Latin Americans, many of the African nations declared economic zones in response to the Soviet onslaught. Unlike the Argentines, most African countries have limited enforcement capabilities and fear routine Soviet violations of their coastal zones.[199] African officials had hoped for more significant assistance from the Soviets in developing their local fishing industries. Some officials believe that the USSR under-reports its catch, and as a result, Mauritania, Morocco, and Somalia have terminated their agreements with the USSR. These countries have approached the West for more profitable arrangements. However, the USSR still has many fishing arrangements in this region including ties with Angola, Guinea Bissau, Mozambique, Senegal, and Sierra Leon. Currently, there are

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[198]Vladimir Kaczynski,"Joint Fishery Ventures and Three Ocean Powers," Paper prepared at the University of Washington, Seattle, WA, 1983, pp. 51-52.

[199]Notes from meetings with Theo Brainard at the University of Rhode Island, Kingston, RI, and subsequent correspondence.

no Soviet operations off the Ivory Coast. Discussions for a joint venture with Liberia are currently in progress.[200]

Angola, the People's Republic of Angola, first signed a fisheries cooperation agreement with the Soviets in April 1977 which provided for unlimited Soviet fishing and research access in exchange for 12% of the catch and assistance in rebuilding the Angolan fishing industry. In addition, the USSR agreed to train Angolan fishermen both locally and in the USSR and to deliver 10 fishing boats to Angola as partial payment for the fishing rights. The agreement was not as favorable to the Soviets as they had hoped because of depleted local resources. The total harvest was only a small percentage of its pre-independence level in 1975 of 450,000 tons. For example, in Benguela, one of the two main fishing provinces, only 32,698 tons were landed in 1983, 81% below target.[201] Angola signed an additional pact in Moscow on January 13, 1984 which guaranteed them Soviet funding for the construction of an Angolan fish processing plant. Today, Soviet relations with Angola appear to be more political than economic because of the overfished waters.

The Soviets had an agreement with Guinea during the Sekou Toure administration. This arrangement allowed 15 Soviet vessels to operate in the Guinean waters as long as 12,000 metric tons were landed in Conkary each year.[202] Their recent relations with the USSR have been strained.[203] The implementation of a new government policy on fishing precluded any additional agreements with the Soviets.

Relations also have been tense with Guinea-Bissau. The Soviets have been particularly interested in signing an agreement with this country as the fishing grounds apparently contain the largest

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[200]Other agreements include Gambia (1975), Ghana (1963), Seychelles (1978), Sao Tome (1981).

[201]"Soviet Fishing off the Developing Countries," p. 3.

[202]Correspondence with Marc Taconet, UN Representative, Dakar, Senegal, dated November 28, 1989.

[203]Kaczynski, "Joint Fishery Ventures and Three Ocean Powers," pp. 51-52.

biomass off northwest Africa.[204] Their EEZ extends approximately 70,000 square kilometers to 150 kilometers from the outer islands of the Bijagos Archipelago. The maximum sustainable yield (MSY) for this area has been estimated to be 300,000 metric tons, up 50% from previous estimates because of a recent increase in triggerfish.[205] The industry has been developed through joint venture agreements with the Soviet Union and the European Community (EC) and now fish rank number two after agriculture as the country's most important export.[206]

A joint venture, *Estrela do Mar*, was formed in June 1975 between *Sovrybflot* and Guinea-Bissau in which the latter held 51%. Despite this division of equity, in reality, the Soviets manage the company.[207] *Estrela do Mar* has two objectives: to increase the domestic supply of fish and to export valuable seafood to earn hard currency. The venture operates 10 trawlers with freezing capabilities to fish primarily for shrimp and demersal stocks. Trans-shipments take place at sea because the capital of Bissau has no shore facilities or onshore freezing capacity. The number of vessels in this venture was increased to 14 vessels in 1982. Eight of these are owned by the joint venture, and all 14 vessels are medium-size Soviet trawlers built in the 1970's[208] and are manned by Soviet officers under the Guinea-Bissau flag.[209] The USSR provides fuel, equipment, gear and spare parts as well as technical and managerial

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[204]Bruce Epler, "The Fisheries of Guinea Bissau," Working Paper #7, International Center for Marine Resource Development, University of Rhode Island, Kingston, RI, June 1983, p. 3.

[205]*Ibid.* Approximately 90% of the resource is offshore, 75% pelagic , 16% demersal, 5% tuna and the remaining mostly shrimp. The coastal fishery is 95% fin fish and 5% shrimp.

[206]*Ibid.*, pp. 8-10. The Guinea-Bissau fishing industry is made up of three sectors, the artisanal, industrial, and foreign fleets. The first is made up of approximately 3,000 vessels, mostly canoes, some of which are motorized. The industrial sector is more capital intensive, composed of vessels purchased through joint ventures. The foreign fleet is made up primarily of Soviet and EC vessels which are permitted to fish in the territorial waters by bilateral agreements.

[207]Correspondence with Marc Taconet dated November 28, 1989.

[208]Epler, "The Fisheries of Guinea Bissau," p. 11.

[209]Correspondence with Marc Taconet dated November 28, 1989.

assistance to oversee joint venture operations. Most vessel repairs are done in the USSR, but some minor work has been done in Las Palmas and Dakar. The company's primary trading partners have been Portugal, Senegal, and Las Palmas, Spain. The company currently is looking to expand into France and Nigeria.[210]

Guinea-Bissau has tried to increase the economic benefits of its fishery resources through an increased number of joint ventures and licensing of foreign vessels with other countries. With the exception of *Estrela do Mar*, these attempts have been unsuccessful because of the country's lack of port facilities and supplies. In addition, the country suffers from a generally depressed economy and an undependable source of fuel. Also, there is a lack of ability for surveillance and few reliable statistics. Although Guinea-Bissau officials complain that a number of foreign vessels illegally fish in coastal waters, only two were actually verified according to 1982 statistics, pointing up the country's lack of surveillance capability.

In addition to *Estrela do Mar*, the USSR has an agreement with Guinea-Bissau which did allow 40 Soviet vessels fishing access to operate 150 miles off the coast. The number was reduced because of overfishing and is currently down to 22 Soviet vessels.[211] Under this arrangement, the USSR pays 15% of the value of the catch to the local government and trains local personnel in the Soviet Union. The government has used the money from the USSR to construct onshore freezing facilities capable of freezing 10 tons of fish each day and storing 6,000 metric tons of fish.[212] Fifty percent of the catch is processed and frozen, and the remaining is made into fish meal.

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[210]*Ibid.*

[211]Conversation with Dr. Bruce Epler, University of Rhode Island, Kingston, RI, in June 1988. The exact terms of the agreement are not known, but it appears that Guinea-Bissau receives a percentage of the total value of the catch. Statistics on Soviet activity are the trip sheets sent to the Guinea-Bissau Statistics Department which identify the vessel, including information of GRT, motor size, etc. as well as information on fishing effort and catch. A secondary source of data is from letters sent by the Soviet fishery representative in Bissau. These cover a 10 day span and report the registration numbers of the Soviet vessels, total catch by gear type, quantity of fishmeal produced and quantity of frozen fish processed by species.

[212]Kaczynski,"Joint Fishery Ventures and Three Ocean Powers," p. 53.

Equatorial Guinea gave the USSR a virtual fishing monopoly under its 1973 fishing agreement with the Macias Nguema regime. This agreement included Soviet access to the port of Luba for supplies and crew exchange. In exchange, Equatorial Guinea received fish, access to Soviet research, and training in the USSR. The agreement was not renewed when it expired in January 1980 as the new government wanted to develop its own fishing industry. Under the terms of the Soviet agreement, nationals were not allowed to participate in fishing operations. All Soviet personnel were expelled at this time.[213]

Mauritania's fishing industry has been the driving force of its economy. The waters have a potential harvest of over 600,000 tons a year. Regulations ensure the catch is processed locally through a Mauritania company to benefit the domestic economy.[214] The Soviets set up a joint fishing venture, *La Maussov*, in June 1978. As part of this venture, the Soviets supply the fishing vessels, freezing equipment, and 49% of the capital. The vessels harvest primarily small pelagic fish.

The USSR also has signed an agreement with Mauritania providing fishing access to Soviet trawlers in exchange for a US$ 2.1 million investment in a fishery institute and a canning and cold storage facility. In addition, the Soviets provide 25 trawlers and two training vessels to Mauritania to be used off their coast to harvest squid, octopus, and fin fish.

The USSR signed an agreement in 1974 allowing Soviet access to Moroccan waters in exchange for building processing and cold storage facilities in that country. The government has signed agreements with the USSR to aid in the development of the phosphate industry, agricultural and industrial commodity exchanges, and expansion of the fishing industry.[215] Morocco

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[213]*Ibid.*, p. 64.

[214]Correspondence with Marc Taconet dated November 28, 1989.

[215]"Morocco--Difficult Two Years Lie Ahead, but Long Term Prospects are Favorable, " Business America, November 6, 1978, V. 1, N. 2, pp. 12-13.

appears also to be interested in negotiating a fishing access agreement with the Soviet Union.[216]

A joint equity venture was created in the late 1970's between Mozambique and *Sovrybflot* called *Sociedad Mozambicana De Pescas*, or *Mosopescas*. The Soviets supplied research information and training facilities to Mozambique. In return, Mozambique agreed to purchase Soviet freezer trawlers to be operated by Soviet and local fishermen.

No agreements have been signed with Namibia. Namibian grounds were overfished following the rapid build-up of modern stern trawler fleets, notably from the USSR and other East European nations. From a peak of 600,000 tons of hake caught in 1972, the current annual harvest has dropped to 100,000 tons per annum.

Soviet relations with Senegal have been unsuccessful. The joint venture between the USSR and the *Societe Senegalaise D'Armement a La Peche*, headquartered in Dakar, authorized the USSR to provide Senegal with fishing vessels. The venture was reorganized in 1974 and went bankrupt in 1976. Senegal further severed the relationship by ordering the Soviet Fisheries Bureau at Dakar to close in 1980. Senegal was to receive Soviet vessels and training in exchange for Soviet fishing access. The poor quality of the Soviet vessels and continuous overfishing by its trawlers provoked the termination of ties.[217]

The May 1976 agreement with Sierra Leone is typical of the agreements signed with African countries. The document expresses the desire of the two countries to cooperate and provide mutual assistance in fisheries. Article two outlines the Soviet technical commitments, including Soviet surveys of the the marine resources, and training of domestic fishermen in Soviet institutions. All research findings are to be shared with Sierra Leone. Article four discusses the future possibility of joint ventures, but no details are given. Article five outlines Sierra Leone's responsibilities including allowing the Soviet fleet port access. The next section of the

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[216]Correspondence with Marc Taconet dated November 28, 1989.
[217]*Ibid.*

agreement allows the USSR to establish a permanent representative in Sierra Leone. The agreement establishes a joint committee to oversee these arrangements. The final article states the agreement is in force for five years and is automatically renewable for three years if neither party gives a six month cancellation notice.

The relationship with Sierra Leone has not been without controversy. Sierra Leone has complained of Soviet overfishing and the Soviet demand for payment in hard currency instead of frozen fish. According to the USSR, operations here lost money. The average annual catch has been under 70,000 tons of mostly small fish. In response, Sierra Leone formed the Sierra Fishing Company (SFC) to try to regain control of their resources. In addition to the government, ownership of SFC now includes private individuals and even the Soviet Union.[218]

SFC receives 15% of the catch and has an option to buy up to 50% of the catch under an agreement with *Fransov-Cannes*, a joint French-Soviet fishing operation. In return, *Fransov-Cannes* is allowed to operate tuna vessels in the local waters. During the first six months of 1989, four Soviet trawlers, 12 shrimpers, 11 sardinella purse seiners, seven tuna seiners, and seven factory ships operated in Sierra Leone's waters. The Soviets harvested 4,710 metric tons of tuna during this period, which is a 432% increase over the 1987 catch.[219]

The USSR first signed a fishery agreement with Somalia as part of its foreign aid program to them in the 1960's. The Soviets created

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[218]*Ibid.* Sierra Fishing Company (SFC) is the largest fishing operation in the country and has operations ranging from fishing to processing to distribution and export marketing. SFC owns 15 shrimp trawlers, only seven of which were active in 1987. There are also five trawlers/purse seiners. The company currently employs 600 people and indirectly supports hundreds of fishmongers.

Presently, there are 10 active fishing companies operating here. However, the SFC is the primary importer of fish products into the country and exporter of shrimp in commercial amounts.

[219]*Ibid.* Under a separate agreement, the Soviets will expand into the shrimp fishery. In 1987, the Soviets were granted licenses to operate 42 trawlers/purse seiners, 10 shrimpers, 5 tuna vessels, and three additional vessels.

20 fishery cooperatives and helped develop the Somali processing industry as well as supplied fishing gear and housing.

A joint venture *Somalfish* between *Sovrybflot* and the Somali Ministry of Fisheries and Marine Transport was created in April 1974 with US$ 400,100 in capital. The Somali government had a 51% share and the option to purchase the remaining equity. *Somalfish* was created to harvest fish, crustaceans, cephalopods, as well as do on-board and in-shore processing. The joint venture operated 10 Soviet freezer trawlers.[220] In addition, the Soviets trained local personnel and aided in the creation of fishing cooperatives. However, political tension increased between Somalia and the USSR as a result of the military conflict between Somalia and Ethiopia. The joint venture was cancelled and the Soviet trawlers returned to the USSR in November 1977. *Somalfish* continues as a state-owned business marketing fish and fish products.[221]

South Africa has never had a bilateral treaty with the USSR. [222]

The USSR has had several fishing agreements with Yemen, the People's Democratic Republic of Yemen, since the latter's independence in November 1967. The two countries have had a joint venture operation in effect since 1971. The venture involves eight vessels--five local vessels, two Soviet fishing vessels, and one Soviet research ship. The number of Soviet ships increased in 1980 to five fishing and two research vessels. Two of these Soviet vessels harvested primarily for the Yemen market. The quota established for the remaining three Soviet vessels was 13,000 metric tons, 2,000 of which was to be given to the coastal state as fees. More recently, the number of vessels increased to 11, each over 600 GRT.

In 1979, an additional agreement with Yemen was signed providing for a training center in Aden, a cannery in Mukalla, and a port in Aden. Since the Aden center's completion, over 500 local

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[220]Five of these vessels were supposed to be purchased from the Soviets by the Somali government, but this never happened.

[221]Kaczynski, "Joint Fishery Ventures and Three Ocean Powers," pp. 66-67.

[222]Correspondence with Denzil Miller, Sea Fisheries Research Institute, Department of the Environment, Roggebaai, South Africa

fishermen have been trained there and an additional 100 have been sent to be educated in the Soviet Union. The Mukalla cannery has a capacity of 15 million cans a year of tuna, mackerel, kingfish, sardines, and other fin fish. In return for building the center and cannery, Soviet vessels have free access to domestic grounds for research. This relationship has not been without problems. Domestic fishermen routinely complain that Soviet vessels operate in protected areas and harvest endangered stocks.

Despite opposition form the local population, the Yemen official stance remains pro-Soviet. For example, the Yemen Minister of Fisheries was dismissed in 1980 after openly criticizing Soviet officials for abusing the agreement. Since then, public criticism of the Soviet fleet has been veiled.

In July 1971, the USSR established a joint venture called *Sovhispan* between *Sovrybflot* and two Spanish companies--*Compania General de Tabacos de Filipinas* of Barcelona and *Vapores Suardiez* of Madrid. This venture expands Spanish operations in the Canary Island ports of Las Palmas and Santa Cruz de Tenerife and services Soviet fleets operating in the Central and Southern Atlantic, including the Antarctic waters. The Canaries became an even more important port after the Suez Canal was closed. Prior to the joint venture agreement, the Soviet fleet was forced to return to Odessa for supplies and repairs. Expansion of operations of *Sovhispan* cost approximately US$ 5,000,000, including the construction of offices and fleet service facilities.[223]

In 1975, *Sovhispan* and Spanish International Export/Import Company, *Sioesa*, formed an additional joint venture, *Pesconsa*, with offices in Madrid and Las Palmas. The objective of this venture was to develop new fishing grounds and equip Spanish vessels with Soviet equipment such as cold storage facilities. By early 1976, 10 medium stern trawlers were delivered to the company by the USSR.[224]

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[223]Kaczynski, "Joint Fishery Ventures and Three Ocean Powers," p. 57.
[224]*Ibid.*, p. 58.

The USSR has had a volatile relationship with the Latin American countries. Soviet-Latin American relations which began with Cuba in 1962, can be divided into three basic phases. The first period spans from the 1960's until the late 1970's. During this time, the USSR gave economic aid and technical assistance to expand its influence in Latin America. Soviet vessels conducted extensive research operations off the coasts of Latin America, but until the extension of coastal jurisdiction in the mid-1970's, had little incentive to fish outside the traditional northern Atlantic and Pacific grounds. The next stage was brief-- from the late 1970's until the USSR was expelled from several of the countries in the early 1980's. The USSR worked on developing strategic relationships with Grenada, Guyana, Jamaica, and Nicaragua, and continued a strong presence in Cuba.

In the third and current stage, the USSR is seeking access to coastal fisheries in Latin America and the Caribbean through a series of bilateral agreements and joint ventures. The USSR has sought to increase its political ties, and in the past several years has met with several Latin American political leaders, including Raul Alfonsin and Jose Sarney. Even though the Soviet fishing presence is at an all time high in Latin America, accounting for almost 30% of the total 1987 Soviet harvest, its fishing activities are not expected to expand further as a result of nationalism which has seriously affected Soviet quotas in this region. Although negotiations continue with Brazil, Uruguay and Chile, only with Chile are relations expected to significantly improve depending on its political situation.[225]

The Soviet relationship with Argentina has been tumultuous. Soviet research vessels first surveyed stocks in the Patagonian Shelf in 1961, initiating a commercial fishery five years later. All Soviet vessels were expelled one year after that. There was not a formal agreement between the two countries until Juan Peron's government in 1974 negotiated an agreement providing for technology exchange, training, joint research, and the eventual formation of a joint

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[225]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 119.

venture. However, no Soviet fishing operations resulted. Isabel de Peron ended all commercial ties with the Soviets after the death of her husband.

However, the relationship with Argentina improved in the 1980's. Motivated by fear the Soviets would sign an access treaty with the British in the Falklands (Malvinas) giving the latter de-facto recognition, the Argentine government concluded an fishing agreement with the USSR in 1986.[226] Under this agreement 18 Soviet stern trawlers are allocated up to 180,000 metric tons annually.[227]

Also under the agreement, the Soviet fleet is granted port access to Punta Quilla, Buenos Aires, and Caleta Oliva for repairs, supplies, and crew exchange. In return, local fishermen are trained onboard Soviet vessels, and 10% of the crew has to be Argentine. In addition, these vessels must carry an Argentine inspector. The Soviets are responsible for paying a 3% licensing fee as well as purchasing the equivalent of 30% of the value of the catch from the domestic processing industry. Despite strong local criticism, the agreement was renewed until 1990.[228]

An agreement similar to the 1974 document under Juan Peron was negotiated recently, but once again, no joint venture was formed, and the talks broke down. A service agreement was signed in 1985 and renewed in April 1989 with Tandanor Shipyards in Buenos Aires. It is interesting to note this company is owned by the Argentine Department of Defense whose strong anti-Communist stance has been instrumental in blocking ties with the USSR.

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[226]In addition, large Soviet grain purchases helped improve relations despite strong opposition from the military.

[227]*Ibid.*, p. 30. Under the agreement, the USSR is not allowed to take a sizable catch of hake as the local industry concentrates on harvesting hake and squid for export.

[228]The Argentines concluded a similar treaty with Bulgaria in 1986, but were dissatisfied with Bulgarian compliance so did not renew the agreement when it expired in 1989.

In April 1987, the USSR signed an agreement with five Argentine processing companies to supply fish to the USSR for US$ 15 million. The catch is marketed in the USSR.[229]

Bermuda has had limited fishing relations with the USSR. This country declared a 200 mile EEZ in 1978, and since that time has received no requests from the USSR for fishing licenses. The USSR has reported no catch in the Western Central Atlantic since 1976.

Brazil has never had a formal fishing agreement with the USSR. A joint venture in the hake fishery was negotiated in 1969, but rejected by the government. The Soviets tried again after Brazil declared an EEZ on March 25, 1970, sweetening the deal to include 60% local ownership, and US$ 100 million in credits to purchase Soviet-made vessels and gear. The offer was again rejected.

The USSR and Brazil were supposed to sign a cooperation agreement on aquaculture, harvesting, and marketing fish in July 1979 but it is not clear if this were signed. In addition, a joint venture, *Brasovpesca*, between *Sovrybflot* and a local Brazilian company was proposed, but not signed. The USSR hopes to develop a modern fishing port at Suape as a way to decrease the current trade deficit. However, it is unlikely Brazil will allow access to any foreign fleets in the near future.[230]

The first Soviet contact with Chile was in 1966 when approximately 20 Soviet vessels conducted research in the Southeast Pacific. A trade agreement was concluded in 1967 providing for a US$ 42 million credit to build a fishing port in Chile. Relations began to heat up during the short-lived leftist administration of Salvador Allende from 1970-73.

The Soviet Union has never fished inside the Chilean EEZ, despite close ties to the Allende government. A 12 year bilateral agreement was signed in 1971 between the Chilean government and a Soviet delegation personally headed by the Minister of Fisheries, A.A. Ishkov, to show the importance of the agreement. Under this

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[229]The companies are *Argenpez, Bajamar, Frigorifico Gepa, Pesquera Argentina del Sur,* and *Pesquera Cono del Sur. Frigorifico Gepa* went bankrupt in 1988.

[230]Conversations with Milan Kravanja.

agreement, the USSR was to provide aid in the construction of a modern port on the Bi-Bio River and in the modernization of the ports in San Antonio and Caleta Membrillo. In addition, the USSR promised to train Chilean fishermen, conduct joint stock assessment surveys, as well as loan of a number of 1,000 ton fishing vessels to the state-owned company, *Pesquera Aravco*. The agreement included the immediate delivery of three trawlers in January 1972, followed by eight additional trawlers and two research vessels, the *Astronom*, and *Jantar 1*. In return, Chile paid the USSR US$ 870,000 in fishmeal.

During this time, the USSR also created a joint venture called *Arauco* located in the port of Talcahuano in southern Chile to take advantage of the abundant local hake fishery. The venture chartered three Soviet factory trawlers at an annual cost of US$ 800,000 per vessel. After heading, gutting and freezing on board the chartered vessels, the fish was delivered to Talcahuano for final processing. The final product was consequently sold in Santiago. As a result of the low quality of fish, a large percentage of the catch was reduced to fishmeal. Other problems in processing were the lack of cold storage and the distance between the two cities. In addition, the local fishing communities suffered from the lower price charged by the venture. After one year of operation, the venture was disbanded.[231]

Despite severe local reaction to the Soviet relationship, Allende continued to expand ties and established a Joint Commission on Fisheries in 1972. This Commission proposed the construction of a fisheries institute to which the USSR donated US$ 69,000. It is not clear if the school was ever completed.[232]

The USSR has had no diplomatic or commercial relations with Chile since the military coup on September 11, 1973. One Soviet vessel was trapped, and the fishermen were arrested and, according to Soviet reports, tortured by the military. The vessel was released after one week.

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[231]Kaczynski,"Joint Fishery Ventures and Three Ocean Powers," p. 68.

[232]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, pp. 50-53.

Relations may open up again after the 1990 elections. Soviet vessels have never fished inside the Chilean EEZ, but have been very active outside this zone, especially after being closed out of American waters in the late 1970's. Forty-two Soviet vessels were sighted operating 210 to 250 miles off the Chilean coast in 1981, increasing to 73 vessels by 1983, and to over 80 one year later. Charges have been made by the government that the vessels illegally fish inside the EEZ. The Chilean government also has claimed that Soviet fishing activities in the Antarctic are illegal. Much of the Soviet krill fishing is done near the Palmer Peninsula which has been claimed by both Chile and Argentina.

The Soviet Union engaged in limited activity off the coasts of Columbia during the 1970's.[233] The government declared an EEZ in 1978, not enforced until the mid-1980's. Columbia and the USSR formed a joint venture in 1981, comprising of *Intermar*, *Sovrybflot*, and an American tuna company. The Columbian government hoped this venture would develop its tuna industry. *Sovrybflot* delivered two Soviet trawlers in 1981, seven in 1982, and an additional eight in 1983. These trawlers were to be converted into tuna seiners and were reportedly 720-GRT *Alpinist* class seiner-trawlers. The US company provided technical expertise in tuna fishing as well as purchased and marketed the catch. No catch statistics or profitability information are available, though this must have been somewhat successful at least politically, because in August 1982, *Intermar* and *Sovrybflot* signed a seven year extension. In 1986, the two countries signed an economic aid package which provided for a joint stock assessment and technology transfer to Columbian industry, but no information is available on whether or not this happened.[234]

The Soviet Union has a longstanding relationship with Cuba which started in September 1962 with a fisheries assistance

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[233]Conversation with Milan Kravanja. One instance made headlines in December 1979 when the Soviet trawler, the *Butka*, was attacked by pirates while docked in the Columbian port of Buenaventura. The pirates escaped with the entire Soviet catch.

[234]According to my conversation with Mr. Kravanja, the USSR was interested in discussing joint ventures with the Columbian government, but the latter's refusal to let the Soviets pay in fish was a major obstacle.

program. This arrangement provided for an information and technology exchange, joint stock assessments, training, and the creation of the Joint Commission on Fisheries. By 1965, over 120 Cubans had been trained aboard Soviet vessels and an additional 100 at Soviet institutes. The agreement automatically renews every 10 years.

A subsequent March 1963 cooperation package provided for the joint construction of a modern fishing port at Havana. The Soviets covered the cost of construction and paid the Cuban labor force with fish. In return, the Cubans gave Soviet vessels 10 years of free port access. The Soviets continue to have access to the port, but now pay a fee. The port gives the Soviet fleet a strategically located fishing base for its activities in the Southeastern and Western Atlantic grounds. Previously, the fleet had to return to the USSR for repairs. The relationship continues despite philosophical differences between Gorbachev and Castro, but will probably weaken as the Soviets reduce the amount of their Cuban subsidies.

Ecuador has shown little interest in developing a fisheries relationship with the USSR. The first known contact was in 1975 when a Soviet research vessel, the *Leonid Sabolov* visited Ecuador. The Soviet Deputy Fisheries Minister, V.I. Rytov visited Ecuador in May of the following year to discuss Soviet scientific and technical fisheries assistance. No agreement emerged from these discussions, nor from the subsequent visit in November 1983. The recently elected leftist government of Rodrigo Borja Cevallos may be more open to negotiations with the Soviets.

The short-lived relationship with Grenada developed through the encouragement of the leftist government under Maurice Bishop. Bishop wanted Soviet and Cuban assistance to develop the local fishing industry. A fishing school was opened in 1979, staffed by Cuban nationals who were later joined by Soviet personnel. The USSR surveyed the local stocks in June and July of 1980, discovering deepwater shrimp stocks 15 to 30 kilometers offshore. The relationship abruptly ended with the American "intervention" in

October 1983. At that time, all Soviet and Cuban personnel left the island.[235]

Relations with Guyana were nonexistent until the latter's independence from the British in 1966. The first fishery contact was in 1969 when the *Akademik Kurchatov* made a port call. An aid program was established in 1977 which provided for joint fishery research and Soviet training of local personnel. An access agreement was signed by the Prime Minister of Guyana and General Secretary Leonid Brezhnev in April 1978. A protocol, signed a month later, allowed for two Soviet vessels to operate in Guyanese waters with as many as six additional ones allowed in 1981. The agreement also set up a joint company to catch, process, and market shrimp. The USSR has recently pursued access agreements with the government, but with limited success. Relations between the two countries appear to have deteriorated since 1981 when Guyana accepted a Japanese aid program instead of the Soviet one.[236]

The fisheries relationship between the USSR and Jamaica was limited to the 1979-80 period when, during his visit to Moscow in April 1979, Prime Minister Michael Manley initiated a bilateral agreement calling for cooperation and mutual aid. Two research expeditions were held, the first along the Pedro Bank during the winter of 1979-80, and an additional one to assess longline fisheries in the spring of 1980. Fisheries cooperation ended after the election of Prime Minister Edward Seaga, but is expected to continue after Manley's re-election. It is interesting to note that Manley's pro-Soviet stance has been more subdued recently than during his 1970's tenure in office.

As with Argentina, the Soviet relationship with Mexico has fluctuated since the 1960's. The USSR has never achieved its desired goal of access to the Pacific grounds. The first Soviet visit was in October 1962 when a 500 ton research trawler made a port call in Veracruz followed by an additional 20 research vessels which

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[235]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, pp. 66-68.

[236]*Ibid.*, p. 69.

conducted research operations in the Eastern Pacific off the Mexican coast in 1966. However, local fishermen complained of the Soviet presence, forcing the government to limit Soviet port access in the spring of that year. The relationship has appeared to improve in the 1980's possibly the result of the officially denied Soviet US$ 450 million aid package to Mexico.

The Soviet relationship with Nicaragua mirrored the one with Cuba: first came the technical assistance, followed by the construction of shore facilities. Soviet interest in the country increased after the 1979 ouster of President Anastasio Somoza. The first Soviet research vessel, the *Koryfena*, visited the area in July 1980. Within 14 months, six Soviet research operations were conducted in these waters.

A cooperation agreement was signed with Nicaragua in September 1981 under which the Soviets provided technical assistance, training of local fishermen, the creation of a fishing school on the Atlantic coast, and the formation of a joint venture. In return, the USSR received port access, repair facilities, and *Aeroflot* landing rights for Soviet crew exchanges. On return from a trip to Moscow, Daniel Ortega Saavedra announced a Soviet grant of US$ 166.8 million for projects, including shipyard construction and other fisheries programs.[237] In additional in 1987, 650 metric tons of frozen fish were delivered by the Soviets to Nicaragua as the first installment of a 2,000 metric tons donation valued at US$ 2.5 million. Two years later, the Soviets delivered 23 tons of equipment for the fisheries school at Bluefields as well as an additional US$ 3 million in material assistance, including three freezer trucks. Over 100 Nicaraguans are currently being trained in Soviet fishing schools.

The United States has been very concerned about the proximity of the Nicaraguan shipyard at San Juan del Sur to the borders of Costa Rica and the Panama Canal. The size of that facility, which includes a 7,000 ton drydock and 18-m pier, makes this a potential military base, though allegedly, it is used by the Soviet tuna seiners

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[237]Most of the money was carmarked for the construction of a hydroelectric plant, satellite communications base, and a hospital.

operating in the Eastern Central Pacific. The USSR pays Nicaragua US$ 200,000 in rent each year for shipyard privileges.

The profitability of the Soviet fishing operations in Nicaragua is not known. The total Nicaraguan catch has remained static after declining 80% during the first years of the Sandinista government. It is interesting to note, that unlike in Cuba, the USSR did not help develop the Nicaraguan distant water fleet.[238] The profitability of this relationship is political. The Soviets gain a base in the traditional American sphere of influence and has been able to expand its presence in the area. The Soviets appear to continue their political interest in this country despite the recent change in governments.

The establishment of Soviet-Panamanian fishery relations is directly linked to the deterioration to the latter's ties with the United States. In November 1987, the USSR and Panama signed an agreement allowing landing rights for *Aeroflot* in Panama City for crew exchanges at a cost of US$ 40 million. The first crew of 160 fishermen arrived on November 27,1987. The two countries have not yet established diplomatic relations, but in January 1989, officials signed their first trade agreement. Panamanian companies hope to sell seafood products to the USSR. Currently, the Soviet Union does not fish in Panamanian waters, although it does have access to supplies for its fleets fishing in the Peruvian and Argentine zones. In a recent press conference, Soviet Deputy Minister of Fisheries Zilanov was guarded, but seemingly unconcerned about the future of the relationship: "It is difficult to say if the internal conflict will affect Soviet relations with Panama. It has not so far, but we have Peru and Argentina ready as a back-up."[239] Soviet influence is expected to wane in Panama under the new Pro-American government.

Peru is the only other Latin American country to allow significant Soviet fishing operations within its EEZ. Peru currently has three active arrangements with the Soviets: the 1971 cooperation

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[238]Soviet aid is the reason behind the twelvefold increase in the Cuban catch from 1958 to 1986. Unlike Cuba, Nicaragua's catch has declined since the Sandinista coup and beginning of Soviet influence in 1979.

[239]Press Release May 1989.

agreement, the 1988 bilateral protocol, and a joint venture created in the same year.

The 1971 agreement provided for Soviet port access and crew exchange privileges. As part of the agreement, the USSR financed 60% of the cost of the construction of the fishing port at Paita.[240] The US$ 38 million project included building facilities to process 180,000 metric tons of fish per year and 100,000 metric tons for fishmeal. The port was considered "a white elephant"--only utilizing 10% of its capacity. Capacity increased to 90% under the Belaunde Administration in power from 1980-85.[241]

Technical training and scientific aid also were included in the 1971 Peruvian economic package. Local fishermen were trained onboard Soviet ships and in Soviet fishery schools. In addition, the Joint Commission for the Collaboration on a Fishing Development Project was created to discuss protocol issues as well as ways to enhance the Peruvian fishing industry. The 1971 agreement has been renewed three times, most recently in 1986. This has allowed a large Soviet presence in Peru for almost 20 years, upsetting the country's neighbors to the south.[242]

Officials from both countries began negotiating a now defunct joint venture in 1982 to permit a small number of Soviet vessels to fish in Peruvian waters. The agreement was between *Sovrybflot* and *Empresa Publica de Servicios Pesqueros* (EPSEP), a state-owned company created to promote domestic sales of fishery products. Five BMRT class Soviet trawlers were allowed to catch up to 50,000 metric tons of mackerel annually. Approximately 75 metric tons of

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[240]The original negotiations were for a port at Bayovar in northern Peru for a cost of US$ 54 million, but the project was too ambitious, and the negotiations failed to produce an agreement.

[241]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, p. 85.

[242]Chile, under General Augusto Pinochet Ugarte, was concerned that Paita was in reality a Soviet military base. In addition, Chile has been worried about Soviet military purchases by Peru and by rumors of a secret Soviet submarine base to be built in northern Peru. Conflict between Chile and Peru is not new. It began because of a territorial dispute over the Atacama Desert, which Chile seized from Peru and Bolivia during the War of the Pacific in 1881-8.

fish per vessel was delivered each month to EPSEP. In return, the USSR was paid a 12% fee in fish.

This now defunct venture was expanded in 1983 to allow 20 BMRT class vessels to fish in Peruvian waters in conjunction with EPSEP and another company, *Mercurio*. A total of 15% of the catch was paid to ESEP for fishing rights. In addition, local fishermen were trained in trawler operations. Fishmeal and oil was sold in the local market. The Soviet portion of the catch was sent to the USSR. The Peruvian press criticized the USSR for depleting the local fish stocks and claimed the Soviets only delivered 9% of the catch. There was also a controversy concerning the accidental death of two Peruvian fishermen aboard Soviet vessels. The venture was allowed to lapse in 1986 in the midst of controversy as the USSR refused to pay taxes and fees it said were the responsibility of the Peruvian companies. The Garcia Government tried to renew the joint venture agreements in 1986, but the USSR refused, saying the terms were not feasible.[243]

The 1988 bilateral protocol was negotiated between the Soviet Minister N.I. Kotlyar and the Peruvian Economy and Finance Minister Gustavo Saberbein during the latter's visit to Moscow in January 1988. Reportedly, the Soviets linked debt negotiations with the issue of fishery access.[244] One month later, both parties agreed to sign a letter of intent[245] to allow Soviet access to Peruvian waters. The document included a technical contract between EPSEP and *Sevryba*. This was highly unusual as *Sovrybflot* represents the USSR in these matters.

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[243]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, pp. 88-89.

[244]*Ibid.*, p. 91. Negotiations first started up in 1987 to discuss refinancing Peru's US$ 1 billion debt to the USSR. The Soviet government agreed to refinance it at 3% interest. Part of the debt payment was to be made in textile products, mining machinery, copper and zinc products. The USSR also agreed to purchase in US dollars additional products in amounts equivalent to the repayments. Peru would provide US$ 52 million in products as repayment, and the Soviets would purchase US$ 52 million in non-traditional goods and US$ 120 million in traditional goods.

[245]The letter was actually signed on December 6, 1988.

Signed in December 1988 the protocol permits Soviet access to Peruvian waters, and calls for the formation of a joint venture company between EPSEP and *Sevryba*. Twenty Soviet stern factory trawlers are allowed to harvest up to 400,000 metric tons, and in return, must land 17.5% of the final production or about 30% of the catch in Peruvian ports. EPSEP will market the fish domestically. The contract is valid for three years. The Peruvian government will place three inspectors on each Soviet vessel to monitor the operations within the EEZ.

EPSEP is responsible for obtaining permits for the Soviet vessels, for paying the salaries of the Peruvian inspectors and all costs associated with landing the catch at local ports. The company must give the joint venture vessels at least 20 days notice at which port to land the harvest. The company must accept the fish as fast as the Soviets can unload the catch, up to 150 tons per day between 8 am and 11 pm. Otherwise, EPSEP pays *Sevryba* US$ 1 per GRT of each vessel per 24 hour period that the vessel has to wait to be unloaded.

Sevryba is responsible for guaranteeing that each vessel will report to Callao for inspection and licensing before fishing operations commence. *Sevryba* is responsible for supplying all provisions to Soviet and Peruvian personnel onboard, paying all repair expenses and Soviet salaries, and for landing commercially valuable fish such as black ruff, rock bass, and tuna at local ports.[246] EPSEP must be notified at least 72 hours in advance of a vessel's arrival time in port. Once in port, EPSEP must be notified of the vessel's readiness to unload the catch. If notification is before noon, unloading must commence by 1 pm the same day. If after noon, unloading does not have to start until 8 am the following morning. There are no restrictions on what *Sevryba* can do with its share of the catch.[247]

A second joint venture contract was signed between *Sevryba* and the privately-owned Peruvian company, *Pluton,* on December 7,

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[246]Fishmeal production is limited to 0.5 tons per hour per vessel.

[247]United States Department of Commerce, Soviet-Latin American Fishery Relations, 1961-1989, pp. 94-95.

1988, one day after the the EPSEP-*Sevryba* agreement. However, this venture has not yet been authorized by the Peruvian government. This second venture allegedly allows for the deployment of 15 Soviet *Alpinist*-class trawler-seiners of 750 GRT to be leased by *Pluton*. The entire catch is to be landed in Peruvian ports. It is doubtful that these vessels will be allowed to compete with domestic fishermen for the popular species of sardines and anchovies. The agreement has been tabled until a government commission can further study local concerns regarding this joint venture contract's lack of specific catch quotas, limits on the number of Soviet vessels, and restrictions on fishmeal production.[248]

Soviet fishing activities in Peruvian waters have been more restricted since February 1989. Under pressure from the local fishermen and popular press, the Peruvian Defense Ministry issued a statement prohibiting Soviet fishing north of six degrees south, or within an eight mile radius of Lobos de Afuera Islands. In addition, Soviet vessels are now required to report their position to the Peruvian Navy every four hours inside the EEZ.

Unlike its relationship with Peru, the USSR has made little publicly known contact with Suriname. The only known one between the USSR and Suriname occurred in February 1988 when a Soviet research vessel visited Paramaribo. The results of the studies on salinity and temperature at 5,000 meters apparently will be shared with the Suriname government.[249]

Soviet relations with Uruguay have improved since the 1960's. Montevideo has been an open port and is regularly visited by most of the large distant water fleets operating in the South Atlantic. The port has been a convenient rest stop for Soviet oceanographic and whaling vessels returning from Antarctica. The relationship deteriorated in the late 1960's as local fishermen complained of "oil scum" from Soviet trawlers damaging their beaches and local fish stocks.[250] The Soviets were also accused of fishing inside the

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[248]*Ibid.*, p. 96.
[249]*Ibid.*, p. 109.
[250]*Ibid.*, p. 111.

territorial sea. Later Soviet criticism of the Uruguayan military government cut off all fisheries relations until April of 1987.

Recently, the two countries opened negotiations for an agreement which calls for Soviet and Uruguayan cooperation in the improvement of fishing technology and study of local fisheries. The agreement further provides for the creation of a joint venture to catch nontraditional fish, no hake or squid, and to provide fish to local processing plants. The USSR has agreed to train local fishermen on Soviet vessels and help improve the local infrastructure, such as ports and repair facilities. In return, Uruguay will provide port services to Soviet vessels. A joint commission will be created to oversee activities and will meet annually. The agreement will be in effect for three years. However, the agreement has not been implemented because of heavy local opposition to Soviet fishing within the EEZ.

Venezuela and the USSR do not have a formal fishery relationship. The last known visit was in 1975 when the *Akademik Krylov* paid an official visit to Puerta Cabello. President Caldera stated in a March 1973 press conference that the Soviets had not requested access to local fishing grounds. No public information on current relations is available, but there are rumors of illegal Soviet fishing in the Venezuelan waters.

As a result of its restrictive access to the Latin American and Caribbean fisheries, the Soviet Union has increasingly focused on the fishing grounds in the South Pacific. The major resource in this region is fish. The South Pacific accounts for 25% of the world tuna harvest, over 90% of which is caught by distant water fleets. The South Pacific states created the Forum Fisheries Agency in 1979 to promote regional cooperation in fisheries and collect and distribute fisheries information from statistical data. This agency also advises the member states on marketing and pricing fish products, as well as helps them to negotiate fisheries agreements. Member governments include Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western

Somoa. The Marianas were not admitted because of their decision to seek commonwealth status with the United States.

The South Pacific has enormous resource potential and has been targeted as a growth area by the USSR, "the place where civilization is stepping up its pace."[251] The USSR went as far as to create a Pacific Oceans Bureau in the Ministry of Foreign Affairs in 1986. This interest was openly proclaimed in Gorbachev's now infamous 1986 speech in Vladivostok where the Soviet President made the seemingly innocuous statement, "the Soviet Union is also an Asian-Pacific country." Western hawks perceived an ominous tone,[252] saying the statement followed on the heels of a tremendous buildup in the Pacific Naval Fleet.[253]

As a result of the South Pacific island groupings, the following analysis of Soviet fishing relations in this area is done by region rather than by alphabetical order. Soviet fishing relations with the South Pacific were virtually nonexistent until the mid-1980's. The resulting relationships have not been profitable for the Soviets. Negotiations for a proposed fisheries survey off the Cook Islands and Papua New Guinea were cancelled following the invasion of

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[251]Mikhail Gorbachev, *Perestroika*, Harper & Row, Publishers, NY, 1987, p. 180.

> The East, specifically Asia and the Pacific Region is now the place where civilization is stepping up its pace. Our economy in its development is moving to Siberia and to the Far East. We are therefore genuinely interested in promoting Asia-Pacific cooperation.

[252]This is the largest of the four Soviet Naval fleets. Western analysts fear that the Soviets were aided by the United States' withdrawal from Vietnam. When the Americans left, there were two naval piers at Cam Rahn Bay, which the Soviets have expanded now to six, each having up to 30 naval vessels, including attack submarines. Military aircraft operate out of the adjacent base and also from nearby Da Nang. The USSR is in a position to threaten American bases in the Philippines and block US access to the Indian Ocean and the Persian Gulf.

[253]David North, "Pacific Vulnerable to Soviets, But Only If US Errs," Pacific Island Monthly, February 1986, p. 11. A recent unpublicized report funded by the US Department of State says that the Soviet Union is not a threat in the Pacific. The US has made mistakes with its relations in this region including overreacting to the *Jeanette Diana* seizure, its rigid system for distributing allocations of sugar imports at high subsidized prices, and the lack of a US signature on the 1982 United Nations Law of the Sea Convention.

Afghanistan. Western Somoa also refused a Soviet request to undertake tuna research. Only Tonga allowed a Soviet research vessel to conduct tuna research. Fiji's ports have been closed to Soviet ships since the government accused the USSR of interference in its 1982 general election. Access to the Fijian EEZ was denied in September 1984. The Solomon Islands and Tuvalu both rejected Soviet advances for access to their EEZs in June 1985.[254]

The United States unwittingly gave the USSR leverage in the South Pacific during the mid-1980's. The traditional South Pacific relationship with the United States was disintegrating as a result of the perceived insensitivity of American tuna fishermen, resulting in a "tuna war." Talks between the American Tuna Boat Association (ATA) and the Federated States of Micronesia, Kiribati, and Palau failed because of the American refusal to pay higher access fees to the island states, and thus, American access to these fisheries expired in December 1984 and was not immediately renewed. The American tuna fishermen were not motivated to renew the arrangement because the United States government is required to pay any fishing fines under the Fishermen's Protection Act. The United States military blamed the American tuna industry for loss of American influence which opened the way for a Soviet presence in the South Pacific.[255]

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[254]"Soviet Fishing off the Developing Countries," p. 6.

[255]Controversy and competition between the US and the USSR in the South Pacific most recently has been centered around the "Rarotonga Treaty for a South Pacific Nuclear Free Zone." The treaty establishes a nuclear free zone from the west coast of Australia eastward to the Latin American Nuclear Free Zone and from approximately the equator south to the Antarctic Treaty Zone. The USSR ratified Protocols Two and Three of the treaty, whereas the United States has not. The United States has stated that ratification would damage its ability to protect the Pacific region. "The South Pacific Nuclear Free Zone Treaty" came into force with its eighth ratification by Australia in December 1986. Upon signing the Protocols, the USSR warned that countries which permitted American vessels under a "neither confirm nor deny" formula would not be protected by the Soviet pledge under Protocol 2. Protocol 2 is the promise not to use or threaten to use nuclear weapons against the countries in question.

The first qualified Soviet success was the August 1985 agreement signed with Kiribati[256] in Manila which came into force in October of that year.[257] For a price of US$ 1.7 million equivalent to 10% of the country's total annual income, the agreement allowed 16 Soviet purse seine and longline vessels and one processing factory ship to operate in Kiribati's EEZ for one year, but Soviet vessels were not allowed in their 12 mile territorial sea zone and were denied port privileges. In addition, Soviet vessels were required to report their location and the quantity of the catch on a continual basis. The one year agreement was styled after other access treaties, complying with the minimum standards accepted by the South Pacific Forum Fisheries Agency.[258] Though the agreement drew protest from the Christian churches and the Christian Democratic Party, it was called "purely economic" by the President of Kiribati.[259] A major motivation of Kiribati was to decrease local dependence on the British aid program. The Soviet fee more than offset the "humiliating" British subsidy.[260]

Fishing off Kiribati was not a successful commercial venture for the Soviets. The total catch was estimated at 2,300 tons of tuna

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[256]U.F. Neemia, "Russophobia in Political/Economic Self-Determination in Kiribati," Paper presented to a Seminar Series on Social Theory and Pacific Development on April 10, 1986, pp. 3-6. Kiribati's EEZ covers approximately three million square miles. The fishing industry is underdeveloped, so when the country became an independent state on July 12, 1979, the new government decided to expand its fishing industry by creating a state-owned corporation in 1981 and actively pursuing joint ventures with the Philippines, Japan, South Korea, and the US. Fishing fees currently account for 25% of the government budget.

[257]Please refer to Appendix J for a copy of the fisheries agreement between these two countries.

[258]David J. Doulman, "Fishing for More than Fish: Soviet Fisheries Initiatives in the Pacific Islands Region," Unpublished Paper, March 1987, p. 4.

[259]Roniti Teiwaki, "Access Agreements in the South Pacific," Marine Policy, October 1987, pp. 273-284. Despite the controversy, the President was re-elected to his fourth term in 1987.

[260]*Ibid.*, p. 283. The British aid was for Australian $ 1.5 million.

> ...the Kiribati people are prepared to discipline themselves to enhance their traditional value system of autonomy and self-reliance...Kiribati did not get involved with the Soviets to incite international attention.

valued at US$ 1.7 million, or the same amount as the fees paid to Kiribati. Most of the tuna was sold to Thai canners through the Soviet joint venture in Singapore, and the remainder was shipped to the United States which is the largest market for canned tuna. The USSR sought a 50% decrease in fees for the next year. Kiribati refused the new terms, so the agreement expired in October 1986. Kiribati remains willing to renegotiate, but the Soviets refuse until the terms are more profitable.

The agreement with Kiribati startled the West who expected the South Pacific to remain anti-Soviet. The American government took steps to improve US relations, announcing a US$ 9 million aid program in 1986 to the South Pacific islands which was substantially less than donations by Australia, New Zealand, the EC, and even Canada. Australia encouraged the United States to increase its diplomatic ties in the area and to control its tuna industry.[261] The United States subsequently opened diplomatic offices in the Solomon Islands and Vanuatu, in addition to the ones established in Fiji and Papua New Guinea. However, the US has not taken the final step to cement relations which would be to sign the 1982 United Nations Law of the Sea Convention as requested by the South Pacific states because of a perceived conflict of interest with the issue of deep-sea mining.[262]

In addition to the aid program, the United States signed an agreement giving 15 South Pacific states US$ 60 million for tuna licenses over a five year period.[263] It is doubtful that the US would

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[261]Also, Australia promised to provide patrol boats to six of the South Pacific islands and increase its number of naval visits to the region.

[262]During these discussions, Japan was silent and did not increase aid despite strong encouragement from the United States.

[263]An agreement was signed with the US in 1987, motivated in part by the interest the USSR has shown in the area. The "US-Pacific Island Treaty" gives US tuna boats 5 years access to the EEZs of 15 Pacific Islands. In exchange, the US tuna industry will pay license fees and give technical assistance. In addition, the US government will provide US$ 10 million annually in economic assistance. The US hopes that this agreement will help the US unpopularity in the region.

In my reading and personal correspondence I was amazed at how strong the anti-American sentiment is in the South Pacific. Even talking with the former London School of Economics graduate student, Anote Tong, I was

have been quite so generous in its aid package had the Soviets not expressed interest in the area. A Soviet representative has said that his country will not be drawn into a competition with the United States for influence in the South Pacific. Dr. Nikolai Shcherbina, Head of the International Law of the Sea Division at the Academy of Sciences,[264] recently reiterated that the interest of the Soviets in the South Pacific was in the need for tuna as a source of food, not as foreign exchange.

Noting the financial benefits accrued by Kiribati, Vanuatu asked for a Soviet proposal in July 1985. This resulted in January 1987 in a US$ 1.5 million deal or 15% of Vanuatu's annual income.[265] Although the fishing grounds are not as fertile as off Kiribati, the USSR was granted landing rights. The treaty was opposed by the two new political parties, the New People's Party and the National Democratic Party, as well as by the main opposition group, the Union of Moderate Parties.[266]

The agreement was very similar to the Kiribati-Soviet agreement of 1985, though this one provided for eight Soviet fishing vessels and allowed for Soviet port access in an area more strategically favorable than Kiribati. Some observers suggested that Vanuatu should have charged a higher price because of its strategic

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surprised at his continuous anti-American, anti-Western rhetoric despite his friendliness and helpfulness.

[264]His full title is: Head of the International Law of the Sea Division, Institute of Economic and International Studies on Ocean Development, Far Eastern Branch of the USSR Academy of Sciences in Vladivostok.

[265]Doulman, "Fishing for More than Fish: Soviet Fisheries Initiatives in the Pacific Islands Region," pp. 3-7. Unlike Kiribati, Vanuatu had no prior fisheries agreement with the US, so was primarily motivated by economics. Vanuatu was interested in a Soviet arrangement as early as 1984, but wanted to wait and see the success of the Kiribati. Also, Vanuatu was motivated by the imminent closure of its tuna base at Palikula. The base was operated by the Japanese company *Mitsui* since the 1950's. The Japanese decision to leave was the result of a corporate policy to disinvest in primary production on a worldwide basis. This was a great financial blow to Vanuatu as tuna accounted for 40% of export income. Also, local purchases by the *Mitsui* longline fleet stimulated the economy.

[266]*Ibid.*, p. 13. The USSR is thought to support the pro-Libyan radical *Barak Sope* Party.

location.[267] The treaty allows the USSR to establish ground facilities at Palikula on the island of Espiritu Santo, to maintain and replenish ships, and transfer crews via *Aeroflot*. This extends the Soviet presence into the Pacific from the Cam Ranh Bay in Vietnam by 6,200 miles. The location of Vanuatu, in the heart of Melanesia, midway between New Caledonia, Fiji, and the Solomon Islands, gives the USSR access to the Coral Sea, only 1,054 miles off the coast of Australia.

Both the United States and Australia have warned the Pacific countries about the "dire" consequences of a relationship with the USSR, stating that Soviet trawlers routinely carry more than just fishermen on board. In addition, onshore access for fishing may be a first step on an irreversible course from a fish-processing plant to a repair facilities to a military base.

Despite the American and Australian concern, the South Pacific islands are more receptive to Soviet overtures. The current situation can be described as a financial free-for-all. In addition to Kiribati in Micronesia, *Pravda* has reported that the USSR has opened relations with Nauru, but no details were discussed. Melanesia, Fiji and Papua New Guinea have indicated an interest in establishing fishing arrangements with the USSR. Previously, Fiji had been openly critical of Kiribati, but changed its mind saying it, too, would sign a Soviet agreement if the terms were financially favorable. However, despite extensive negotiations during 1986, no treaty with Fiji was concluded as this would cause Fiji to change its licensing policy.[268]

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[267]David Knibb, "The Soviet's Big Fish," Wall Street Journal, January 26, 1987, p. 23. Vanuatu is made up of 80 islands and is strategically located next to the French territory of New Caledonia. The base at Vanuatu also gives the USSR a base to track French warships entering and leaving the naval port at Noumea, as well as the chance to exploit political tensions that threaten New Caledonia. They can also capitalize on the anti-western stance of Prime Minister Walter Lini's government in Vanuatu. Mr. Lini has recognized Cuba and Nicaragua and has encouraged other members of the South Pacific Forum to recognize the Palestine Liberation Organization.

[268]Correspondence with David Doulman, Deputy Director, Forum Fisheries Agency, Honiara, Solomon Islands, dated August 25, 1988. Currently, Fiji does not license tuna vessels unless they offload at Fiji's Levuka cannery. Also, commentators thought that Fiji's attempt to conclude a treaty with the USSR was done to bother the US, rather than actually conclude a treaty. Fiji

This country recently has had to focus on its racial problems rather than international relations as the first Indian majority government was voted into office in April 1987 instead of representatives from the native population.[269] Two military coups followed. A republic was declared and a constitution drawn up guaranteeing a majority vote to the Melanesian population. The Commonwealth status was revoked, and a number of the Indian population left the country.

Papua New Guinea openly supported Kiribati during the latter's negotiations with the USSR, but when approached by an Australian company representing the interest of the Soviet government, the country hesitated. Its Minister of Primary Industry was opposed to the idea, but other ministers were in favor because of the economic benefits.[270] The country currently suffers 80% unemployment, so the additional source of hard currency from the USSR would be welcomed. Despite this, a fishing relationship with the USSR became a back burner issue during the general elections. Recently, the foreign minister for Papua New Guinea announced that a Soviet Embassy will be opened in Port Moresby.

The Solomon Islands have consistently rejected Soviet overtures for a fisheries access treaty. Despite the country's political and population problems, as over half the population is under 20 with few job prospects, the Islands do not want to become embroiled in a superpower controversy. Their main export is tuna, followed by timber and palm oil, all of which have had declining prices in recent years.

Relations with the Polynesian states have been very successful. Although the Soviet research vessel, the *Akademik Oparin,* arrived in Rarotonga in the Cook Islands in January 1988,[271] Soviet relations

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was annoyed with American attitudes and was particularly unhappy with its recent sugar quotas.

[269]The Indians were brought by the British to work on the sugar plantations in the 1800's, and the Indians soon outnumbered the natives.

[270]The country has been independent from Australia since 1975. Currently, only 20% of the population is employed, primarily by the copper and gold industries.

[271]Western observers believe the vessel was actually doing research for the submarine force rather than pure oceanographic research.

with Polynesia have been generally unproductive. Both Western Somoa and Tuvalu have consistently rejected Soviet proposals for a fisheries agreement.

The USSR first approached the Australian government in the late 1970's. Initial approval was granted by the Australian government in 1979 for a proposed venture between *Marissco* and the Craig Mostyn Co., Ltd. of Australia which would allow three Soviet trawlers to fish for fin fish and shrimp in the Dampier-Barrow Island area, off the west coast of Australia. Approval was withdrawn by the Australians in 1980 as a result of the Soviet invasion of Afghanistan.[272]

In the 1980's, the USSR approached the Australian government for access to the port facilities of Hobart located on the island of Tasmania. Concerned about spying[273], the conservative government of Malcom Fraser rejected the request which would have been worth US$ 7.9 million. The USSR had a joint venture, *Sovaust* Fisheries, with two Australian companies located in Victoria, Bight Trawlers Fisheries and Commercial Bureau Australia Ltd. The joint venture was 55% Australian. The five Soviet factory trawlers were replaced by Australian vessels, and the venture was ended in 1981. Relations with the Australia have improved under the Hawke government who appears to be more willing to negotiate with the USSR now that Soviet troops have withdrawn from Afghanistan.

New Zealand has had friendly relations recently with the USSR. In 1987 alone, over 200 Soviet vessels visited New Zealand. The Soviet Union has stipulated that any agreement with New Zealand must include landing rights for *Aeroflot*.

The major Soviet land base for the entire South Pacific area was established through a joint venture in Singapore in 1975 when *Sovrybflot* entered into an equal partnership with Straits Fisheries Ltd., a subsidiary of Singapore Marine Enterprises and the Development Bank of Singapore called *Marisso* Ltd. The venture was

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[272]Kaczynski, "Joint Fishery Ventures and Three Ocean Powers," p. 59.

[273]The Australian navy periodically issues "Clam Alerts" which shuts down electronic equipment on Australian warships so that Soviet or Eastern Bloc trawlers cannot collect information on the signals.

started with Singapore $12 million in capital to build a fully integrated seafood processing plant and facilities to service the Soviet fleet.[274] A cold storage plant, including processing and warehouse facilities in Jurong Port, was completed in 1981. The joint venture processes fin fish, lobsters, squid, cuttlefish, prawns, fishmeal and oil. These products are then marketed under the "Neptune's Pride" label in Japan, with some additional products sold in the US and Australia. The company also provides a limited amount of seafood to the local market.

One of the reasons the USSR turned its attention to the South Pacific was the result of the introduction of EEZs in its traditional grounds in the Northern Atlantic and Pacific fisheries off North America. To gain access to their traditional grounds, the Soviets signed fishing treaties with Canada in 1971 and the United States in 1976. President Jimmy Carter banned all Soviet fishing in 1981 in response to the Soviet invasion of Afghanistan. President Ronald Reagan lifted the ban slightly in July 1984 and allocated 110.2 million pounds of fish, primarily Alaskan pollack, in the Pacific region to the Soviets. The ban remained in tact for the US Atlantic region. In April 1985, the US Secretary of Commerce "certified" the USSR for its whaling activities, but has "decertified" the USSR when the operations ceased soon after. Relations have recently improved as the US and USSR agreed to develop a long-term fishing agreement in the 1988 May summit.[275]

As a result of these summit negotiations, the United States legislature signed bill number HR 4919 which guaranteed reciprocal access. Now American fishermen will be allowed to operate within the Soviet EEZ for the first time. In addition, the legislation requires foreign fishing vessels to stow their gear when in innocent passage through the US EEZ, and mandates the use of transponders or other

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[274]This has not been without controversy. Alexander Bondarev, the Soviet marine superintendent, overseeing repairs in Singapore was charged with engaging in espionage and expelled in 1982.

[275]Mention by Ambassador Edward E. Wolfe, Oceans and Fisheries Affairs, Department of State, Washington D.C., at the Law of the Sea Institute (LSI) Conference at the University of Rhode Island, Kingston, RI, June 1988.

vessel position-fixing devices by foreign vessels while fishing in US waters. This legislation went into effect on October 3, 1988 and has helped to ease tensions between the US and USSR.

Both the US and USSR are aware of the importance of research to the fishing industry. As a result the two countries have been cooperating in fishery research for over 20 years. Starting in 1967, the US proposed a program of cooperative fishery research with the USSR[276] in the international waters off the coast between Cape Hatteras and Cape Cod. The US was motivated to propose this

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[276]M.D. Grosslein, "Cooperative USA-USSR Fishery Research in the Northwest Atlantic," Unpublished Paper prepared for the Northeast Fisheries Center, Woods Hole, MA, August 1971, pp. 11-18. US-USSR groundfish studies were done from October 3-11, 1967 in the area off Block Island and Martha's Vineyard using the US research vessel *Albatross IV* and a USSR side trawler also by coincidence named *Albatros*. A second survey was done on groundfish from Cape Hatteras to Cape Cod. The surveys were encouraging as both vessels came up with relatively the same abundance and distribution numbers. In 1968, the survey was expanded to include Georges Bank. The two vessels again covered the area from Cape Hatteras to Georges Bank in 1969. Since 1970 all the groundfish surveys of the US, Canada and the USSR on the Nova Scotian shelf have utilized the stratified random sampling design and the same sampling strata. The success of the US-USSR programs lead to the development of the ICNAF Working Group in 1970 to consider the feasibility of developing a coordinated ICNAF groundfish survey program.

In addition to the groundfish surveys and the trawl comparison experiments, the US-USSR program included the evaluation of sampling gear for plankton and studies of sea herring spawning on Georges Bank. In September 1968, the US and USSR *Albatros*(s) vessels conducted research with the Canadian vessel, the *Theta*, on the effects of various plankton sampling techniques on catches of fish eggs and larvae. This included tests on sampler size, mesh size, tow configuration, speed and duration of haul. An additional US-USSR experiment was done in 1969 to compare systematic vs. random sampling designs.

In the fall of 1969, US-USSR scientists conducted research on the distribution and density of herring egg patches at the National Marine Fisheries Service (NMFS) laboratory in Maine. In 1970, the Canadians again joined the US and USSR to study herring spawning and in the fall of 1971, US, Canada, USSR, France, and West Germany took part in a coordinated plankton survey to map out dispersion of sea herring larvae in the ICNAF area.

The most important accomplishment of the US-USSR joint fishery research has been the additional confirmation of the fact that research vessel surveys can provide data on abundance which are sufficiently accurate to serve as a basis for assessing effects of fishing. Another benefit has been the more accurate picture of the distribution of certain fish important to US fishermen which help the US to manage and protect certain stocks. It is also an important benefit that cooperative research is effective in the planning process.

program by Soviet overfishing in the waters off the US coasts. Basically this agreement encouraged American inshore domestic fishing activities while reducing Soviet offshore activities. It established a 3,000 square mile no fishing zone in the deeper waters of the mid-Atlantic during the January to March time frame. This applied only to vessels over 110 feet long which greatly affected Soviet activities in the area, but did not change domestic operations. In exchange, the Soviet fishing vessels were allowed a token access to several small fishing and loading zones within the US 12 mile contiguous sea. The agreement was amended in 1968 and continued to December 1970 when the closed season was increased to April 15.[277]

Research activities continued into the 1980's. The most recent joint cooperation agreement was the "Agreement on Cooperation in the Field of Basic Scientific Research" on May 6, 1989 which established a formal procedure for access to research facilities in the two countries, including the National Science Foundation and the Academy of Sciences of the USSR.

In addition to research access, the USSR has entered into joint ventures with American companies to gain access to the North American fisheries.[278] The most successful Soviet joint venture has been an equal equity partnership created in 1976 between *Sovrybflot* and the American company, Bellingham Cold Storage Company called the Marine Resources Company (MRC). The headquarters are located in Seattle with additional offices in Nakhodka near Vladivostok, Moscow, and Dutch Harbor, Alaska. Two Soviet nationals and their families reside in Seattle, and American nationals are stationed in Moscow and Nakhodka. The company has over 30 permanent employees[279] and 50 seasonal technicians during the peak fishing period.

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[277]*Ibid.*, p. 4.

[278]The United States first proposed a joint venture with the Soviets in 1973, but was refused until the implementation of the US EEZ under the the Magnuson Fishery Conservation and Management Act in 1976.

[279]Correspondence with Bert Larkins, General Manager, Marine Resources Company International, dated April 19, 1989. Before the 1989 reorganization and subsequent lay-offs, the company employed 30 Americans

This venture coordinates operations between US catcher boats and Soviet processing ships in the American EEZ. The trawlers target hake and Pacific whiting off the coast of California, Oregon, and Washington, flounders and Pacific cod in the Bering Sea, and Atka mackerel along the Aleutian Island chain.

Local opposition delayed hake harvesting off Washington and Oregon until 1978. Final approval came late in the season so only two US vessels were employed, transferring their harvest to two Soviet processing ships. The number increased to 11 US trawlers and six Soviet processors in 1979, but due to weather, technical and area restriction problems, the total catch was only 9,054 metric tons instead of the targeted 30,000 metric ton catch.

Despite a resolution by the Pacific Fishery Management Council, calling for a fishing boycott off Washington and Oregon, the venture successfully harvested hake during the 1980 season.[280] During its peak years, the hake harvest exceeded 255,000 metric tons, utilizing 58 US catcher vessels. Payments to American fishermen fluctuated from US$ 120,000 in 1978 to the high of almost US$ 37 million in 1988. The catch has declined in the past few years dropping almost 30% to an estimated 180,000 metric tons in 1989 from 50 US vessels with a corresponding US$ 13 million drop in payments to American fishermen.[281] This arrangement has increased the domestic harvest of Pacific Coast ground fish by two-thirds, because US vessels are employed in catching the fish.

Once caught, the fish are transferred to the Soviet processing vessels using an efficient detachable codend system. Instead of

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and two Soviets in Seattle, nine Soviets and one American in Nakhoda, and four Soviets and one American in Moscow.

[280]Subsequent telephone conversations with Bert Larkins. The boycott was called to protest the Soviet invasion of Afghanistan. From a total catch of 56,400 metric tons in 1980, over 26,900 metric tons of hake were caught by 16 US trawlers and processed by seven Soviet processors; seven US catcher vessels harvested 11,300 metric tons of primarily Alaskan pollack. In the Central Bering Sea, five trawlers caught 13,150 metric tons of yellow-fin sole processed by three Soviet factory ships. The MRC's target of 5,000 metric tons of herring from the Bering Sea was successfully blocked by an Alaskan native lobby. Sales were US$ 15 million for 1980.

[281]MRCI Marketing Materials, Seattle WA, 1980-1989, sent by Bert Larkins.

hauling the catch onboard the US trawlers, the nets are brought to the stern of the vessels. The part of the net containing the catch weighing up to 30 tons, or codend, is detached and reattached to a line from the Soviet processing ship. The catch is then winched aboard for immediate processing with a minimum of handling. The process also allows the trawlers to more quickly return to fishing activities.

The fish is shipped to Nakhoda or marketed by the MRC on the international market after being processed into frozen blocks of fillets and whole fish including Pacific cod, Alaska pollack, Atka mackerel, several species of flounders, and Pacific whiting. The company also trades in Alaskan king crab, Dungeness crab, halibut, shrimp, pollack, and cod blocks and fillets. In addition, MRC markets the catch from the Soviet fleet, such as mackerel, horse mackerel, squid, pink salmon, herring, herring roe, king crab, Antarctic krill, as well as fish meal and fish oil produced from the fish waste. The king and tanner crab products bought by the MRC are repackaged and sold in the US market. Some of the fish goes to the Soviet domestic market, but the majority of the catch is sold to the Third World.

At first, the MRC negotiated a barter exchange using a hake for crab ratio. Negotiations were held yearly to determine this ratio. All other fish products sold to the USSR were pegged to the price of hake. Now, each month the value of the fish, fuel, and provisions provided to the Soviet processing vessels is compared to the value of the Soviet products handled by the MRC during the month. Any difference is settled by hard currency exchange.[282] In addition, the fishermen are paid in cash each month for the catch.

Now known as Marine Resources Company International (MRCI), the company has expanded to include international seafood

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[282]Conversation with Dr. Kaczynski in November 1988. For example: the USSR buys 225,000 tons of pollack from US fishermen at an average price of US$ 130 per ton. The fish is processed onboard a Soviet ship and sold back to the MRC along with some Soviet originated fish products including krill. The MRC sells the products overseas and the revenues from these sales are divided equally between the partners. Two transactions--the resale of processed fish and the export of those products--earn dollars for the USSR whereas before there was only one way to earn hard currency.

marketing and trading activities, ship provisioning and repair. The company also acts as the representative of American manufacturers of timber and fishing equipment in the USSR.[283] In addition, the MRCI added a domestic broker network throughout North America. The company has developed a substantial trading business including the purchase and distribution of US-origin king and snow crab meat, pollack and cod fillets and blocks, and halibut, tuna and salmon steaks.

Since the beginning of 1989, the MRCI has been moving from being primarily a joint venture fishing company to becoming an extensive marketing and trading company. As a result of the continuing "Americanization" of the fisheries as larger and larger allocations are awarded each year to US factory ships and shore-based processing plants at the expense of joint venture operations,[284] the traditional backbone of the company--the joint venture--is now being phased out. In March 1989, MRCI signed an agreement to establish a new Soviet-American joint venture--the Kamchatka Pacific Company (KPC)--located in the USSR. This organization will fish for seafood to sell through the MRCI as well as construct shore-based processing facilities. KPC has recently been given permission to commercially fish for crabs in Soviet waters.

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[283] *SovAm* is a division of MRCI created to represent American firms in the USSR. *SovAm* is currently concentrating on representing Pacific Northwest firms producing a broad range of equipment for fishing, harvesting timber, and producing lumber, plywood, chipboard and other wood products.

[284] Walter T. Pereyra, "Some Preliminary Results of a US-Soviet Joint Venture," The Journal of Contemporary Business, V. 10, N. 1, First Quarter 1981, pp. 7-19. The venture and the US fishermen involved were significantly affected by the withdrawal of Soviet fish quotas in January 1980; it is felt that a quota for the joint venture processors of 20% of the expected US deliveries is reasonable and justifiable. The MRC strongly recommends that the joint venture be regarded as a model of change for improving US-Soviet relations.

The introduction of joint ventures in the US EEZ led to the explosive growth of domestic harvesting activity in 1981-87 and the consequent reduction of foreign fleet quotas. The current joint ventures appear to be temporary measures until the American processing industry can handle the catch processing requirements. Each year a smaller and smaller portion of the catch has been relegated to the joint ventures, as the American processing industry is better able to process the harvest.

Motivated by the success of the the joint venture with MRCI, the USSR established a USSR-US East Coast joint venture in June 1989 called[285] Resource Trading Company (RTC), a seafood processing and exporting company based in Portland, Maine. In June 1989, the Soviet processing ship, the *Riga,* purchased over 20,000 metric tons of Atlantic menhaden, "pogies," from Maine fishermen. The *Riga* processes the catch into fishmeal for chicken, hog, mink feed, as well as fish oil for margarine and industrial uses. The pogie is too bony to be used for human consumption and is domestically used only in small amounts as lobster bait. The prospect of a joint venture is attractive as the species is abundant, and the domestic fleet is underemployed. Currently, no menhaden processing plants operate north of Virginia. If the 40,000 metric ton quota is fulfilled, over 60 local fishermen in 11 catcher boats will earn over US$ 1.5 million.[286]

In addition, RTC has applied for a state permit to transfer an initial 3,000 metric tons of herring caught by 65 Maine fishermen in 17 vessels to the Soviet vessel, the *Artika,* for freezing and barrelling. This project will offer US$ 300,000 in export earnings to the domestic unemployed fleet. The domestic processing industry will not be affected in the near-term since the Maine factories are currently supplied to capacity by fixed gear vessels.[287]

The Donut Hole in the Bering Sea has been an area of interest and controversy for both the United States and the USSR. This is a 45,000 square mile pocket formed by the boundaries of the US EEZ on the south and east and the Soviet EEZ on the west. Though the area is technically labeled as "high seas," the two countries have decided to jointly manage fishing operations in the area[288] and in

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[285]Captain Tkachenko gave me the name and telephone number for a third venture, but the telephone is disconnected, and no company with that name is listed in that area code. Also, the Department of Commerce was not familiar with the company.

[286]Resource Trading Company 1989 Marketing Materials and follow-up telephone calls to Thomas Dowling, Managing Director.

[287]*Ibid.*

[288]The USSR suggested that Article 123 of the 1982 LOS Convention be used to deal with the Bering Sea straddling stock issue. This article covers the cooperation of states bordering enclosed or semi-enclosed seas.

1982 an agreement was signed to control the area's resources. American fishermen have complained of foreign fishermen freely "sneaking" into the US EEZ from the Donut Hole on a regular basis, and fear that the area has become a haven for illegal fishing activities.

The US and USSR established a bilateral working group to look at technical, enforcement, and international legal aspects. The idea of US-USSR regulating fishing in the Donut Hole raises new legal and policy issues regarding the areas outside the EEZs. A new comprehensive fisheries agreement was signed between the US and USSR on May 31, 1988 addressing the Donut Hole issue. This document establishes a basis for US-Soviet cooperation, consultation, and, if necessary, action on appropriate conservation and management measures of living marine resources in international waters beyond US-USSR respective EEZs. It is thought that some foreign vessels are illegally fishing in the US EEZ and reporting the catch as if it were from the Donut Hole.[289] A follow-up scientific symposium was scheduled in Sitka, Alaska July 19-22, 1988. The purpose of this meeting was to assess current knowledge and determine areas of future study of resources in the Bering Sea, focusing primarily on the fish stocks in the Donut hole.[290]

In the North Pacific and the Sea of Okhotsk, the Soviet vessels have traditionally competed with the Japanese fleet for resources. This competition has not been without controversy. Japan was effectively kept out of the Soviet Far East after World War 11. The MacArthur Line restricted Japanese fishing to the area immediately surrounding the home islands and the Ryukyus, eastward into the Pacific to the 165th median. Despite these restrictions, the Japanese were close to their prewar catch by 1955. Fearful that the Japanese would deplete salmon stocks, the Soviet Council of Ministers

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[289]Conversation with Ambassador Wolfe. In the early 1980's, the Japanese, Koreans, PRC, and Poland had only small catches from this area, but since 1985 the catch increased dramatically so that an estimated 1 million metric tons were harvested per year in 1986 and 1987.

[290]In addition to the US and USSR, Poland, Canada, PRC, Japan and South Korea have shown interest in this area.

established the Bulganin Line to protect fish stocks on the high seas adjacent to the territorial waters off Siberia.[291]

In 1976, the Japanese and the Soviets signed a reciprocal agreement in 1976 establishing a Japanese quota of 450,000 metric tons for the June-December period, and a Soviet quota of 335,000 metric tons in Japanese waters. The agreements terminated Japanese herring and crab fishing and drag net operations off West Kamchatka. Under a separate agreement, the Japanese were given a quota for salmon on the high seas at 62,000 metric tons which was a substantial reduction from 87,000 metric tons caught in 1975. These quotas have been renegotiated on a yearly basis.

The USSR and Japan turned to joint ventures as an alternative to the quota system. The first Soviet-Japanese joint venture, *Pilenga Godo*, was set up to stock salmon on Sakhalin Island. The two countries are working out the details for a similar venture in the Magadan *oblast* (region).[292] The USSR also established an association working with Japanese state and private organizations, *Nigiro Gege* and *Taie Gege*, and an association of Japanese fish producers, on the question of raising the effectiveness of salmon production. Also, the USSR currently is discussing a joint processing venture with the Japanese firm, *Morikawa Shoji*. As part of the agreement, the Japanese firm would re-equip Soviet vessels and build a fish processing plant on the Soviet Pacific coast in exchange for fishing access to Soviet waters.[293]

In Asia, in addition to Japan, the USSR has also cooperated with the PRC. An agreement for cooperation in research on fisheries was signed in Peking by the PRC, North Korea, North Vietnam, and the USSR on June 12, 1956 covering the area of the Sea of Japan, the Yellow Sea, and the East and South China Seas. This established a fishery commission headquartered in Peking. The agreement had

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[291]Butler, The Soviet Union and the Law of the Sea, p. 190. The result of this was the Japanese-Soviet agreement to regulate the exploitation of marine resources in this area signed on May 14, 1956.

[292]Press Release May 1989.

[293]"USSR: *Morikawa Shoji* (Japan),"Business Eastern Europe, February 2, 1987 p. 39.

four sections, fisheries, oceanography, fresh water, limnology and protection of fishery resources. Land-locked Outer Mongolia joined the agreement on December 15, 1958, probably out of interest in fresh water limnology. The PRC was reported to have withdrawn from the agreement in 1967.

Recently, the USSR has collaborated with the PRC on the preservation, reproduction, regulation of fish in the Amur Basin. Discussions are taking place for cultivating salmon.[294]

To deal with issues within the Soviet Bloc, COMECON was set up in 1949 to coordinate the world socialist economic system. In the 1960's the COMECON countries started to coordinate their long-term economic plans. These countries have cooperated in regulating fishing and research. For example, the USSR signed an agreement with Bulgaria, Hungary, Romania, and Yugoslavia to regulate fishing on the Danube. In 1959, the USSR, Bulgaria and Romania signed an agreement regulating fishing in the Black Sea. An additional agreement was signed by the USSR, Poland, and East Germany later joined by Bulgaria and Romania, to coordinate research and regulate of fishing activities including designing new fishing vessels and processing factories. The USSR signed an assistance agreement with Bulgaria in 1963 to help that country develop its ocean fishing capabilities.

Within the Soviet Bloc, Soviet trawlers coordinate fishing operations with those from Bulgaria, Cuba, East Germany, and Poland under the "Six Partite Agreement on High Seas Fisheries." This was originally a three party agreement signed by the USSR, Poland, and the GDR on July 28, 1962. The remaining three were added later.

In addition to the Eastern Bloc, the USSR has had several joint ventures with European countries, including a short-lived agreement to purchase fish at sea from British trawlers which lasted until 1978. Three British companies, including Joint Trawlers Ltd., Boyd Line, and Richard Irwine targeted mackerel and blue whiting which was then delivered to Soviet motherships. Over 87,000 tons were delivered in 1976, almost doubling to 186,000 tons or 19% of the

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[294]Press Release May 1989.

total British catch in 1977. The market value was estimated up to US$ 2 million.[295] The USSR has also discussed the possibility of managing the Soviet tuna fleet with a French company. Another possibility under negotiation is with a Spanish company to establish a joint venture to harvest, process and market fish harvested off the coast of Spain. In addition, the USSR established several commercial ties with West Germany in 1988, including two joint ventures, *Allimpeks* and *Alinter* and is negotiating for an additional venture with the West German company *Sokop* to refit the Soviet fleet with modern Western technology.[296] The USSR has had partnerships with Scandinavia countries including a venture with Sweden to market Soviet fish products, and a venture with Finland called *Esva*.

Officially, the USSR is enthusiastic about the future of joint ventures especially with developing nations. In a recent press conference, one Soviet official suggested that the USSR is on the verge of creating additional partnerships with seven countries, primarily African nations including, Angola, Morocco, and Tanzania. Also, the Soviets are negotiating with Liberia, a country they have had little contact with in the past. The USSR is discussing a venture with India, although no mention is made of what type of arrangement this will be. In addition, the USSR is negotiating with South Korea, a country with which it has had no diplomatic relations until recently. No information is available on the progress of these talks, although activity in this area would not be new. Russian whalers first operated off the east coast of Korea in the 1890's.

Despite the announcement of new ventures and the recent easing of restrictions on the formation of companies, the prospect for joint ventures in the 1990's is not promising. Coastal states are currently using the Soviet expertise to develop the local industry. Once the domestic vessels and onshore facilities can handle the operations, the Soviets will be excluded from these grounds.

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[295]Vladimir Kaczynski and Dominique LeVieil, "International Joint Ventures in World Fisheries: Their Distribution and Development," Washington Sea Grant Technical Report, University of Washington, Seattle, WA, August 1980, unpaginated paper.

[296]Press Release May 1989.

The situation is somewhat different in the US where Soviet expertise is not needed. Instead, the Soviet catch has stimulated the domestic fishing and processing industry. Pressure from the local processing industry has forced the US government to allocate smaller and smaller quotas to the Soviet processing ships. The MRCI will survive because it has expanded into international trade activities, but many of the other ventures will not. For example, the Soviets Australian joint venture ended after two years when the local fleet replaced the Soviet vessels.

The USSR will continue to pursue access agreements, but these, too, will become increasingly expensive. As a result of rapid worldwide communications, the developing coastal states quickly discover the provisions of other country's agreements and expect as much if not more from the USSR. Thus, the very expensive agreement with Kiribati was probably short-sighted even though the relationship did cause the desired havoc in the West, and did increase the Soviet's stature in the South Pacific, but it also raised the cost of fishing access for any future negotiations.

Summary

With the introduction of the EEZ, the Soviet Union has been forced to increase its political and ties worldwide as 95% of the fish stock are now under coastal state jurisdiction. By 1989, the Soviets had signed intergovernmental fishing agreements with 44 countries and participated in many joint ventures.

Developing nations initially were eager to enter into fishing agreements with the USSR, but their enthusiasm waned when fishing privileges and agreements were abused by the Soviet fleet. As a result, the Soviet Union has turned to joint ventures to gain access to coastal grounds.

Joint ventures operate through *Sovrybflot*. Since its creation in 1964, *Sovrybflot's* activities have expanded to include the import and export of all fish and sea products. It has even created a marketing division.

The outlook for Soviet joint ventures in the fishing industry for the 1990's is less optimistic than in the previous decade. Coastal states used the Soviets to develop their domestic infrastructure and technical expertise and now exclude Soviet operations.

Law of the Sea

A study of the Soviet position on law of the sea with special emphasis on the articles of the 1982 United Nations Law of the Sea Convention relating to fisheries.

Law of the sea emerged during the 15th century as the sea powers, Spain, Portugal, Britain, France, and later the Netherlands began to commercialize and militarize the high seas. The concept of freedom of the high seas actually was codified by the Dutch scholar Hugo Grotius in *Mare Liberum,* in which he stated that the use of the open ocean could not be controlled by a state or an individual. Hundreds of years and a variety of interpretations later, the concept of law of the sea has been addressed by the United Nations. The first session of the United Nation Conference on the Law of the Sea was held in 1958, followed by subsequent formal meetings in 1960, 1973 and 1982. The objective of these conferences was to codify international law relating to ocean issues.

Russian interest in law of the sea has been traced to Peter the Great and even earlier.[297] Russia first incorporated the concept of the freedom of the high seas in its "Declaration of the Armed Neutralities of February 28, 1780" which proclaimed the right of neutral states to navigate the seas freely.[298]

The Soviet position on law of the sea has been strongly influenced by politics and economics. The government's positions strayed little from Czarist law until the 1940's. Despite its weak Navy, the USSR codified the Czarist extension of jurisdiction from three to 12 miles in 1918 with "On the Establishment of the Border Guard." Within the 12 mile area, all Russian and foreign vessels were under supervision of the Border Guard.

In 1920, motivated by widespread famine, Lenin nationalized the fishing "fleet," all 12 trawlers. He also introduced legislation entitled the "Protection of Fishing and Hunting Grounds in the Arctic

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[297]Butler, The Soviet Union and the Law of the Sea, p. 167. Soviet lawyers trace Russian official endorsement of the concept of freedom of the high seas when in 1587 Czar Ivan Fedorovich rejected Queen Elizabeth's request that the White Sea be closed to all foreigners except the English. Freedom of the high seas became even more important with the creation of the Russian Navy by Peter the Great.

[298]I.P. Blishchenko (ed.), The International Law of the Sea,, Progress Publishers, Moscow, 1988, p. 8.

Ocean and the White Sea" which protected natural resources in the Barents Sea from exploitation by foreign fishermen, primarily the British and Norwegians. After strenuous objections by the United Kingdom and the alleged arrival of British warships, the USSR signed a treaty allowing British access to Soviet fishing grounds. Due to the fall of the Labor government, this was never ratified.

Additional fishing regulations were introduced at this time which protected the country's natural resources and also set up the organizational structure of the industry, including: "On the Reorganization of the Chief Administration of Fishing and the Fish Industry in Russia and its Local Organs," February 26, 1920; "On the Institution of the Floating Sea Institute," March 10, 1921; "On the Preservation of Fish and Animal Goods in the Northern Frozen Ocean," May 24, 1921. On March 2, 1923, with the legislation entitled "On the Order of the Exploitation of Fish and Sea Creature Industries in the Far East," the Soviets revoked all treaties concerning fishing or sealing in the Far East signed before the November 14, 1922.[299]

After World War 11, as a result of a strengthened Soviet Navy and Stalin's obsession with security, the Soviet 12 mile territorial sea was strictly enforced. At this time, foreign fishermen were excluded from their traditional grounds off the Soviet coast. Soviet patrol boats routinely apprehended vessels for illegally fishing. In addition, more than 1,000 Japanese vessels were seized inside this territorial zone in the Far East during the period 1945-1960.

The USSR increased its international presence in maritime issues by participating in the United Nations Law of the Sea Conferences. The was first Conference held in Geneva in 1958 when the USSR was represented by some its best known jurists and maritime law experts.[300] At that time the international standard of a three mile territorial sea was strongly opposed by the Soviet delegation for security and economic reasons.[301] As an alternative,

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[299]Press Release May 1989.

[300]These included G.I. Tunkin, Chairman of the delegation as well as A.N. Nikolaev and S.B. Krylov.

[301]Butler, The Soviet Union and the Law of the Sea, p. 41.

the USSR suggested at that Conference that each state determine the width of its territorial sea zone in accordance with its economic, geographic, and historical perspective.[302]

The Conference developed three Conventions relating to the fishing industry. The first of these was the 1958 Convention on the Territorial Zone and Contiguous Zone which the USSR subsequently ratified. These regulations were included in Soviet domestic legislation through the enactment[303] on August 5, 1960 of the "Statute on the Protection of the USSR State Boundary" which established a 12 mile territorial zone as agreed in the Geneva Conference. The breadth of the territorial waters was calculated from the normal baseline on the mainland and around the islands from the farthest point seaward of the internal sea waters of the USSR. The baseline was a straight line not exceeding 24 miles drawn from shore to shore of bays, inlets, coves and estuaries whose entire coasts belong to the USSR. In addition, waters of bays, coves, inlets, estuaries, seas, and straits historically belonging to the USSR were considered to be internal waters.[304] This legislation allowed passage of nonmilitary vessels on the condition that they follow a "customary" navigational course.[305]

The USSR also ratified the Convention on the Continental Shelf on October 20, 1960. To preserve the resources of the continental shelf,[306] the Presidium of the Supreme Soviet of the USSR adopted the Decree on "The Continental Shelf of the USSR" nationalizing the shelf's resources. On October 29, 1968, the Ministry of Fisheries

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[302]The proposal was defeated at a plenary meeting of the Conference by 47 votes to 21 with 17 abstentions. A similar proposal on March 21, 1960 was submitted and later withdrawn in favor of one submitted by 18 Third World nations. This, too, was defeated by 39 votes to 36 with 13 abstentions.

[303]Fishing was regulated by the "Statute for the Protection of Fish Stocks and the Regulation of Fishing in Soviet Waters." Regulations were introduced on September 15, 1958 to establish fishing seasons and catch methods for the individual basins at this time.

[304]Historic waters are those which have a special economic or strategic significance or special geographic conditions for the coastal state.

[305]Butler, The Soviet Union and the Law of the Sea, p. 44. Coastal state authorizations were required for the passage of military vessels.

[306]*Ibid.*, pp. 44-50.

published a "List of Living Organisms Which Are Natural Resources of the Continental Shelf of the USSR," containing 52 species of marine life, including some crab species, lobster, fungi, and algae.[307]

The Council of Ministers adopted the decree "On the Procedure for Conducting Work on the Continental Shelf of the USSR and the Protection of its Natural Resources" on July 18, 1969 which stated that any research, exploration or exploitation of natural resources was permitted only with government authority.[308] The Ministry of Fisheries was responsible for enforcing the edict with assistance from the Border Guard. Violations were punishable by fine up to 10,000 rubles or imprisonment for up to one year.[309] Foreign vessels and any equipment and catch were subject to confiscation.

However, unlike the previously mentioned two Conventions, the USSR never ratified the 1958 Geneva Convention on Fishing and the Conservation of the Living Resources of the High Seas, because of the compulsory procedure for settling disputes detailed in the Convention.

During the years of Law of the Sea (LOS) Conferences following the original one in 1958, the composition of the Soviet delegation changed. In the beginning, the members were primarily professional diplomats from the Soviet mission to the United Nations. Several officials from the Ministry of Foreign Affairs and Defense were also included. By the 1970's, the delegation was made up of maritime specialists and included officials from the Ministries of Fisheries, Merchant Marine, and Geology. The Soviet mission to the United

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[307]Ministry of Fisheries Order No. 315 of October 1968.

[308]The USSR used direct negotiations in accordance with the principle of the 1982 Convention when deciding the delimitation of the continental shelf between the USSR and Poland (1969), Finland (1965 and 1967) and Turkey (1978). The 1968 "Declaration on the Continental Shelf of the Baltic Sea" entered into by the USSR, GDR, and Poland stipulates the exclusively peaceful uses of the Baltic continental shelf, prohibits the transfer of any areas of the shelf to non-Baltic states for exploration, exploitation or any other uses and provides for relevant consultations among the parties to the declaration.

[309]Control over the propriety of exploiting the mineral and other nonliving resources of the Soviet continental shelf was delegated to the State Mining-Technical Inspection Agencies of the USSR.

Nations no longer participates directly in the Conferences, leaving this responsibility to the maritime specialists.

During the Conferences, the USSR carefully balanced its political and economic interests. Publicly, the Soviet Union tried to be the self-proclaimed leader of the developing nations. The Soviet delegation vocally supported the popular concept of coastal jurisdiction over territorial waters. However, as a maritime power with a strong navy and expanding distant water fleet, economics dictated different voting behavior. The Soviet position moved further from the Marxist concept of international law based on class interest to one more similar to the Western capitalist stance.

Freedom of the high seas was crucial for the Soviet naval, fishing, research, and merchant marine fleets. The only limit sought by the Soviets was on any military use of the seabed. At this time, the United States was ahead of the USSR in deploying underwater antisubmarine detection devices in the seabed.

By the mid-1970's, the official Soviet stance was to "achieve the universal cooperation for the utilization of the resources and for the progress and advancement of the nations of the world"[310] Many of the Soviet positions were ploys to gain Third World support. The USSR felt that its policy portrayed "true socialism" and criticized the Chinese, who also claimed leadership of the developing nations, for wanting to turn the oceans into an arena of anarchy and discord.

Under strong pressure from the developing nations who wanted to increase coastal jurisdiction, the Soviets accepted the concept of "progressive development." One of the issues associated with this concept was the EEZ. The developing nations wanted to protect and control their natural resources within 200 miles of their coastline. This stance was strongly opposed by the major fishing nations since the majority of the most commercially valuable stocks were located within the EEZs of Africa and Latin America. The Soviets opposed the concept of the EEZ in the LOS Conferences during the 1960's. The official reason was the Soviet concern that a large portion of the available food would be inaccessible to the world

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[310]Pavlov, "Detente and the Oceans,"p. 3.

population. Instead, they proposed a 12 mile zone with exclusive fishing rights that would supposedly protect the developing countries' interests.

An "understanding" USSR did recognize the economic necessity that the developing coastal state be allowed to reserve a share of the catch equal to the harvest caught by local vessels. In addition, it proposed that the coastal state receive a share of anadromous species equal to the total number spawning in the state's waters. A regional fishing organization or bilateral agreement would determine the total catch and the amount to be allocated to foreign fishermen. This position was viewed skeptically by developing nations. Regional fishing organizations were notoriously weak, and the end result would probably have been unrestricted Soviet fishing in the coastal waters.

In general, the USSR supported this type of regional consensus decision-making body instead of the creation of a powerful international authority which could be dominated by the Western imperialist powers. In the same vein, the USSR supported a cooperative body instead of coastal state jurisdiction so that the Soviets would have a vote. Characteristic of the Soviet position was its vocal support of the Inter-governmental Oceanic Commission (IOC). The advantages of the IOC was that it had a Soviet director and that it worked on a basis of coordinating national efforts rather than directing them. In addition, it was a forum for cooperation rather than an effective decision-making organization. The IOC failed to gain Western or developing nations' support. As the majority became in favor of an international authority, the Soviet delegation reluctantly agreed, but wanted assurances that the body could only coordinate the activities of states, not direct them.

This forum type of organization would coordinate research activities to be responsible to prevent "control and exploitation from imperialistic monopolies."[311] Despite developing countries fears that research would only benefit a few rich nations economically and militarily, the USSR strongly supported research. The Soviets felt

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[311] *Ibid.*

that any limitation on scientific research would be detrimental to the interest of the global community.[312]

The Soviet opposition to the 200 mile EEZ was relaxed in the spring of 1975 in exchange for unimpeded navigation through the international straits such as Dover, Gibraltar, and Ormuz.[313] Once assured of free passage, the Soviet delegation fully supported the EEZ with only economic restrictions on the use of the ocean in 1976.

The EEZ was incorporated into Soviet law on December 10, 1976, when the Presidium of the USSR Supreme Soviet passed a decree "On Interim Measures to Protect Living Resources and Regulate Fishing in Sea Areas Adjacent to Soviet Shores."[314] The Decree was enforced on March 1, 1977, and included "Regulations on the Protection of Fishery and Other Living Resources in the Coastal Waters of the USSR," confirmed by Decision No. 174 of 25 February 1977 of the Council of Ministers of the USSR. This Decree and Regulations established the regime of a provisional fishery conservation zone. Decisions of the USSR Council of Ministers introduced interim measures to protect living resources and regulate fishing in Pacific and Arctic Ocean areas adjacent to Soviet shores on February 24, 1977, in the Barents Sea areas on May 17, 1977, and in the Baltic Sea areas on March 24, 1978.

The EEZ was now acceptable to the Soviets as long as its fleets were guaranteed freedom of passage through international straits. The Soviet concern on the strait issue stems from the country's

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[312]Janis and Daniel, "The USSR: Ocean Use and Ocean Law," p. 12.

[313]The USSR has the world's longest coastline but very few ports. Most of the coast is blocked by ice for all or part of the year. Only the Black Sea offers the Soviet Navy ice-free ports. Geography also restricts the Soviet fleet. Passages are through narrow channels surrounded by territory of American allies. For example, the Northern Fleet's route to the Atlantic skirts the coast of Norway. The Baltic Fleet must sail through the 40 mile wide Kattegat between Denmark and Sweden, and the Black Sea ships pass under a bridge linking two halves of Istanbul at the Bosporous to reach the Mediterranean and then through the Straits of Gibraltar to reach the Atlantic. The main naval base in Vladivostok is hemmed in by the Sea of Japan where the 110 mile wide Korea Strait between South Korea and Japan is the widest exit. There is only the remote outpost of Petropavlosk-Kamchatskii on the eastern coast of the Kamchatka Peninsula which is not easily accessible by land.

[314]Blishchenko, The International Law of the Sea, p. 203.

geographical location for access to the oceans is often possible only via international straits.[315] For example, the only year-round maritime route connecting the European part of the USSR with the Soviet Far East runs through the Indian Ocean and calls for passage through international straits such as Bab el Mandeb and the Strait of Malacca. The USSR and other socialized countries sponsored a proposal on international straits which would preserve unimpeded transit through straits connecting two parts of the high seas.

The related issue of innocent passage was also important to the Soviets and has been a point of contention between the United States and the Soviet Union.

> Historically, innocent passage is a right ceded by coastal states from their sovereignty to foreign states for precise purposes; e.g. shipping. The USSR supports this, but interprets the right strictly: it must be necessary to go somewhere and there is no other way except through territorial waters. Territorial waters are a very important part of

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[315]The Northeast Passage is the 18,000 km Soviet areas adjacent to the Arctic coast. It is the shortest route connecting the western and eastern areas of the USSR. It is of great importance for the development of the Soviet polar areas and thus regarded as the USSR's most important sea lane. The Northeast Passage Administration was established to regulate all navigation issues in the area. The resolution "On Designing Lands and Islands in the Arctic Ocean as Soviet Territory" adopted by the Presidium of the USSR Central Executive Committee on April 15, 1926 strove to assert Soviet sovereign rights in the Arctic and establish a legal regime for the area. The US wants to internationalize the Arctic a move which is opposed by the USSR. The US challenges the right of the USSR to control access to the straits in the Northeast Passage and objects to the Soviet rule of compulsory icebreaker pilotage in the Vilkitskii and Shokalskii Straits. The 1982 Convention supports the coastal state right to enforce rules and regulations to prevent pollution and protect the marine environment in ice-covered areas. The USSR is taking the necessary steps to safeguard its rights in the Arctic by issuing the legal decree adopted by the Presidium of the USSR Supreme Soviet "On the Continental Shelf of the USSR" (1968) and "On the Economic Zone of the USSR"(1984). Also in order to protect the environment in this area, the USSR Supreme Soviet approved on November 26, 1984, the decree "On Strengthening Environmental Protection in the Areas of the Far North and in Sea Areas Adjacent to the Northern Coast of the USSR." This decree states that the harsh climate increases the vulnerability of the area and calls for greater environmental protection.

coastal state security which must be taken into consideration.[316]

This issue was incorporated into the Soviet legislation entitled "Rules for the Navigation and Presence of Foreign Vessels in the Territorial Waters (Territorial Sea), Internal Waters and Ports of the USSR," on April 28, 1983. This legislation on the innocent passage of foreign ships through Soviet territorial waters was in complete accord with the intent of the 1982 LOS Convention. Under the domestic legislation, innocent passage of naval vessels crossing Soviet territorial waters without entering Soviet internal waters is allowed through sea lanes, such as the two traffic separation schemes in the Baltic Sea, two in the Sea of Okhotsk and one in the Sea of Japan. Innocent passage[317] of foreign naval vessels entering Soviet internal waters and ports was allowed with permission of the USSR Council of Ministers or through treaties.

However, in reference to two situations in which the United States naval vessels "violated" Soviet territorial waters in the Black Sea,[318] the Soviets claim that the American warships do not have the

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[316]Transcribed Notes from the Law of the Sea Institute Conference held in Moscow in December 1988, Law of the Sea Institute, Honolulu, HI, April 1989, unpaginated paper.

[317]*Ibid.* The Soviets made reference to the need for consistent domestic legislation on navigation matters and on the exercise of control over scientific research.

On port state jurisdiction, the Soviets denied that a Soviet flag ship in trade in a US port may be required to request permission in advance of its visit.

On the right of innocent passage, the Soviet delegates to the Moscow Workshop stated that the right of innocent passage is predicated on passage from one high sea to another or from the high seas to another nation's EEZ and that it was not meant to cover simple navigation in the territorial sea without any destination-related purpose. The 1985 and 1988 incidents in the Black Sea involving US warships were based on an official US view that broadly interprets the right of innocent passage. In the Soviet view, their geographic situation is such that the necessity of traversing USSR territorial sea to move from the high seas to high seas or high seas to another nation's EEZ is limited to a very few places. In these areas the USSR has identified sea lanes for the exercise of innocent passage as defined in Article 12 of the Soviet Council of Ministers Decree No. 384, April 28, 1983 on "The Rules of Sailing and Stopovers of Foreign Warships in the Territorial Waters of the USSR, Internal Waters and Ports of the USSR."

[318]The USSR considers the Black and Baltic Seas essentially as bays of the coastal states. They cannot be used for transit or through passage, hence

right of innocent passage as the destination of the latter is not the internal waters or the ports of the Soviet Union and so the American ships have no purpose to be within this area. This situation worsened on February 12, 1988, when the Soviet government ordered two Soviet frigates to intentionally ram the American warships, the *Yorktown* and the *Caron*, for violating Soviet territorial waters. According to the US government, these ships were exercising their right of innocent passage under the "assertion of rights program" which allows US naval vessels to navigate in waters around the world in accordance with the American interpretation of the 1982 Convention.

The Soviets have a different interpretation and supported their action, saying that Soviet law requires foreign warships to receive permission to navigate in Soviet waters 30 days before entry. Warships are allowed to navigate only if in sea lanes created for international navigation. A list of these sea lanes is published in Decree Number 384 of the Council of Ministers of the USSR on April 28, 1983. The Black Sea is not included in this decree. In addition, the Soviets charged the warships with gathering military information so that the concept of innocent passage did not apply. The US strongly denied this allegation. The conflict was "resolved" recently when Secretary of State James Baker and Soviet Foreign Minister Eduard Shevardnadze signed a joint statement on September 23, 1989 in Jackson, Wyoming pledging to bring domestic legislation in conformity with the 1982 Convention. In addition, the two countries will develop a system to allow warships to indicate their status.[319]

The Soviet stand on the law of the sea issues mentioned above, including the EEZ, access through international straits, and the right of innocent passage are incorporated in its public support of the

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their status as enclosed seas. The 1936 Convention on the Regime of the Black Sea Straits limits the total displacement of such countries' naval forces and sets a maximum limit of 21 days for the presence of their naval vessels in the Black Sea. In 1974, the Baltic states created a Convention on the Protection of the Marine Environment of the Baltic Sea Area. A similar Convention is being discussed for the Black Sea.

[319]Eduard Shevardnadze, "News Conference in Jackson Hole, Wyoming," TASS, September 24, 1989 in Reprints from the Soviet Press, V. 49, N. 10, November 30, 1989, pp. 38-43.

1982 LOS Convention. The Soviet Union has called the 1982 Convention "a starting point"[320] in the codification of ocean law, and signed the Final Act and the LOS Convention on December 10, 1982.[321] In the statement made at the signing of this Convention, the USSR chose arbitration under Annex V11 as the principle means for the settlement of disputes. With respect to disputes concerning fishing, protection and conservation of the marine environment, marine scientific research and navigation, including pollution from ships, the USSR selected the special arbitration established under Annex V111. Under Article 298, the USSR is exempt from the application of compulsory procedures on disputes relating to sea boundary delimitations and military activities.[322] Under the Soviet doctrine of international law, decisions by the United Nations International Court of Justice do not represent principle sources of international law. They do not modify nor create legal norms.[323]

Soviet experts expect the 1982 Convention to be in force within the next six years.[324] Since signing the Convention, the USSR and other socialist countries "have been doing everything to have its principles and the new institutions it set up translated into reality."[325] Officially the Convention is viewed as an international

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[320]Transcribed Notes from the Moscow Workshop. Dr. Brochanian from the Ministry of Fisheries stated, "In our view the 1982 Convention does provide a starting point for an effective search for the solution."

[321]The Third United Nations Conference adopted the text of the Convention on LOS on April 30, 1982.

[322]Soviet Association of Maritime Law, Soviet Yearbook of Maritime Law, Moscow 1988, p. 19.

[323]*Ibid.*, p.31.

[324]Correspondence with Dr. Budislav Vukas, University of Zagreb, Zagreb, Yugoslavia, dated June 30, 1988.

[325]Blishchenko, The International Law of the Sea, pp. 5- 6.

> The Ministry of Foreign Affairs of the Soviet Union and the Soviet Government have especially emphasized that the signatory states should refrain from activities incompatible with the objectives of the Law of the Sea Convention. The primary task of all countries that have at least signed the convention is to make sure that the balance of interests developed in the convention is maintained. It is not the absolute but certainly the optimum balance of interest between the international

success and officials smugly note that the United States has not signed. The USSR has become a strong supporter of the United Nations effort, even to the point of paying their bills:

> We were often unwilling to put up the money for UN operations. Now we pay in good time, even on arrears, contributing tens of millions of dollars under the old but formally unacknowledged financial obligations...[326]

After signing the 1982 Convention, the USSR incorporated the text into its domestic law, the "Decree on the Economic Zone of the USSR", passed by the Presidium on February 28, 1984.[327] This decree, in force since March 1, 1984, superseded the Decree "On

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> community and the coastal state, taking into account the interest of many countries in the world. Maintenance of this balance is particularly important because national legislation has not yet been harmonized.

[326]"United Nations-Rebirth," *Izvestia*, August 26,1988 in Reprints from the Soviet Press, V. 47, N. 6, September 30, 1988, p. 26.

[327]Blishchenko, The International Law of the Sea, pp. 6-7.

> The problems of the world oceans are not being dealt with by Soviet scholars in the context of the changes taking place in this country...a new political thinking has developed ...that the Soviet Union and the Communist Party of the Soviet Union have placed heavy emphasis on the need to protect universal humanitarian values and resolve universal humanitarian problems...the world ocean is a common asset to all the world community and not only of coastal states....This problem is broadly related to the need to maintain peace and security apart from the need to diminish military presence and to ensure the safety of maritime navigation. It is important to set up an international system of security. It is regrettable that attention is seldom paid to the fact that the maritime aspect forms an important element of international security. Furthermore, Soviet leadership has given primacy to international law over all other rules and regulations, and over conflicting domestic regulations..It is necessary for states to clearly establish the primacy of international treaties over domestic law because treaties are basic instruments reflecting the will of states and their determination to continue progressive development.

Interim Measures to Protect Living Resources and Regulate Fishing in Sea Areas Adjacent to Soviet Shores" of December 10, 1978. The Soviet legislation is in complete accord with the 1982 Convention. For example, Article 3 states that the competent Soviet officials will ensure that proper conservation measures will be taken to manage the anadromous fish stocks. This changed the 1976 legislation which bestowed sovereign rights over anadromous stocks except in other states' coastal waters or economic zones.

Guidance for the management of fish stocks is contained in Articles 61-61 of the 1982 Convention which is reflected in Article 5 of the domestic Soviet legislation, which provides for the competent authorities, under the direction of the Council of Ministers, to set a TAC for each species of fish and other living resources on an annual basis. In addition, the Council is responsible for determining the portion of the harvest which is not caught by Soviet fishermen and can therefore be allocated to foreign fishermen. The authorities, under the Council of Ministers, are also responsible for setting conservation measures to secure "rational" fishing and reproduction of living resources. The MSY determined by these authorities is the basis for the TAC and is determined by use of all available scientific data.

Article 6 of the Soviet legislation is based on Article 5 of the 1958 Convention on the Territorial Sea and the Contiguous Zone and Article 8 of the 1982 LOS Convention. The Soviet laws prohibit foreign civilian and naval vessels from engaging in harvesting, research, and exploration activities in Soviet waters without proper permission from Soviet authorities.[328]

Article 19 of the Soviet legislation lists violations such as illegal exploration or exploitation of living resources within the economic zone and marine pollution. The Soviet government imposes fines of 10,000 rubles for these violations, increasing to 100,000 rubles for "violations in aggravating circumstances." The Presidium of the Supreme Soviet adopted a resolution on November 12, 1984 on the procedure to enforce Articles 19.

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[328] *Ibid.*, pp. 26-27.

> ...Officials of the authorities exercising protection of the economic zone of the USSR are entitled to confiscate from violators...fishing or hunting gear, equipment, tools, other objects and documents, as well as all illegal catch or bag. In cases where ships violating legislation on the economic zone of the USSR resort to force, or in other emergency conditions, the frontier guard may respond by taking all measures justified by the circumstances and necessary for suppressing the violation and detaining the offenders according to a procedure established by the USSR Council of Ministers.[329]

Two years after the 1984 Soviet legislation,[330] the USSR issued three additional decrees, one from the Presidium of the Supreme Soviet, and two from the Council of Ministers. The first decree from the Council of Ministers was issued in February 1986 and outlines the utilization of the living resources in the economic zone including anadromous species, those stocks which originate in Soviet rivers which then migrate outside the economic zone. This decree was later reinforced by the decrees from the Council of Ministers.

In addition to the 1982 Convention and its domestic implementation, the Soviet Union has become actively involved in expanding its international multilateral and bilateral agreements relating to fisheries. The USSR is party to 64 intergovernmental and 13 interdepartmental agreements with 44 countries. All intergovernmental fisheries organizations have been established on the basis of international conventions. The Soviet Union is even considering joining the FAO and has been actively involved in the 1984 FAO Conference on Fisheries Management and Development held in Rome.

This following section traces cooperation agreements chronologically by ocean region starting with the Northeast Atlantic and ending in the Baltic and Black Seas. Updated information on conventions and agreements is included in the paragraph discussion.

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[329] *Ibid.*

[330] Please refer to Appendix K for excerpts pertaining to fisheries from the "Edict of the Presidium of the Supreme Soviet" dated February 28, 1984.

International cooperation on the regulation of fisheries can be traced as far back as the early 1900's. The Russians, Dutch, Danes, Swedes, Norwegians, and Germans decided to establish the International Council for the Exploration of the Sea (ICES) in 1902 to manage the Northeast Atlantic fisheries. A more recent Convention on the ICES was signed in Copenhagen in 1964 by 18 governments including Great Britain, the US, and the USSR. Its objective was to sponsor research programs in the Northeast Atlantic and publish the results.

Also in the Northeast Atlantic, the USSR became a member of the North-East Atlantic Fisheries Convention (NEAFC) which established the North-East Atlantic Fisheries Commission in January 1959. This was revised in 1980 because of increased coastal jurisdiction after the Northeast Atlantic states established 200 mile EEZs. The new convention came into force on March 17, 1982 with members including the USSR, Bulgaria, Faroe Islands, the GDR, Iceland, Norway, Poland, Portugal, Spain, Sweden, and the EC.

The USSR has participated in trilateral agreements such as the 1973 treaty with Iceland and Norway on the Atlantic herring fisheries and the 1974 agreement with Norway[331] and the United Kingdom on North Atlantic cod. The USSR was not invited to participate in the Convention for the Conservation of North Atlantic Salmon, enforced on October 1, 1983 between Canada, the EC, Iceland, Faroe Islands, Norway, Sweden and the USA, but has asked to qualify for membership. The convention established a general interdiction on salmon fishing outside the coastal states jurisdictional waters, and a qualified interdiction to fish outside 12 miles. The

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[331]Conversation with Captain Tkachenko. Norway and the USSR have been negotiating delimination of their continental shelf since 1971. Norway wants to apply the median line principle, while the USSR argues for special circumstances and the application of a sector line. The USSR and Norway concluded the Grey Zone agreement in 1978, renewed annually. The Grey Zone is 6,000 square kilometers larger than the disputed area of 61,000 square kilometers of which 23,000 and 3,000 square kilometers are clearly Norwegian and Soviet respectively. In a 1988 proposal the Soviets suggested no line be drawn. Instead the two countries should establish a joint management area. Norway has proposed cooperation in management, but consistently has opposed joint management. Any resolution is likely to become complicated by the fact that oil exploration is moving towards the area.

commission does not undertake its own research, so cooperates with the ICES to establish scientifically-based recommendations.

The USSR also has participated in conventions concerning the Northwest Atlantic. The USSR adheres to the ICNAF which was revised in 1977 and came into force in January of 1979.

Concerning the Southeast Atlantic, the USSR participates in the International Convention for the Conservation of Atlantic Tunas (ICCAT) which was concluded on May 14, 1966 with 22 parties including the USSR, US, Brazil, Japan. The Commission is located in Rio de Janiero. The USSR also became a member of the International Convention on the Conservation of the Living Resources of the Southeast Atlantic (ICCLRSEA) concluded in Rome on October 23, 1969. Membership is comprised of 17 states including the USSR, Belgium, Bulgaria, Cuba, Federal Republic of Germany (FRG), Italy, Japan, Poland, Portugal, South Africa, and Spain.

In the Pacific, the USSR participated in the Northwest Pacific High Seas Fisheries Convention in 1956 with Japan. In addition, on February 9, 1957, Canada, Japan, the US and the USSR concluded in Washington an Interim Convention on the Conservation of North Pacific Fur Seals (ICCNPFS) for a period of 6 years. The convention is extended every four years. The purpose of the convention is to establish maximum acceptable limits for exploitation of fur seals in North Atlantic. The convention prohibits marine harvesting of seals. In compensation for Japan's and Canada's renunciation of marine harvesting of seals, the USSR and the US each transfer to them 15% of the fur annually harvested in Soviet and US seal rookeries.[332]

More recently, in December 1987, Soviet scientists joined others from the United States, Canada, and Japan in Ottawa for the Pacific International Commission for the Exploration of the Sea (PICES) to discuss the formation of a regional scientific organization for the North Pacific. All but Japan agreed to the formation and scheduled to meet again at a later date.

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[332]The Arctic seals are traditionally harvested by the countries bordering the Arctic Circle. On April 12, 1983, the USSR and Norway reached an agreement on the conservation of seals in this area.

The Soviet Union has participated in cooperation agreements concerning the Antarctic, the first being the International Convention for the Regulation of Whaling concluded in Washington D.C. in December 1946 which set up the International Whaling Commission (IWC). The IWC appeared to be more concerned with stabilizing the falling price of whale oil than it was with the diminishing population of Antarctic whales. Thus the TAC suggested by the Commission was based on the oil yield per species, rather than population dynamics. Not all the members agreed on the Commission's recommended TAC and so the fishery was basically unregulated. The IWC did not have the enforcement capability to restrict entry into the fishery, so, by 1965, the Antarctic whale fishery was close to depletion. At this point, the members realized the seriousness of the whaling problem and were finally able to agree on whaling limits acceptable to all the members.

The Soviet krill harvesting operations are guided by the principles established in the 1959 Antarctic Treaty and the more recent 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). This has taken an ecosystem approach to fishery management instead of examining one fishery and coming up with a MSY. The group's objective is to conserve the resources rather than maximize the fish yield. CCAMLR is limited in its power to protect stocks because of differences in interpretations of members and the scientific uncertainty of the area.

The USSR has also participated in international conventions on the Baltic and Black Seas. On September 13, 1973, Denmark, the FRG, Finland, GDR, Poland, Sweden, and the USSR concluded in Gdansk, Poland a Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts. This set up the International Baltic Sea Fishery Commission (IBSFC) in Warsaw. Its aim was to maintain and increase the living resources of the Baltic Sea and to ensure the optimum catches as well as to expand and coordinate research efforts among the signatories. Denmark and the FRG ceased to be parties to the convention upon entry to the EC which became a party to the convention. Measures were adopted by a two thirds majority, but enforcement was left up to the individual

states. The Convention was revised in Gdansk on September 13, 1977 to take into account the increased claims of the Baltic states over the coastal waters.

The Convention on the Protection of the Marine Environment of the Baltic Sea was held at Helsinki on March 23, 1976. Participating states include the USSR, Denmark, Finland, GDR, FRG, Poland, and Sweden.

The USSR is the only Baltic state to claim a 200 mile EEZ and has recently concluded new delimitation agreements with Finland and Poland. This establishes a single maritime boundary to delimit territorial waters, EEZ, fishery zones and continental shelves in the area.[333]

The Soviet Union also has been active in the Commission for Black Sea Fisheries along with Romania and Bulgaria. In addition, the USSR has concluded relevant agreements with Sweden, Denmark, Finland, Norway, Japan, Bulgaria, and Romania for cooperation in rescue and assistance to ships and aircraft in distress in the Black Sea. Bilateral agreements have been concluded to ensure prompt cooperation and assistance, no matter the nationality, for distressed ships in the Baltic, Black, Barents, Bering Seas and the Seas of Japan and Okhotsk. Salvage and rescue operations in these territorial seas are performed under relevant national legislation with a major exception being agreements with Denmark and Finland. The Soviet agreements with these two countries allows for the distressed ship to decide which nationality of ship she will call for assistance. In addition, the 1971 "Agreement on Cooperation in Merchant Shipping" concluded by the USSR, Bulgaria, Czechoslovakia, GDR, Hungary, Poland, and Romania, states that a ship in distress off the shores of any contracting party is to be given assistance.[334]

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[333]"'New' Soviet Delimination Agreements with its Neighbors in the Baltic Sea," Ocean Development and International Law, V.19, N. 2, 1988, pp. 143-158.

[334]Blishchenko, The International Law of the Sea, pp. 157-159. In the USSR organization and assistance to vessels is done by the National Maritime and Salvage and Rescue Association of the Merchant Marine Ministry. The Ministry of Fisheries has its own rescue and salvage services.

The trend in the Soviet Union is towards increased international cooperation which is then codified into domestic legislation. The Soviet Union has moved away from the isolationism under Stalin to become an active participant in the world arena of international politics.

Summary

The Soviet position on law of the sea has been strongly influenced by politics and economics. The Soviet position on coastal jurisdiction shifted from the support of Czarist law under Lenin and Stalin, to accepting a 200 mile EEZ with guarantees of freedom of passage for its fleets.

After signing the 1982 LOS Convention, the Soviet Union codified this information into its domestic legislation. As a result of the EEZ, the Soviet Union has been motivated to participate in bilateral treaties, joint ventures, and international conventions to gain access to its traditional fishing grounds.

Future Options and Conclusion

A study of future options open to the fishing industry in the 1990's focusing on krill and tuna from the high seas and on aquaculture in the coastal and inland waterways of the USSR. Despite these options, the future of this industry is less optimistic than in the 1970's or even the 1980's.

Despite the stock depletions and the enclosure of its traditional grounds, the Soviet Union is still the number two fishing nation after Japan, with 12% of the world catch, including 28% of the world output of frozen, refrigerated, and fresh fish and 37% of world's canned fish.[335] The Soviet Union is planning to intensify its fishing efforts including a 15% increase over the 1985 total catch by 1990, and an 11% increase in its commercial production. Edible fish products including canned goods is expected to increase from 5.3 million tons in 1986 to almost 5.7 million tons by 1990. Fish meal production is planned to increase from 712,000 tons to 800,000 tons during the same period.[336]

In order to fulfill these plans, the USSR has implemented a multi-faceted strategy to increase the quantity and quality of fish and fish products. The first goal is to "intensify fishing operations in the littoral waters of the USSR" by increasing the domestic harvest at the expense of the Japanese and South Koreans. Currently, the catch in the Soviet EEZ is over five million tons of primarily Alaskan pollack. In conjunction with this program, the government is focusing on its mariculture program to expand the Soviet harvest in its inland and coastal waterways. In connection with this expansion, the government plans to set up a modernized network of fish processing enterprises conveniently located to the harvesting operations throughout the country.[337]

In keeping with its multi-faceted strategy, the USSR is seeking even greater access to fishing grounds within the coastal waters of Africa and the South Pacific through bilateral agreements as well as participating in future joint ventures. Although, joint ventures were the "answer" to the EEZ during the 1980's, their future seems less bright in the new decade as domestic fishing industries, including

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[335]Press Release May 1989.

[336]*Ibid.* A resolution passed on April 5, 1989 calls for "the intensification of commercial fishing in external waters and to develop the fishing industry on the high seas."

[337]*Ibid.*

processing enterprises, ease foreign partners like the Soviet Union out of their fisheries. This is because the Soviet Union has given the coastal state the necessary technology and knowledge to run the domestic fishing industry, thus eliminating the need for Soviet services. The joint venture operations have also increased coastal states' awareness of their own resources and by increasing domestic demand for fish and fish processing have attracted new players into the market. As the domestic industry becomes more successful and thus more powerful, the local companies are then able to lobby for legislation to keep the Soviet vessels out of the coastal waters.

As joint venture options decrease, the Soviet Union is focusing on finding and developing new fishing grounds outside coastal jurisdiction. Since the USSR is very interested in furthering its development of high seas fisheries, the industry will continue to modernize and redesign fishing vessels, auxiliary fleets, and its research vessels so as to increase the total harvest, so that up to 35% of the total catch will be from outside coastal EEZs. The USSR is actively exploring the potential of underutilized stocks in the world's ocean. Despite Western skepticism, Soviet scientists estimate that fishing in the neritic, epipelagic, and bathypelagic zones could be ten times greater then the current harvest now is in these waters, given the right equipment and expertise.[338]

One area of particular interest is the underwater mounts in the Northern Pacific and Bering Sea fishing grounds which are not within the American or Soviet EEZs. The USSR also has been sending its fleet to the open sea outside the Peruvian and Chilean EEZs. At the same time, the USSR is becoming increasingly interested in the Southwest Pacific fisheries as a long-term resource, particularly tuna. According to Soviet scientists, only one third to one fifth of the potential catch of tuna is harvested currently in the world's oceans. Despite Western belief that the tuna fishery is overcapitalized, the USSR has heavily invested in specialized vessels for this industry to

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[338]Vladimir Kaczynski, "Distant Water Fisheries and the 200 Mile Economic Zone," Occasional Paper N. 34, Law of the Sea Institute, Honolulu, HI, 1983, pp. 33-34.

try to increase its share of the world catch to 18%.[339] Tuna products are expected to produce food for the Soviet population as well as hard currency, though one Soviet official denies that tuna is sought for foreign exchange.[340]

Soviet interest in the tuna industry started in the 1960's when Soviet surveys showed ample supply of the fish in the Indian, Atlantic, and Pacific Oceans. The Soviets began harvesting the tuna experimentally with one tuna clipper purchased from Japan followed later by two Japanese tuna seiners. The first Soviet tuna ship, a long liner called the *Nereida*, was constructed in 1972, followed by four motherships of the *Leninskii Luch* type bought from Japan in 1974. The Soviet assessment of the potential tuna harvest from the West Indian Ocean and the East Central Atlantic prompted the Soviets to order US$ 100 million worth of tuna vessels from Poland in 1976.[341]

Krill is another species of great interest to Soviet scientists for further future development. Like tuna, krill operations need specially designed vessels. Although krill has a great harvesting potential, the industry will not show an immediate profit because of the necessary large upfront investment.

Krill is an important link in the food chain for all Antarctic living resources. Originally, krill was thought to only exist in surface waters where it is consumed by whales, seals, and seabirds. Recently, it was discovered that adult krill can live at considerable depths where it is consumed by bottom fish, making this an even more important part of the food chain. The potential harvest of krill from surface and deep waters is estimated to be 100 to 200 million metric tons annually, making krill the largest known species in existence. However, until an edible consumer product is acceptable to the population, krill harvesting is a very expensive method to produce fishmeal.

The next decade will be challenging for the fishing industry, for the cream of ocean fishery possibilities has been skimmed off. Now

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[339]Conversation with Dr. Kaczynski in November 1988.

[340]Correspondence with Dr. V.A. Teplitsky dated August 23, 1989.

[341]Kaczynski, "Soviet Bloc Tuna Fisheries: Perspectives for Development," pp. 2-6.

the fishing industry faces increasing competition from the agricultural sector for budgetary consideration. Fish will remain a source of much sought after hard currency and food, but the prospects for the optimistic growth forecasted by the Soviet government are not realistic. Despite the current profitability of the fishing industry, several factors limit future growth of this industry. Restricted access to coastal fisheries, depleted stocks worldwide, as well as the high cost of open ocean fishing operations dim the future of the Soviet fishing industry in the 1990's.

APPENDIX

Appendix A

Background Information on the Agricultural Sector

The agricultural sector has a long history of crisis management and mismanagement. Stalin's introduction of Collectivization in 1929 has been a disaster both politically and economically. It changed the traditions of rural development more profoundly than the Revolution did. Stalin's radical approach destroyed any future development of family-based agriculture which has been successful and highly profitable in other parts of the world.

Khrushchev promoted three main agricultural programs: the Virgin Lands Program, the Corn Program and the "Plow Up" Campaign. The first of these was an effort to cultivate a large tract of land in Siberia and Kazakhstan in order to increase grain output. Beginning in 1954, 13 million hectares[342] were cultivated followed by 42 million hectares being seeded by 1960. The results were poor despite the massive investment in the program because of the marginal soil, variable climate, short growing season, and scarcity of irrigation.

The Corn program increased the area dedicated to corn production from 4.3 million hectares in 1953 to over 37 million hectares by 1962. The program was based on the success of the American Corn Belt, and did not take into consideration the different climatic conditions or the American use of fertilizers and hybrid varieties specially adapted to the local environment.

The final program, "Plow Up," was introduced in 1961 to eliminate the grassland system of crop rotation which was prominent under Stalin. This campaign drastically cut the area of land devoted to fallow. These three programs had "successful" short-term crops, and "bought time" for Khrushchev politically, but were disastrous in the long run.[343]

During the Brezhnev era, the equivalent of a US$ 1 trillion was invested in agriculture. Most of the money was squandered on improperly used fertilizers, grandiose irrigation projects, and the concrete livestock sheds that were estimated to cost more per cow than a small apartment. Much of the money ended up in the pockets

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[342]One hectare is 2.47 acres.

[343]Paul R. Gregory and Robert C. Stuart, Soviet Economic Structure and Performance, Harper & Row, Publishers, NY, 1974, pp. 243-245.

of corrupt politicians. In response, Andropov set up a campaign for strict discipline, followed by Chernenko's unsuccessful program of irrigation and land reclamation.[344]

Now Gorbachev has introduced plans for the intensification and administrative reorganization of the agricultural sector. Currently, 35% of the total Soviet budget is dedicated to agriculture. This large percentage hurts development in other branches of the economy. In addition, the increased investment has not helped the annual harvest, which in 1988 was the lowest in three years, falling below the target level of 235 million tons.[345] The USSR produces enough grain for bread, but not enough for livestock feed, so that in a poor harvest year, the consumer suffers by a reduction in the supply of meat.

Gorbachev has responded to the crisis situation in this sector by introducing reforms to increase productivity on the farms. Currently, there are 6,500 loss-generating collective and state farms which control 21% of the farming lands and 18% of the plough land. One method of reform has been the introduction of a lease arrangement. The reintroduction of what Gorbachev delicately refers to as "individual property" could cause the most sweeping overhaul in Soviet agriculture since Stalin collectivized farms in 1929. Currently, one Soviet collective farmer feeds seven to nine people, whereas a Dutch farmer can feed 112. Peasants have their own plots on 3% of the arable land in the USSR, but produce about 60% of the potatoes and honey, 40% of the fruits, berries, and eggs, and 30% of the milk, meat, and vegetables. It is estimated that private plots produced 25% of the USSR's total crop output and 30% of the total milk and meat output in 1986.[346]

A new lease arrangement was introduced at the White Dacha State Farm on the outskirts of Moscow. Instead of paying farmers a flat fee no matter how much they produce, the farm's 100 pig farmers started to operate under a lease contract, a business arrangement in which the farm leases the equipment to the farmers for a fee. In return, they agree to sell the farm enough meat to cover

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[344]Zhores Medvedev, Soviet Agriculture, W.W. Norton & Company, NY, 1987, pp. 317-318.

[345]The preliminary figure was 195 million tons, down from 211 million tons in 1987. The USSR will import at least 9 million tons of grain from the US in each of the next two years.

[346]Mikhail Gorbachev, "Boosting Agricultural Production Through Encouraging Contract-Farming and Restructuring Economic Relations in the Countryside" *Pravda* October 14, 1988 in Reprints from the Soviet Press, V. 47, N. 11-12 December 15-30, 1988, p. 36.

its state quota as production quotas are still handed down by the state. Any extra meat can be sold privately for profit. The idea is to encourage increased production and reduce costs. However, the uncertainty concerns many of the farmers whose contract only lasts two years. Currently, Gorbachev is trying to increase the length of leases to 50 years to make farmers feel like masters of the land, the principle stops just short of renouncing the socialist principle of state ownership of land.

Even if these reforms increase output, the pricing system remains a detriment to economic recovery. Prices have been reviewed in isolation on a yearly basis, never as part of the whole economy. Wholesale or retail prices for products as important as agricultural produce were often determined in a non-industry standard method. Currently, 80 to 90% of prices are set centrally. Prices of raw materials are expected to double after a price review and reform scheduled in 1990.

In 1985, the state provided 54.7 billion rubles in subsidies for agriculture; 35.1 billion for meat and milk alone. Subsidies are intended to stimulate agricultural production while allowing the state to hold down retail food prices. The price of bread has remained the same since 1955. Meat, milk, and butter have been unchanged since 1962. This has resulted in an interesting situation where peasants sell grain to the state procurement agencies at a high price and feed their livestock with heavily subsidized bread from bread shops. In fact, it has been estimated that one of every four families in Estonia and Belorussia buys food to be used as livestock feed. As a result, on July 1, 1986 the reselling of bread became a crime with a fine of 50 to 100 rubles.[347] It is estimated that the state subsidizes over 100 billion dollars of agricultural goods every year. Subsidies on bread and other important stables will probably be reduced but not revoked entirely because of fears of huge inflation and political upheaval.

The USSR has introduced an additional reform to try to reduce the agricultural imports,[348] while stimulating domestic production. Now some farmers who grow wheat and other commodities will be paid in foreign currency, presumably US dollars, for anything they produce above average levels from 1981-1985. The move implicitly acknowledges the relative worthlessness of the ruble--now officially US$ 1.60, but traded on the black market for 10 cents or less.

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[347]Goldman, Gorbachev's Challenge, p. 35.

[348]The USSR is world's largest importer of grains. By 1985, the annual import of agricultural products exceeded US$ 16 billion.

The Gorbachev's reforms do not deal with one of the sector's the major problems. Currently, up to 30% of some crops spoil on the way to market. This is partially due to the fact that only 40% of Soviet farms have a storehouse, and often the building is used to store farming equipment, not food. Soviet planners have a tendency to build fewer but more grandiose storage and processing facilities, so that farms are located an average of 200-300 miles away from grain storing buildings. In addition, over one quarter of the state and collective farms are not serviced by roads.[349]

A lack of decent roads, adequate transport and processing is compounded by the idiocies of the State Agro-Industrial Committee, *Gosagroprom*, which oversees the agricultural sector.[350] *Gosagroprom* sets production quotas, provides supplies and manages an archaic distribution system. The system takes so much of the produce to urban centers like Moscow that the rural areas are deprived of food they grow, and the locals must travel to the cities to buy food. *Pravda* recently disclosed that one region delivers 38,000 tons of meat annually to Moscow, only to have its residents travel to the city via heavily subsidized *Aeroflot* flights to purchase about half that amount. A Soviet joke is that the *Gosagroprom* should be renamed *Gosagropromkj*, roughly translated as *Gosagro*-Blunder.[351] Gorbachev announced the abolition of *Gosagroprom* at the March 15, 1989 meeting of the Central Committee.

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[349]Goldman, Gorbachev's Challenge, p. 35.

[350]*Gosaprogram*, USSR State Agro-Industrial Committee, is the central organ of state management of the USSR's agro-industrial complex formed in 1985 to streamline the bureaucracy of the previous system in which seven All-Union Ministries and departments managed the agriculture and food processing sectors.

[351]Conversation with Captain Tkachenko.

Appendix B

The New Soviet Government

General Secretary Gorbachev wants to radically restructure the Soviet government, replacing it with a system more Western in style.

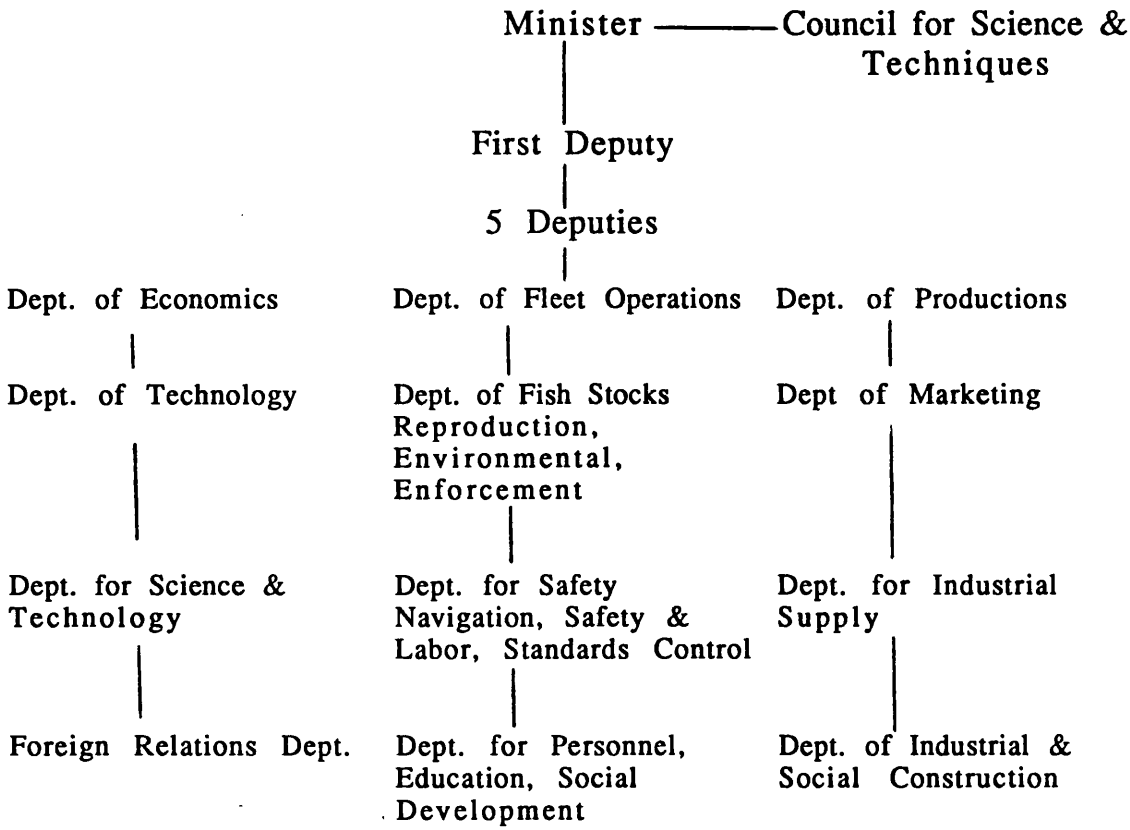
Old System	Replaced By
President of the Presidium Nominally head of state, presides over Supreme Soviet and performs mostly ceremonial duties	*President of the Supreme Soviet* US-style executive who conducts foreign and defense policy and is elected by secret ballot by the new Congress
Presidium of the Supreme Soviet 39 members oversee ministries and issue laws, but like the President, they are answerable to the Party	*Presidium of the Supreme Soviet* 17 Vice Presidents assist the President and oversee committees of the new Supreme Soviet
Supreme Soviet Technically the highest organ of state authority, but actually a rubber stamp for the President's decisions	*Supreme Soviet* Smaller 2 Chamber Parliament with year-round real legislative duties and is answerable to the new Congress
	Congress of the People's Deputies 2,250 member forum which meets annually to decide major policy issues and elect the President and Supreme Soviet
Local Soviets Councils supervise departments but are bound by local Party directives	*Local Soviets* Councils have enhanced authority to manage economic enterprises in their area and are presided over by the Party's regional secretaries

Time Magazine, July 11, 1988, p. 29.

Appendix C

Organizational Charts for the Ministry of Fisheries Three Versions

Ministry of Fisheries
Most Recent Version September 1989



This is the most recent organizational chart which I received from Captain Tkachenko in September 1989 after his visit to Moscow and conversation with Deputy Minister Zilanov.

Ministry of Fisheries
Version 2 1989

1. Minister
    a. Collegium
2. Deputy Ministers
    a. Kamentsev "First Deputy Minister" (Atlantic)
    b. Eliseev, replaced by Orlov, replaced by Kudriavtsev
    c. Sukhorochenko (died 12/15/70) replaced by Rytov, replaced by Gulchenko
    d. Studenetskii (research)
    e. Zhigalov
3. Regional Administrations
    1. Far Eastern Fisheries
    2. Northern Fisheries
    3. Western Fisheries
    4. Azov and Black Sea Fisheries
    5. Caspian fisheries
4. Moscow apparatus

    Central Administrations

    6. *Glavnoe upravlenie po rybovodstvu i rybolovstvu vo vnutrennikh vodoimakh*
    7. *Glavnoe upravlenie tarnoi promyshlennosti*
    8. *Glavnoe upravlenie po remontu flota*
    9. *Glavnoe upravlenie material 'no-technicheskogo snabzheniya-GLAVRYBSNAB SBYT*
    10. *Glavnoe upravlenie po okhrane i vosproizvodstvu rybnykh zapasov i regulirovaniyu rybolovstva-GLAVRYBVOD*
    11. *Glavnoe gosudarstvennaya inspektsiya bezopasnosti moreplavaniya i portovogo nadzora flota rybnoi promyshlennosti*

    Working Administrations

    12. *Planova-ekonomicheskoi upravlenie*
    13. *Finansovoe upravlenie*
    14. *Upravlenie promyshlennogo rybolovstva*
    15. *Upravlenie proizvodstva rybnoi produktskii i novoi tekhnologii*
    16. *Upravlenie sudostoeniya*
    17. *Upravlenieekspluatatsii flota i portov*
    18. *Upravlenie nauchno-issledovatel'skikh institutov i novoi tekhniki*
    19. *Upravlenie gslavnogo mekhanika i glavnogo energetika*
    20. *Upravlenie kadrov i uchebnykh zavedenii*
    21. *Upravlenie proektirovaniya i kapital'nogo stroitel'stva*
    22. *Upravlenie organizatsii truda, zarabotnoi platy i rabochikh kadrov*
    23. *a. Upravlenie eksportnikh postavok*
        b. Proizvodstvennoe upravlenie po proizvdodstvu i realizatsii ryby i rybnoi produktsii
    24. *Upravlenie po delam rybolovetskikh kolkozov*
    25. *Otdel svyazi i poiskovoi tekniki*
    26. *Transportnyi otdel*

27. *Glavnaya inspektsiya po kachestvu rybnoi produktsii*
28. *Nauchnii-tekhnicheskii sovet*
29. *Tsentral'naya bukhgalteriya*
30. *Pervyi otdel*
31. *Vtoroi otdel*
32. *Yuridicheskii otdel s arbitrazhem*
33. *Kantselyariya ministerstva, s vklyucheniem v ee sostav sekretariata i inspektskii pri Ministre*
34. *Khozyaistvennole upravlenie*
35. *Glavnji informatsionii post upravenija po koordinatsii vychisletel'nkyk rabot, issledovaniiu i rukovodtsvu operatsiiami*
36. *Otdel Po Tekhniki Bezopasnosti i Promyshlennoi Sanitarii*
37. *Automatisirovanaia systema upravlenii proizvodstva*
38. *GLAVPROMRYBSBYT*
39. *GLAVSPETSSTROI*

Correspondence with Milan Kravanja. This information is from the working papers of the Department of International Affairs under the Department of Commerce.

Ministry of Fisheries
Version 3 1988

Minister	N.I. Kotlyar
First Deputy Minister	N.P. Kudryavtsev
Deputy Ministers	Y.N. Bystrov, A.N. Gul'chenko, V.A. Kryzhevskiy, N.I. Lysenko, B.D. Monakov
Other Collegium Members	M.I. Drozdov, A.S. Gaydukov, V.G. Lipanov, I.V. Nikonorov
Fish Breeding and Fishing in Inland Waters Main Administration	
Chief	---
First Deputy Chief	Y.I. Stepanchikov
Deputy Chief	---
Fishing Industry of the Azov Sea and Black Sea	
Chief	I.F. Denisenko
Deputy Chiefs	V.N. Polulyakov, V.I. Zakurdeyev
Fishing Industry of the Caspian Sea	
Chief	A.A. Shaposhnikov
First Deputy Chief	---
Deputy Chiefs	I.I. Akmayev, P.P. Bykov, Y.V. Papiyan, N.K. Popov
Fishing Industry of the Far Eastern Basin	
Chief	N.T. Nosov

First Deputy Chief	V.F. Starzhinskiy
Deputy Chiefs	B.L. Blazhko, G.P. Lebyatin, S.L. Nikolenko
Fishing Industry of the Northern Basin	
Chief	S.V. Kireyev
First Deputy Chief	---
Deputy Chief	A.L. Gekhman
Fishing Industry of the Western Basin	
Chief	B.G. Sokolov
First Deputy Chief	N.Z. Telichev
Deputy Chiefs	B.A. Batygin, V.A. Gromov
Material and Technical Supply	
Chief	A.G. Kornelyuk
Deputy Chief	---
Packing Industry	
Chief	---
Protection and Reproduction of Fish Reserves and Regulation of Fishing	
Chief	I.V. Nikonorov
Deputy Chiefs	V.K. Kiselev, Y.N. Ognev
Stocking and Fishing in Interior Reservoirs	
Chief	---
Deputy Chiefs	S.F. Shabalin, V.M. Yevdokimov

Cadres and Educational Institutions Administration	
Chief	---
Design and Capital Construction Administration	
Chief	A.S. Gaydukov
Deputy Chiefs	I.G. Baychikovskiy, O.A. Kalantarov
Economic Planning Administration	
Chief	L.F. Ukrayntsev
Deputy Chief	M.N. Shchebalkin
Finance Administration	
Chief	---
Deputy Chief	A.S. Pedyash
Fish Products and New Equipment Administration	
Chief	---
Fishing *Kolkhoz* Affairs Administration	
Chief	Z.M. Eventov
Deputy Chief	V.I. Zavtsev
Foreign Relations Administration	
Chief	---
First Deputy Chief	---
Deputy Chiefs	B.G. Kutskov, B.A. L'vov, A.D. Sumakov, A.A. Volkov

Protocol Dept. Chief	V.K. Vasil'yev
Housekeeping Administration	
Chief	B.G. Zenichev
Deputy Chiefs	V.M. Shekarov, P.A. Tikhachev
Industrial Fishing Administration	
Chief	V.A. Golovkin
Deputy Chiefs	S.B. Gyul'badamov, V.M. Mayevskiy
Labor Organization, Wages, and Worker Cadres Administration	
Chief	A.V. Katayev
Deputy Chief	Y.A. Romanov
Regulation of Fishing in the Moscow Basin Administration	
Chief	---
Science, Technology, and Automatic Control Systems Administration	
Chief	---
Shipbuilding Administration	
Chief	N.I. Chulin
Deputy Chief	---
Use of Fleets and Ports Administration	
Chief	Y. Burtsev

Deputy Chiefs	I.P. Maksimov, V.P. Volokhov
Whaling Fleet Administration	
Chief	---
Work with Sailors Traveling Abroad	
Chief	M.P. Kukushkin
Arbitration Department	
Chief	---
Communications and Location Technology Department	
Chief	A.A. Shchepanovskiy
Legal Department	
Chief	---
Safety Division	
Chief	A.S. Tsapko
Scientific and Technical Council	
Chairman	Y.G. Pavlov
Main Information Center	
Chief	---
Fish Products Quality Chief Inspectorate	
Chief Inspector	A.N. Gorokhov
Main State Safety Inspectorate for Commercial Fishing Fleet, Navigation and Import Inspection	
Chief Inspector	I.M. Semenov

Central Accounting Office	
Chief	A.A. Stogov
Deputy Chief	B.F. Makarenko
Sovyrbflot	
Chairman	G.V. Zhigalov
Deputy Chairman	A.K. Turchin
Fish Processing and Fish Product Sales Industrial Association	
Chief	---
Deputy Chief	I. Anisimov
Fishing Supplies System Industrial Association	
Chief	---
Fleet Repairs Industrial Association	
Chief	---
Fish Sales Industrial Association	
Chief	---

Correspondence with Bruce Connuck, Office of Soviet Union Affairs, Department of State, Washington D.C., dated June 15, 1988.

Appendix D

World Fishing Fleets by Tonnage 1980-1987
Vessels over 100 GRT

Nation	1980	1981	1982	1983	1984	1985	1986	1987
USSR	6,509	6,470	6,500	6,607	6,328	6,483	6,847	6,830
Japan	1,107	1,102	1,092	1,096	1,090	1,080	1,080	1,052
USA	525	551	594	643	627	638	643	640
Spain	558	532	518	507	492	488	482	503
ROK	360	378	384	397	400	410	418	448
Poland	354	344	330	320	308	302	304	304
Norway	240	230	232	224	225	211	223	244
Roman.	183	190	197	210	224	220	220	226
Canada	151	154	159	161	158	153	153	155
Others	2,682	2,767	2,814	2,866	2,954	3,000	3,004	3,095
Total	12,669	12,718	12,820	13,031	12,806	12,985	13,374	13,497

ROK stand for the Republic of Korea.
Lloyd's Registry of Shipping Statistical Tables, London, 1965-1989.

Appendix E

Background Information on the Soviet Merchant Marine and Navy

As part of its ocean strategy, the Merchant Marine has been designed in conjunction with the fishing fleet to aid the Navy. The Merchant Marine fleet can be used to service naval vessels or even be transformed into military ships during a time of war. Merchant tankers fuel naval ships underway at sea and in anchorages. In addition, many merchant ships have military sea-lift capability which enable them to transfer material ashore, even in areas of limited port facilities, and transfer cargo offshore. Some merchant fleet vessels have the speed, endurance, deck space, hatch size, and crane capability to be used as naval auxiliaries. Also, a number of merchant vessels are used to carry arms and military equipment to Third World countries under their sphere of influence.

The Merchant Marine has grown rapidly over the past 30 years from a variety of coastal shipping vessels to a worldwide fleet of ocean-going vessels. Unlike the Western shipping industry, which is made up of hundreds of individually-owned companies, the Soviet Merchant Marine is a state organized industry. Centralized control of the merchant fleet, fishing fleet, military and research vessels means that the USSR knows every ship position on a daily basis and can divert vessels quickly as needed.

Much of the Soviet shipbuilding industry was destroyed during World War 11. As a result, the USSR was dependent on the West to transport their manufactured products. In the 1950's less than 30% of the Soviet foreign trade was carried by its own vessels. The Soviet merchant fleet had less than two million DWT which was a very small percentage of the world's total of 115 million DWT. This lack of ability to carry its own cargo was a severe drain on the Soviet foreign currency reserves. As a result, the USSR began a fleet expansion program in the 1960's which emphasized quantity rather than quality. The majority of these ships were built in COMECON countries like Poland and East Germany, and to a lesser extent Yugoslavia. During the next 25 years, the merchant fleet grew at an average of 600,000 DWT tons per year, increasing to 750,000 in the

early 1980's, [352] making the Soviet fleet one of the largest in the world.

Traditionally, the Soviet fleet was not as well balanced as Western shipping enterprises.[353] The Soviet Union did not have oil supertankers, bulk vessels, container ships and specialty ships in the mid-1970's as so much money had been spent on the Navy that the civilian infrastructure suffered. In addition, its Third World customers did not have the port facilities to handle modern vessels, so a more modern fleet was not needed. Finally, with a centrally controlled economy, there was no motivation to develop a competitive fleet.

In 1979, the Soviet Merchant Marine had over 13% of general cargo ships worldwide, but only 4.5% of dry bulk vessels and 3.5% of oil tankers. More recently, the USSR built Ro/Ro ships with partial container capacity. These vessels can transport supplies to developing countries and with a stern ramp feature, can even offload in less modern ports, as well as support naval amphibious forces.

The objective of the Merchant Marine has been to earn hard currency and to displace Western shipping. The sector has been subsidized by the government, and can, therefore, successfully undercut other shipping ventures. The USSR is trying to push Western countries out of the freight market with its below market rates. The USSR has increased its percentage of trade by undercutting prices. Recently, the Soviet Merchant Marine has dominated most of the major third world shipping routes.[354]

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[352]The USSR was motivated to increase its shipping capabilities by two major events in the 1960's. The first was when the Soviet Union broke off relations with the PRC. Those goods which had been transported via rail to the PRC, now were shipped to developing countries. Also, after the Cuban Missile Crisis, the USSR became responsible for all trade in and out of Cuba.

[353]Despite the Western trend towards containerization, the USSR still maintains a large number of conventional bulk vessels equipped with their own cargo-handling equipment. In addition, the USSR maintains more than 50 liners which can earn foreign currency as cruise ships especially now that the West has cut back on its liner fleets.

[354]After the invasion of Afghanistan in 1979, The US ordered a grain embargo and stopped 17 million tons from leaving the US for the USSR. The 1981 declaration of martial law in Poland resulted in an even sharper cut back on US-USSR trade. The US suspended talks on a new agreement which would have allowed Soviet access to US ports. The USSR was forced to shift its ships in liner cross-trading to routes other than the US. Though this meant more container ships were available to go to the Third World, the USSR had a difficult time employing all its vessels and ended up selling three bulk carriers to the West. As a result, in the early 1980's Soviet shipping was underutilized, its major role being political. The FYP from 1981-1985 did not plan to expand the Merchant Marine. Instead the FYP called for a renewal and

Peter the Great built the first Navy to defeat the Swedes in 1714. By the early 1900's, the Russian Navy was number four in the world, until its total defeat at the Battle of Tsushima in 1905. The Navy played no significant role in World War 1, although the disaffected sailors moored off St. Petersburg in 1917 helped set off the October Revolution.

The Navy had a very large surface fleet by the time of the German invasion in 1941, but these ships played no significant role in the war. Such maritime activities that did take place were primarily in the estuaries and coastal inlets of the Black Sea under the command of Rear Admiral Gorshkov who fortunately for him happened to be working with the political adviser to the area, Leonid Brezhnev.[355]

Due to fears of an American and British invasion after the end of World War 11, Stalin ordered the construction of a massive naval fleet of cruisers, destroyers and submarines in July 1945. This buildup came to a halt under Khrushchev who decided that Stalin's concept of a "balanced fleet" was useless and consequently cut back the amount of tonnage built by 60% in order to use the shipyards to construct cargo and fishing vessels.[356]

After a series of international debacles for the Soviets, starting with the Cuban Missile Crisis, the Soviet Navy, under Admiral Gorshkov, became very powerful. By the 1970's, Gorshkov published a series of 11 articles on the necessity of increasing the size and power of the Navy in order for the USSR to become a world power.

In 1989, the USSR spent over 15% of its total budget or 77,300 million rubles on defense. According to Soviet sources, the US spends 27% of its budget on defense.[357] The USSR spent 6.9 billion rubles on

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replacement of obsolete vessels, and included new orders for dry bulk carriers and unit load ships, and the construction of its first nuclear powered LASH to be employed in the Arctic.

[355]Andrew Cockburn, The Threat: Inside the Soviet Military Machine, Vintage Books, NY, pp. 389-399.

[356]*Ibid.*, Ironically, Admiral Gorshkov maneuvered around the cutbacks so that within six years, Khrushchev attended the launch of a 6,000 ton cruiser although Khrushchev still maintained this was "a floating coffin."

[357]Admiral V. Chernavin, Commander of the Navy, "The Pacific in Focus: Restraint Must Be Mutual," *Krasnaya Zvezda*, December 7, 1988, in Reprints from the Soviet Press, V. 48, N. 2, January 30, 1989, pp. 34-35. The Soviets say that the cost of weapons in the US is several times greater than the cost of similar weapons in the USSR. The American *Ticonderoga* class nuclear powered guided missile cruiser is approximately nine times the cost of a similar Soviet ship. Like-wise the cost of the SH-60 helicopter is 11 times the Soviet equivalent.

its space program. According to the Soviets, the US spent US$ 29.6 billion, including US$ 22.8 billion for defense related space development which is six times the Soviet budget figure.[358]

As part of its current defense budget, the USSR is testing or producing nine different classes of submarines. Since 1983, the USSR has deployed four new classes which the US calls the *Mike*, the *Sierra*, the *Yankee*, and the *Akula*. The newest of these subs is only 1% as noisy as those built by the Soviets 10 years ago. According to Pentagon estimates, the United States has 12 diesel attack subs and the Soviets have 130; 36 American ballistic subs to 77 Soviet subs, and 85 nuclear attack subs to 70 Soviet subs of a similar class.[359] The USSR has the world's largest sub, the strategic missile carrying *Typhoon*. The USSR continues to build super-quiet diesel subs which run on batteries while submerged which increases the Western defense budgets as they must develop techniques to track the more sophisticated submarines.[360]

As part of his overall economic strategy, Gorbachev plans to cut defense in the new decade. From 1989 to 1991, expenditures on arms and hardware are being reduced almost 20%, along with a 500,000 troop reduction. The combined cuts in the military will save 30,000 million rubles. By 1995, the USSR wants to reduce armaments further to cut down the defense portion of the national budget to 2%.[361]

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[358]*Ibid.*

[359]Conversation with a US naval officer in Charleston, SC who preferred anonymity. In reference to the very quiet *Akula* sub, he said it should have been called "the Walker" referring to the espionage ring led by retired submariner John Walker.

[360]*Ibid.* The officer said that they used to laugh about the Soviet *Alpha* class submarine which was so noisy that a sonar station in Bermuda heard it when the sub went full speed in the Arctic. He also told me a joke. "How do you tell a Soviet submariner?--He glows in the dark."

[361]Mikhail Moiseyev, Chief of the General Staff of the Soviet Armed Forces, "Soviet Defense Budget," *Pravda*, June 11, 1989, in Reprints from the Soviet Press, V. 49, N. 4, August 31, 1989, pp. 57-61.

Appendix F

Soviet Fishing Fleet Comparison Before and After the Introduction of the EEZ

In GRT

Type of Ship	1977 No.of Vessels	1977 GRT	1984 No. of Vessels	1984 GRT	% Change in GRT
Small coastal ship/catcher boats 100-499 GRT	2,153	453.200	1,142	203.234	-55%
Freezer tr. 500-999 GRT	908	579.240	798	521.752	-10%
Factory tr. 1,000-1,999 GRT	140	229.707	189	289.719	+26%
Factory tr. 2,000-3,999 GRT	734	2.537.353	889	2.372.298	-7%
Super factory tr. over 4,000 GRT	29	143.891	40	184.392	+29%

"Tr." stands for trawler.

Lloyd's Registry of Shipping Statistical Tables, London, 1965-1989.

Appendix G

Soviet Fishing Catch by Region 1965-1987
(1,000 metric tons)

Year	L.A.	N.A.	Africa	Antar.	Ocean.	Inland	Coastal	Total
1965	17	1,363	479	-	-	826	2,414	5,099
1966	111	1,386	516	-	-	789	2,547	5,349
1967	702	1,192	443	-	-	816	2,625	5,778
1968	249	1,228	813	-	-	781	3,011	6,082
1969	123	1,626	998	-	-	747	3,006	6,500
1970	441	1,559	1,082	-	-	853	3,317	7,252
1971	39	1,678	1,468	-	13	935	3,203	7,336
1972	126	2019	1,698	-	54	870	2,990	7,757
1973	192	1,737	1,635	-	75	850	4,130	8,619
1974	61	1,855	1,728	-	90	773	4,738	9,245
1975	108	1,740	1,564	-	45	944	5,475	9,876
1976	34	1,349	2,179	58	78	770	5,665	10,133
1977	28	618	2,254	363	129	771	5,188	9,351
1978	54	457	2,291	298	73	730	5,011	8,914
1979	549	336	1,389	439	72	806	5,517	9,108
1980	580	168	1,804	527	74	747	5,577	9,477
1981	624	117	1,714	516	67	807	5,702	9,546
1982	627	113	1,869	602	77	804	5,866	9,958
1983	683	88	1,598	376	100	856	6,116	9,817
1984	663	152	1,402	197	73	882	7,226	10,595
1985	697	144	1,438	216	76	906	7,046	10,523
1986	791	157	1,576	431	165	927	7,214	11,261
1987	1,013	164	1,780	384	167	988	6,664	11,160

"Ocean." stands for Oceania.
These figures have been rounded.
Food and Agriculture Organization, United Nations, Yearbook of Fisheries Statistics, FAO, Rome, 1965-1989.

Appendix H

Soviet Fishing Catch by Region in Percentage 1965-1987

Year	L.A.	N.A.	Africa	Antar.	Ocean.	Inland	Coastal
1965	0.3	26.7	9.4	-	-	16.2	47.3
1966	2.0	25.9	9.7	-	-	14.6	47.6
1967	12.1	20.6	7.7	-	-	14.1	45.4
1968	4.1	20.2	13.4	-	-	12.8	49.5
1969	1.9	25.0	15.4	-	-	11.5	46.2
1970	6.1	21.5	14.9	-	-	11.8	45.7
1971	0.5	22.9	20.0	-	0.2	12.7	43.7
1972	1.6	26.0	21.9	-	0.7	11.2	38.5
1973	2.2	20.2	19.0	-	0.9	9.9	47.9
1974	0.7	20.1	18.7	-	1.0	8.5	51.3
1975	1.1	17.6	15.8	-	0.5	9.6	55.4
1976	0.3	13.3	21.5	0.6	0.8	7.6	55.9
1977	0.3	6.6	24.1	3.9	1.4	8.2	55.9
1978	0.6	5.1	25.7	3.3	0.8	8.2	56.2
1979	6.0	3.7	15.2	4.8	0.8	8.8	60.5
1980	6.1	1.8	19.0	5.6	0.8	7.9	58.8
1981	6.5	1.2	18.0	5.4	0.7	8.5	59.7
1982	6.3	1.1	18.8	6.0	0.8	8.1	58.9
1983	7.0	0.9	16.3	3.8	1.0	8.7	62.3
1984	6.3	1.4	13.2	1.9	0.7	8.3	68.2
1985	6.6	1.4	13.7	0.2	0.7	8.6	67.0
1986	7.0	1.4	14.0	3.8	1.5	8.2	64.0
1987	9.1	1.5	15.9	3.4	1.5	8.9	59.7

Totals may not add up to 100% because of rounding.
Food and Agriculture Organization, United Nations, Yearbook of Fisheries Statistics, FAO, Rome, 1965-1989

Appendix I

Joint Venture Draft Law Dated March 5, 1990

Law of the USSR on Joint Ventures Created on the Territory of the USSR with the Participation of Soviet and Legal Entities and Citizens

GENERAL PROVISIONS

This Law establishes special applications of Soviet law regarding the creation and activity on Soviet territory of enterprises with the participation of Soviet legal entities and foreign legal entities and citizens (hereinafter referred to as "joint ventures").

Joint ventures are created for the purpose of more complete satisfaction of the country's demand for products (work, services), raw material and manufactured goods, the introduction into the Soviet economy of advanced foreign technology, management experience, additional material and financial resources, the development of the country's export base and production of imported goods.

Article 2

Joint ventures may perform any type of activity which fulfills the goals foreseen in the foundation documents, with the exception of activity that is against the laws of the Soviet Union and Soviet republics.

Certain types of activity of the joint venture can be undertaken only on the basis of permission (licenses) issued according to procedure established by Soviet law. The permission may stipulate the conditions for engaging in such types of activity.

Article 3

Joint ventures are legal entities according to Soviet law.

Joint ventures organize their activity on the basis of cost-accounting, self-financing, and hard currency self-sufficiency.

Article 4

Joint ventures may create on a voluntary basis sectoral, intersectoral, regional and interregional associations of joint ventures.

Joint ventures may participate in concerns, consortia, intersectoral state associations, various associations and other large scale organizational structures created on a voluntary basis by Soviet enterprises, associations and organizations.

The provisions of this law apply to the activity of associations of joint ventures, assigned the rights of legal entities, and also associations and other forms of organizations engaged in commercial activity voluntarily created by Soviet enterprises and organizations with the participation of joint ventures.

Article 5

Joint ventures are governed in their activity by the Law of the USSR "On stock organizations, other economic associations and companies," and other legal acts of the USSR and Soviet republics, regulating the activity of Soviet state enterprises with the exceptions stipulated in this Law.

Specifics of the creation and activity of joint ventures, involved in banking activities are set forth in the USSR Law "On Banks and Banking Activities," the USSR Law "On the USSR *Gosbank*," and also other acts of union republics concerning banking activities.

Article 6

If after ratification of the present Law, laws are adopted which worsen the conditions for joint venture activities, the joint ventures which were established prior to the existence of such laws will be subject to the laws in effect at the moment of registration of the joint venture.

The provisions of this article do not apply to legislative acts of the USSR, which set taxation.

Article 7

The present Law applies to the establishment of international economic joint ventures with participation of Soviet and foreign organizations, companies and administrative bodies on the territory of the USSR.

Article 8

If international agreements of the USSR set new rules, which are different from those of the Legislature of the USSR, joint ventures will follow the rules of the international agreements.

11. REGISTRATION OF JOINT VENTURES

Article 9

Joint ventures are established on the basis of agreement between participating parties with permission of the local authorities of the joint venture location. The procedure for obtaining permission for such joint ventures is set by the Soviet republic. Such permission will be given to one of the Soviet participants in the joint venture.

Joint ventures are created as joint stock companies, companies with limited liability, and as other types of economic companies and organizations.

In cases stipulated by the law of the USSR and Soviet republics, joint ventures are established with the permission of the indicated state organs.

Article 10

Participants of joint ventures with the USSR can be legal entities:

-state enterprises, associations and organizations;

-public organizations, unions, and their enterprises and organizations;

-manufacturing cooperatives, their unions, their enterprises and organizations;

-leasing enterprises

-concerns, consortia, interbranch state associations, associations, and also other organizations, which are not part of the system of state organs, public organizations;

-other organizations in cases specified by laws of the USSR and Soviet republics;

Joint ventures can establish a new joint venture with participation of a Soviet enterprise, organization or association on condition of making a contribution of not less than US$ 100,000 into the charter fund. This rule is applied when a joint venture becomes a member of a Soviet association of enterprises, associations, unions and organizations, concerns, consortiums of intrabranch state associations.

Foreign participants of joint ventures can be state authorities, also companies and other enterprises, which are legal entities in the country of their origin and also physical persons, having in accordance with the law of the country of which they are citizens, or in which they maintain permanent residence, the right to undertake such activity.

Article 11

The decisions on the creation of joint ventures are made by state organs, state enterprises, associations and organizations with the agreement of the superior organ.

Public organizations themselves make decisions on the creation of joint ventures, and enterprises of public organizations make decisions according to procedure established by the central organs of these organizations.

Production cooperatives make decisions on the creation of joint ventures with the agreement of the Council of Ministers of the Soviet republic without regional division, the Council of Ministers of the autonomous republics, the Kray Ispolkom, oblispolkom, Mosgorispolkom, Lengorispolkom depending on the location of the cooperative, or with the agreement of the ministry or department to whose enterprise the cooperative is attached.

Joint ventures and other organizations, not included in the system of state organs or public organizations, make decisions on the creation of joint ventures on their own.

Article 12

It is established, that the state organs and central organs of public organization during the decision of the question on the creation of joint ventures, consider the following obligatory requirements:

-attainment of the joint venture of economic self sufficiency, including hard currency, in accordance with the presented feasibility study;
-conformance of the feasibility study of the joint venture to environmental protection standards.

A response to a proposal by the Soviet participant for the creation of a joint venture will be given by the corresponding organ or central organ of the public organization no less than 30 days from the moment of the receipt of the proposal in written form.

The agreement and charter of the joint venture must also contain the following:

1. purpose of activity
2. participants
3. name, location of headquarters and affiliates
4. time frame for establishment
5. size of the charter fund, respective shares of the partners, size of contributions by participants, schedule for contributions to the fund, procedure for distributing the joint venture profit and losses
6. the rights of participants
7. management and oversight organs, subjects of their conduct and procedures for their activity
8. appointment of the organ to which the joint venture accounts are sent and which will be required to facilitate access by the business community
9. procedures for accounting
10. basic procedures for the liquidation of the enterprise

Article 14

Joint ventures are considered created and acquire the rights of a legal entity from the day of their registration.

Registration of the remainder of joint ventures is effected by financial organs according to procedure determined by the law of union republics.

In the course of registration, the documents presented are the agreement on the creation of the joint venture and its charter, the technical feasibility study, verification that the foreign participants are legal entities, verification from the foreign participant's bank that the foreign participant is solvent, (conscientiousness as a bank client) The receipt from a Soviet bank, confirming the transfer by the participants of a sum of money required for the formation of the charter fund (not less than 25% of the amount established in the Charter), other necessary documents depending on the type of activity of the created joint venture, including the production feasibility study, design documentation for construction, and so forth.

The registration of joint ventures and their affiliates requires a payment in the amount established by the law of the USSR and the union republics.

The creation of joint ventures is announced in the press.

111. PROPERTY AND FUNDS OF THE JOINT VENTURE

Article 15

The ownership of foreign participants of a joint venture is not limited by percentage (the relative proportion will depend on the size of the joint venture, on the branch of the national economy, and other factors), but by the absolute size in the sum equivalent to US$ 100,000. In the case of the creation of an affiliate, the minimum investment of the joint venture must be US$ 50,000.

Article 16

The joint venture has its own property, necessary for conduct of the activity as stipulated in the foundation documents.

The property rights of the joint venture are defended in accordance with Soviet law. Penalties on the property of the joint venture may be imposed only by the decision of organs, which in accordance with the law of the USSR may examine disputes involving joint ventures.

The provisions of part two of this article are applied also to the property of the foreign partners of the joint venture, received by them as a result of joint venture profit distribution and also tied to the reduction by them of the share of the joint venture, or through withdrawal from the joint venture or its liquidation, and also assets imported into the Soviet Union as a partial contribution to the charter fund.

Article 17

The property of the joint venture can be used to answer for all of its obligations, including loans. In this capacity, rights contributed by the participants into the charter fund, including the use of land, water, and other natural resources, buildings, structures, equipment and also other property rights can also be used.

Special permission must be received from Soviet or republic organs in order to transfer rights to minerals or continental shelf resources.

The property set forth may be sold by creditors according to agreed upon prices, including at auctions by Soviet organizations, and in cases covered by law of the USSR and its republics, also by foreign legal entities and citizens.

Article 18

The property of the joint ventures must be insured by insurance organizations of the USSR. Risk insurance for the joint ventures is obtained from insurance organizations according to the agreement of the partners.

Article 19

The joint venture creates a reserve fund and other funds necessary for its operation and the social development of its work force.

The reserve fund is created in an amount established in the foundation documents, but not less than 25% of the charter fund. The formation of the reserve fund is effected by means of an annual contribution in Soviet or foreign currency until the size of the fund established in the foundation documents is reached. The amount of the annual contribution to the reserve fund is covered in the foundation documents, but cannot be less than 5% of the balance sheet profit.

The list of other funds, the procedures for their formation and expenditure are determined by the joint ventures themselves.

Article 20

The formula for amortization deductions is stipulated in paragraph 33 of the Council of Ministers of the USSR decree of January 13, 1987, namely, "amortization deductions are conducted in accordance with current instructions for Soviet state organizations if another method is not stipulated in the foundation documents."

1V. DOMESTIC AND FOREIGN ECONOMIC ACTIVITY OF JOINT VENTURES

Article 21

The joint ventures develop and confirm programs for their economic activity themselves.

Joint ventures have the right to undertake state orders on a voluntary basis through concluding contracts with the corresponding state organ, including on a competitive basis.

The state organ in this case, is responsible for supplying to the joint venture limited centrally allocated material--technical resources, construction and contract work, necessary for the fulfillment of the contract and to guarantee to the joint venture a market for the products, work and services, covered in the state order. The joint venture is obliged to fulfill the contract for delivery of the products, completion of work or services covered in the state order.

Article 22

Delivery to the joint venture of centrally allocated products of Soviet production is effected through the Soviet participant and its superior organ in full accordance with the demands of the joint venture. For other products, their delivery to the joint venture is effected on the basis of agreement with the producers, trade organizations and material-technical supply, and also through the retail network of state and cooperative trade.

The type of currency in the accounts and pricing is determined by the joint venture in agreement with suppliers of the products.

The purchase of material resources essential to the joint venture is effected on the foreign market by the joint venture itself, or through the foreign participants, or through Soviet foreign trade organizations using hard currency resources of the joint venture.

The sale of products (works, services) of the joint venture is effected by the joint venture itself, not including cases covered by Article 21 of this Law.

Article 23

Joint ventures can only export products (works, services) they produce themselves and import products (works, services) only for their own needs. They may also effect operations with raw material received in accordance with regulations established for Soviet enterprises.

Export and import operations of the joint venture are effected on its won or through foreign economic organizations or through the marketing network of the foreign participants in the joint venture.

Article 24

All hard currency expenditures of the joint venture, including payment of profit and other sums, accruing to the foreign participants and specialists must be made in hard currency from the joint venture's account.

Article 25

Property, imported into the USSR during the period covering the charter documents as a contribution to the charter fund is not subject to customs payments.

Article 26

The foreign participants in the joint venture are guaranteed transfer abroad of sums in hard currency which accrue to them as a result of the distribution of profits of the joint venture and also in connection with reduction of their share in the joint venture, either by withdrawal from it or liquidation of the joint venture.

The profit of the foreign participant in rubles cannot be transferred and can be expended only on the territory of the USSR through its ruble account or through reinvestment.

V. PROTECTION OF INVENTIONS AND INDUSTRIAL MODELS

Article 27

Exclusive rights to inventions and industrial models, created by the workers of the joint venture in connection with the fulfillment of the work assignments, belong to the joint venture on the basis of a contract concluded with the worker at the time of hiring.

According to the agreement, the worker relinquishes to the joint venture rights to receive patents for inventions and industrial models, created by the worker in connection with his work assignments, and the joint venture is obliged to pay the worker a reward.

Patents are issued in the name of the joint venture with an indication in the patent of the last name, first name, and middle name of the inventor.

Joint ventures themselves make decisions on the patenting in foreign countries of their inventions and industrial models according to procedure established in the foundation documents.

V1. CREDIT AND ACCOUNTS

Article 28

Joint ventures may keep their money in any bank on the territory of the USSR, and foreign currency in those banks on the territory of the USSR empowered by the law of the USSR and the republics, and in foreign banks with the permission of *Vneshekonombank.*

The procedure for conducting accounts, percentage deductions and effect of payments is established in agreement with the bank which conducts the corresponding account.

The exchange rate difference in hard currency of the joint venture and also for its operations in hard currency are transferred to the account of its profits and losses.

Article 29

Joint ventures may use credit on commercial terms set forth:

-in rubles by any bank on the territory of the USSR

-in hard currency by any bank on the territory of the USSR thus empowered by the USSR and republic law, or foreign banks and firms.

Article 30

The writing off of monetary assets from the accounts of the joint ventures is conducted only through their instructions or by decision of organs which in accordance with the law of the USSR may examine disputes involving joint ventures.

Article 31

Banks granting credits (including foreign banks) have the right to verify the use of the credit issued to the joint venture and its collateral.

V1. TAX OBLIGATIONS OF THE JOINT VENTURE, TAX REDUCTIONS, VERIFICATION of PENALTY TAXES

Article 32

Tax obligations of the joint venture, its participants, tax reductions, and also verification of the correctness of tax penalties and penalties on arrears are regulated by legal acts of the USSR on taxation issues.

V111. JOINT VENTURE PERSONNEL

Article 33

The personnel of joint ventures are primarily Soviet citizens. The administration of the joint venture is obliged to conclude agreements with the trade union associations created at the enterprise. The content of these agreements, including provisions for development of the work force, are determined by Soviet law and the foundation documents.

Article 34

The labor relations of persons working at the joint venture are regulated by laws of the USSR and the union republics on labor, in accordance with this Law.

Joint ventures themselves determine procedure for hiring and firing workers, forms, systems and amounts of wage payments, the schedule for the work day, shifts, make decisions on conduct of calculating working time, set the procedure for holidays and vacation time.

Joint ventures themselves determine the length of the yearly paid vacation, but its length cannot be less than that established for similar categories of workers at state organizations.

Article 35

Social security (with the exception of the pension funds for foreign workers of the joint venture) and social insurance for workers at the joint venture are regulated by norms established in Soviet law.

The State Committee of the USSR for Labor and Social Issues of the VTsSIS has the right to determine special applications of Soviet law on social insurance for foreign workers of the joint venture.

The joint venture contributes to the state budget of the USSR an amount for state social insurance of Soviet and foreign citizens and contributions to the pension funds of Soviet citizens according to the norms established for Soviet organizations. Payments into pension funds for the foreign workers are made in the corresponding funds of the country of which they are permanent residents in the hard currency of that country.

Article 36

Wages for the foreign workers of the joint venture are taxed at the rate according to procedures established in Soviet laws on taxation of the population.

The non-expended portion of these wages in hard currency may be transferred abroad.

1X. OVERSIGHT OF JOINT VENTURE ACTIVITIES

Article 37

Financial and other state organs within the limits of their competence verify the adherence of the joint venture to laws, including payment of taxes and other contributions to the budget, conduct of accounting procedure, foreign economic activity, protection of labor, technical safety, environmental protection, and protection of historical monuments and culture.

Joint ventures annually present to local financial organizations the joint venture's annual accounting balance in the form of the balance sheet, account of profit and losses, addendum to the balance, and explanatory notes. The procedure for presentation of these documents is determined by the USSR Ministry of Finance.

Article 38

Joint ventures can hire auditing organizations to verify their financial and commercial activity.

Article 39

Joint ventures are not obliged to present any sort of accounts or information to foreign state organs. If necessary, foreign participants inform their country's organs about the result of their participation in the activity of the joint venture.

X. LIQUIDATION OF THE JOINT VENTURE

Article 40

Joint ventures may be liquidated in cases:

-of divergence of the joint venture from the goals outlined in the foundation documents

-of inability to maintain hard currency self sufficiency

-of inability to form the charter fund within the time frame and in the amount, permitting the beginning of operation of the joint venture within a year of the date of its registration by the Ministry of Finance of the USSR

-of other reasons covered by legislation of the USSR and the union republics.

Article 41

The foreign participant in the case of withdrawal from the joint venture or its liquidation receives the right to receive its contribution back in the form of money or goods for the remainder cost at the moment of withdrawal or liquidation after all obligations have been met to Soviet participants and third parties.

Article 42

Liquidation of joint ventures is regulated by the financial organs with which the joint venture was registered. For liquidation of the joint venture a liquidation commission is appointed by the USSR Ministry of Finance. Notice of liquidation is published in the press.

X1. DISPUTE ARBITRATION

Article 43

Disputes between joint ventures and organizations with the Soviet state, cooperative, and other public organizations, internal disputes, and also disputes between participants of the joint venture on issues connected with its activity are taken to the Soviet courts, or by agreement of all sides, taken to a court of arbitration, or in cases stipulated in Soviet law, taken to organs of state arbitrage.

The copy of this draft law was given to me by Emily Silliman, Consultant on Soviet Trade and Law, Mountain View, CA, in June 1990.

Appendix J

1985 Fisheries Agreement Between the USSR and the Republic of Kiribati

AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF KIRIBATI (HEREINAFTER REFERRED TO AS "THE GOVERNMENT") AND *SOVRYBFLOT* OF THE UNION OF SOVIET SOCIALIST REPUBLICS (HEREINAFTER REFERRED TO AS "THE COMPANY") CONCERNING PURSE SEINE AND LONGLINE FISHING WITHIN THE EXCLUSIVE ECONOMIC ZONE OF KIRIBATI

WHEREAS the Republic of Kiribati has sovereign rights for the purpose of exploring and exploiting, conserving, and managing the natural resources of the exclusive economic zone,

AND WHEREAS, the company has requested the Government to permit fishing vessels to fish within the fishery limits of the Republic of Kiribati established in accordance with the Ordinance,

NOW THEREFORE, it is agreed by and between the Government and the company as follows:

ARTICLE 1.-DEFINITIONS

1.1 "Fishery limits" means the fishery limits established in accordance with the Ordinance

1.2 "Fishing" shall have the same meaning as defined in the Ordinance.

1.3 A "Fishing trip" means a period which shall extend for the duration of a permit granted pursuant to this agreement.

1.4 "Licensed vessel" means a fishing vessel in respect of which a permit has been issued pursuant to the Ordinance.

1.5 "Ordinance" means the Fisheries Ordinance Cap. 33 1979, as amended from time to time, and any regulations made thereunder, of the Republic of Kiribati.

1.6 "Permit" means a permit issued pursuant to the Ordinance and includes a license.

1.7 "This Agreement" means this Agreement and its schedules.

ARTICLE 2.-TERMS OF THE AGREEMENT AND PERMITS

2.1 This Agreement shall commence on the 15th day of October 1985 and shall continue in force for one year up to and inclusive of the 14th of October 1986.

2.2 A permit issued pursuant to this Agreement shall permit a licensed vessel to fish in the fishery limits for one year or until the expiry of this Agreement whichever is the shorter period PROVIDED HOWEVER that a permit issued within 21 days of the date of commencement of this Agreement shall continue in force for one year.

2.3 Notwithstanding the terms of this Agreement, as defined in Section 2.1 above, this Agreement may be extended for a period as may be mutually agreed.

ARTICLE 3.-TYPE AND METHOD OF FISHING

Vessels licensed pursuant to this Agreement may be used for fishing only by the purse seine and longline methods for tuna and tuna-like fishes, billfishes, and species caught incidental thereto.

ARTICLE 4.-APPLICATIONS FOR REGISTRATION AND PERMITS

4.1 Only vessels registered on the Regional Register of Foreign Fishing Vessels maintained by the South Pacific Forum Fisheries Agency in Honiara, Solomon Islands, and being in good standing on the Regional Register, shall be eligible to apply for a permit.

4.2 Application for registration on the Regional Register shall be made to the Government in the form set out in Schedule 1.

4.3 The Government shall issue permits to the Company for the vessels as listed in Schedule 2.

4.4 An application for a permit pursuant to this Agreement shall be made to the Government in accordance with the requirements of the Ordinance..in writing, by cable or telex, and shall indicate:

i. the registration number of the vessel on the Regional Register,
ii. the name of the vessel,
iii. the date on which it is proposed that the permit shall commence
iv. the estimated duration of the vessel's operation within the fishery limits

4.5 Any permit issued to a vessel pursuant to this Agreement shall be subject to the terms and conditions as set out in Schedule 3.

4.6 The Government shall upon receipt of an application for permits and the appropriate fee, process the application, and provided that:

a. the application is in accordance with the terms of this Agreement
b. the vessel for which permits are sought have not previously breached this Agreement or the terms and conditions of any permit,

The Government will issue permits and will advise the company of the permit numbers of the vessels by cable or telex.

4.7 Where the Company wishes to withdraw a licensed vessel which has been permitted to fish within the fishery limits it may apply to the Government for a permit to be issued to another fishing vessel of a similar type and size to the vessel proposed to be withdrawn, and the Government shall give consideration to the application PROVIDED HOWEVER that the total number and composition of licensed vessels fishing within the fishery limits is not increased or changed from that set out in Schedule 2 hereof.

4.8

4.8.1 The Government understands that the Company will use supply vessels to re-provision licensed fishing vessels and that such vessels will not actively engage in catching, harvesting, or taking fish within the fishery limits.

4.8.2 The Company will apply for permits to be issued to such support vessels pursuant to the terms of this Agreement and the Ordinance, such permits to be in addition to those required for the vessels referred to in Schedule 2, and no fee shall be charged by the Government for the issuing of such permits.

ARTICLE 5.-FEES

5.1 The fee to be paid to the Government upon application for the issue of permits pursuant to this Agreement shall be Australian $ 2,400,000.

5.2 The fee referred to in paragraph 5.1 shall be paid in Australian dollars to the No. 1 Account of the Government with the National Bank of Kiribati, Bairiki, Tarawa, and shall be paid free and clear of any deduction or withholding of any kind whatsoever by deposit with or telegraphic transfer to Westpac Banking Corporation's Sydney, Australia Branch to the credit of the National Bank of Kiribati's Account and shall advise the National Bank of Kiribati by telex or cable of the said payment.

5.3 The fee shall be paid in three advance installments according to the following schedule:

-upon application for permits the sum of A$ 672,000 shall be paid into the account as set out in paragraph 5.2
-upon the expiration of four (4) months after the signing of the Agreement, the sum of A$ 816,000 shall be paid into the account as set out in paragraph 5.2
-upon the expiration of eight (8) months after the signing of the Agreement, the sum of A$ 912,000 shall be paid into the account as set out in paragraph 5.2.

ARTICLE 6.-NOTIFICATION

The Government shall notify the Company of any action initiated by it pursuant to this Agreement or pursuant to the laws of Kiribati, against any vessel to which a permit has been issued pursuant to this Agreement.

ARTICLE 7.-MISCELLANEOUS

7.1 The Company shall ensure that all vessels to which permits are issued pursuant to this Agreement, shall comply with the provisions of this Agreement, the permit and the Ordinance.

7.2 Any differences or dispute which may arise as to the interpretation or implementation of this Agreement (other than a breach referred to in paragraph 7.3 hereof) shall be resolved by consultation and discussion between the parties.

7.3 Subject to the provisions of the United Nations Convention on the Law of the Sea any breach of the terms of this Agreement, a permit or the Ordinance by the vessel to which a permit has been granted, or by the Master or any other officer of any such vessel shall be dealt with in accordance with the laws of Kiribati.

7.4 Notwithstanding the provisions of this Agreement the Government may license further vessels pursuant to this Agreement at such a fee as may be agreed between the parties.

Signed this 18th day of August, 1985, Manila

Minister of Natural Resource Development, on behalf of the Government

Acting Trade Representative of the Republic of the Philippines, on behalf of the Company

Copy of this agreement was sent to me by Anote Tong in August 1988.

Appendix K

Edict of the Presidium of the Supreme Soviet on February 28, 1984 Excerpts Pertaining to Fisheries

"Edict of the Presidium of the USSR Supreme Soviet, 28 February 1984," *On the USSR Economic Zone* (1984) 9 *Vedomosti Verkhovnogo Soveta SSSR* 137, confirmed by law of the USSR Supreme Soviet, 11 April 1984, *On the Confirmation of the Edict of the Presidium of the USSR Supreme Soviet "On the USSR Economic Zone"*, (1984) 16 *Vedomosti Verkhovnogo Soveta SSSR* 234.

.....

3. The USSR exercises rights resulting from its primary interest in stocks of anadromous species which originate in its rivers, and for the primary responsibility for them.

Soviet competent organs ensure the conservation of stocks of such anadromous species by means of the adoption of appropriate measures and the establishment of rules regulating their commercial catch, including the establishment of total allowable catches, both within its economic zone as well as outside its boundaries.

The USSR ensures the enforcement of its measures and rules, with respect to stocks of anadromous species, beyond its economic zone on the basis of treaties between the USSR and other interested states.

The commercial catch by other states of anadromous species which originate in rivers of the USSR, beyond the outer limit of the economic zone of the USSR, is conducted on the basis of treaties between the USSR and other interested states concerning the terms and conditions of such commercial catch giving due regard to the conservation requirements of such species and the needs of the USSR with respect to them.

The terms and conditions of the utilization and safeguarding of stocks of anadromous species which originate in rivers of the USSR, are determined by the Council of Ministers of the USSR.

4. In the economic zone of the USSR all states-whether coastal or land-locked-enjoy, subject to the observance of the provisions of the present Edict, other relevant legislative acts of the USSR, as well as generally accepted principles of international law, the freedom of navigation and overflight, the laying of submarine cables and pipelines and other internationally lawful uses of the sea related to these freedoms.

5. The USSR ensures the optimum utilization of the fishery and other living resources in its economic zone by the realization of appropriate measures for their conservation and management, taking into account the most reliable scientific evidence and in appropriate cases in co-operation with competent international organizations.

For that purpose, in particular, Soviet competent organs determine yearly a maximum allowable catch of every species of fish and other living resources, the part of the catch, the access to which may be given to foreign states, and they also take measures to ensure the rational conduct of

commercial fishing, conservation and reproduction of living resources and their protection, including the inspection, detention and arrest of ships.

The terms and conditions of utilization and protection of fishery and other living resources of the economic zone of the USSR are determined by the Council of Ministers of the USSR.

6. The commercial catching of fish and other living resources, as well as research, exploratory and other operations connected with such commercial fishing (hereinafter cited as commercial fishing) can be conducted by foreign juridical and natural persons in the economic zone of the USSR only on the basis of international treaties or other agreements between the USSR and respective foreign states.

Foreign juridical and natural persons, conducting commercial fishing in the economic zone of the USSR in accordance with part one of the present Article, must observe the measures concerning the conservation of living resources and other provisions and conditions established by the present Edict, other relevant legislative acts of the USSR and rules, adopted on their basis.

.....

"Decree of the Presidium of the USSR Supreme Soviet, 17 February 1986," *On the Introduction of Modifications and Completions to the Decree of the Presidium of the USSR Supreme Soviet On the Manner of Implementation of Articles 19 and 21 of the Edict of the Presidium of the Supreme Soviet of the USSR On the Economic Zone of the USSR'*(1986) 9 *Vedomosti Verkhovnogo Soveta SSSR* 152.

In order to conserve the stocks of anadromous species of fish which originate in rivers of the USSR, beyond the outer limit of the economic zone of the USSR, the Presidium of the USSR Supreme Soviet decrees:

To introduce in the Decree of the Presidium of the Supreme Soviet of the USSR of 12 November 1984 *On the Manner of Implementation of Articles 19 and 21 of the Edict of the Presidium of the Supreme Soviet of the USSR On the Economic Zone of the USSR'"* the following modifications and completions:

1. Redraft Part one of Article 1, in the following wording:

"(1) The measures of responsibility, established by Articles 19 and 21 of the Edict of the Presidium of the USSR Supreme Soviet, 28 February 1984, *"On the USSR Economic Zone of the USSR,"*,are applied to juridical and natural persons who have committed violations provided for by Article 19 of that Edict, within the limits of the economic zone of the USSR, and for the illegal commercial catch of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR."

2. In Part one of Article 2:

redraft paragraph two, in the following wording:

"illegal extraction in large quantities of natural resources in the economic zone of the USSR and anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR";

paragraph seven, insert after the words "economic zone of the USSR" the words "and the safeguarding of stocks of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR."

3. In Article 3:

part one, after the words "Ministry of Amelioration and Hydrology of the USSR" insert the words "and for illegal catch of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR- by the fishery conservation agencies of the Ministry of Fisheries of the USSR";

part three, after the words "economic zone of the USSR" insert the words "as well as stocks of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR".

4. Articles 5 and 8, after the words "economic zone of the USSR" insert the words "and the safeguarding of stocks of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR".

5. Part one of Article 7, after the words "economic zone of the USSR" insert the words "as well as stocks of anadromous species of fish which originate in rivers of the USSR, beyond the economic zone of the USSR".

"Decree of the Council of Ministers of the USSR 17 February 1986," *On the Confirmation of the Statute on the Utilization of Living Resources of the Economic Zone of the USSR, as well as on the Safeguarding and Utilization of Stocks of Anadromous Species Which Originate in the Rivers of the USSR, Beyond the Economic Zone of the USSR,* (1986) *10 Sobranie Postanovlenii Pravitel'stva SSSR* 66.

With reference to the Edict of the Presidium of the Supreme Soviet of the USSR of 28 February 1984, "On the Economic Zone of the USSR" the Council of Ministers of the USSR decrees:

To confirm the annexed "Statute on the Utilization of Living Resources of the Economic Zone of the USSR," as well as "On the Safeguarding and Utilization of Stocks of Anadromous Species Which Originate in the Rivers of the USSR, Beyond the Economic Zone of the USSR,"

Statute on the Utilization of Living Resources of the Economic Zone of the USSR, as well as on the Safeguarding and Utilization of Stocks of Anadromous Species Which Originate in the Rivers of the USSR, Beyond the Economic Zone of the USSR,

1. The utilization of living resources of the economic zone of the USSR, as well as on the safeguarding and utilization of stocks of anadromous species which originate in the rivers of the USSR, beyond the outer limit of the economic zone of the USSR, is conducted in accordance with the Edict of the Presidium of the Supreme Soviet of the USSR of 28 February 1984, "On the Economic Zone of the USSR" the present Statute, other legislative acts of the USSR and international treaties of the USSR.

2. The USSR ensures the optimum utilization of the fishery and other living resources of its economic zone by the realization of the following measures for the conservation of those resources and their management:

(a) the establishment of rules and norms concerning the conservation of those resources and their management;

(b) the establishment of prohibitions and restrictions in the utilization of living resources;

(c) the safeguarding of living resources from violations of utilizations patterns;

(d) the protection of the living environment, the conditions of reproduction and migratory routes of the living resources;

(e) the prevention of the destruction of the living resources through the realization of productive processes and shipping;

(f) the safeguarding of rare species and species of living resources threatened with disappearance;

(g) the creation in the established manner of reserves, protected zones and the allocation of other specially protected territories;

(h) the assistance to sea animals and other living resources in case of a threat of their destruction by catastrophe or by other reasons;

(i) the organization of scientific research, aimed at the motivation of measures concerning the conservation of living resources;

(j) propaganda by means of mass information on the conservation of living resources.

In order to guarantee the optimum utilization of fishery and other living resources of the economic zone of the USSR, still other measures can be taken concerning the conservation of those resources and their management.

Measures concerning the conservation of the living resources and their management are carried out, taking into account the best scientific evidence and, in appropriate cases, in cooperation with competent international organizations.

3. The elaboration and realization in accordance with the prevailing legislation of measures concerning the conservation of living resources in the economic zone of the USSR and their management, as well as measures concerning the exploration of these resources is entrusted to the Ministry of Fisheries of the USSR, which for that purpose:

(a) secures the realization of measures concerning the reproduction of the living resources in the economic zone of the USSR;

(b) determines yearly a maximum allowable catch of every species of fish and other living resources of the economic zone of the USSR, as well as the part of that catch, the access to which may, on the basis of international treaties or other agreements between the USSR and respective foreign states, be given to foreign states; determines in the established manner, quotas of catch of every species of fish and other living resources for a foreign state, as well as establishes, if necessary, by agreement with the interested ministries and departments of the USSR areas in which foreign juridical and natural persons may conduct commercial fishing;

(c) elaborates and confirms rules of conduct of commercial fishing in the economic zone of the USSR. Under commercial fishing in the present Statute is meant the commercial catching of fish and other living resources, as well as research, exploratory and other operations connected with such commercial fishing;

(d) establishes the terms and conditions of the granting of permission to Soviet fishery exploitation organizations and also on the basis of the respective international treaties or other agreements between the USSR and the respective foreign states, to foreign juridical and natural persons, to conduct commercial fishing in the economic zone of the USSR including the terms of introducing demands to obtain permissions and necessary

information in connection with it, the terms recalling the permission or suspension of their effect;

(e) grants permission to Soviet fishery exploitation organizations, as well as foreign juridical and natural persons for the conduct of commercial fishing in the economic zone of the USSR in accordance with the established quotas;

(f) makes proposals in the established manner and conducts negotiations concerning the conclusion of international treaties of the USSR on matters of conservation and utilization of the living resources of the economic zone of the USSR.

4. Commercial fishing in the economic zone of the USSR can only be carried out by foreign juridical and natural persons on the basis of international treaties or other agreements between the USSR and respective foreign states.

Foreign juridical and natural persons, conducting commercial fishing in the economic zone of the USSR, must comply with the requirements concerning the conservation of the living resources and other requirements, provided for by the "Edict of the Presidium of the Supreme Soviet of the USSR of 28 February 1984","On the Economic Zone of the USSR," the present Statute, other legislative acts of the USSR and rules, adopted on their basis.

The terms and conditions of the conduct of commercial fishing in the economic zone of the USSR by foreign juridical and natural persons are determined, giving due regard to the significance of the living resources of the given area to the economic and other state interests of the USSR, as well as other circumstances related to that commercial catch, provided for by international treaties of the USSR.

5. The USSR exercises rights, resulting from its primary interest in stocks of anadromous species which originate in its rivers and from the primary responsibility for them.

The conservation of stocks of such anadromous species is ensured by creating appropriate conditions for their reproduction and living, while taking other corresponding measures and establishing rules concerning the regulation of their commercial catch, including the establishment of total allowable catches, both within the economic zone of the USSR as well as outside its boundaries.

The USSR ensures the enforcement of the measures and rules with respect to stocks of anadromous species which originate in its rivers, beyond its economic zone on the basis of treaties between the USSR and other interested states.

6. The elaboration and realization of measures concerning the conservation and rational use of stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR is entrusted to the Ministry of Fisheries of the USSR, which for that purpose:

(a) secures the realization of measures concerning the reproduction of stocks of anadromous species which originate in rivers of the USSR;

(b) establishes rules for the regulation of the commercial catch of such anadromous species beyond the economic zone of the USSR;

(c) makes proposals in the established manner and conducts negotiations concerning the conclusion of international treaties of the USSR on matters of conservation and utilization of the stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR.

In order to guarantee the optimum utilization of the stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR still other measures can be taken concerning the conservation of those resources and their management.

7. The commercial catch by interested states of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR is carried out on the basis of treaties between the USSR and those states.

The terms and conditions of the conduct of such commercial catch, including the requirements concerning the guarantee of strict implementation by foreign vessels of the measures and rules concerning stocks of anadromous species which originate in rivers of the USSR, are determined in an international treaty between the USSR and respective foreign state, giving due regard, in particular, to the conservation requirements of those stocks, the needs of the USSR in them, as well as the degree of participation of a foreign state in measures related to their reproduction and conservation, particularly by expenditures for that purpose.

8. The safeguarding of stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR is entrusted to fishery conservation agencies of the Ministry of Fisheries of the USSR and carried out by them by means of :

(a) the patrol of areas in which run the migratory routes and which contain the feeding grounds of those species of fish;

(b) the observance of foreign ships which conduct commercial catch of such species of fish, the inscription in a special diary of the executed operations by them, the location, name, number on board, nationality of the mentioned ships and the establishment of the nature of commercial catch they are carrying out;

(c) the control of the enforcement of measures and rules concerning the regulation of the commercial catch of those species of fish by foreign ships, which carry out the mentioned commercial catch, on the basis of an international treaty of the USSR;

(d) the institution of legal procedures against foreign ships which conduct illegal commercial catch of such species of fish, to terminate the commercial catch, as well as the taking of other measures concerning its prevention in the established manner.

Ships of fishery conservation agencies, when carrying out the safeguarding of stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR have to bear a special pennant and the officials of fishery conservation agencies are obliged to carry the revised official credentials.

9. For violations related to the commercial catch of anadromous species which originate in rivers of the USSR, occurring outside the economic zone of the USSR, the guilty foreign juridical and natural persons bear responsibility in accordance with Articles 19 and 21 of the Edict of the Presidium of the Supreme Soviet of the USSR of 28 February 1984 "On the Economic Zone of the USSR," and the Decree of the Presidium of the Supreme Soviet of the USSR 12 November 1984 "On the Manner of Implementation of Articles 19 and 21 of the Edict of the Presidium of the Supreme Soviet 'On the Economic Zone of the

USSR,'" unless a treaty between the USSR and the respective foreign country provides otherwise.

10. State inspectors of fishery conservation agencies of the Ministry of Fisheries of the USSR, which carry out the protection of stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR, impose fines on the violators, provided for by the first part of Article 19 of the "Edict of the Presidium of the Supreme Soviet of the USSR of 28 February 1984,""On the Economic Zone of the USSR."

If necessary, fishery conservation agencies transmit materials about the committed violations for the prosecution of the guilty persons in accordance with prevailing legislation.

The seizure from the offenders of equipment, gear instruments and other objects and documents, as well as everything extracted illegally, is carried out in a manner determined by the "Statute on the Safeguarding of the Economic Zone of the USSR."

11. In case of the continuation of the conduct of illegal commercial catch by foreign ships of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR, notwithstanding the requirement of the termination of the commercial catch, the fishery conservation agencies of the Ministry of Fisheries of the USSR take measures to arrest the offenders and convey them to one of the open ports of the USSR fro prosecution.

Soviet competent organs can also in case of illegal commercial catch of anadromous species by foreign juridical or natural persons take other necessary measures concerning the conservation of stocks of anadromous species.

"Decree of the Council of Ministers of the USSR of 10 March 1986," *On the Manner of Calculation of Fines Imposed for Damage Caused to Living Resources of the Economic Zone of the USSR as well as to Stocks of Anadromous Species of Fish Which Originate in Rivers of the USSR, Beyond the Economic Zone of the USSR*, (1986) 12 *Sobranie Postanovlenii Pravitel'stva SSSR* 75.

The Council of Ministers of the USSR decrees:

1. To confirm the annexed Schedule for the calculation of fines imposed for the damage caused to living resources of the economic zone of the USSR, as well as to stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR as a result of their illegal harvesting by citizens of the USSR and by foreign juridical and natural persons.

In remaining cases (except in cases of causing damage to living resources in the economic zone of the USSR by pollution of the marine environment in that zone) the fines imposed for damage are calculated according to the method determined by the Ministry of Fisheries of the USSR and the Ministry of Amelioration and Hydrology of the USSR in collaboration with the Ministry of Finances of the USSR.

2. Fines imposed for damage to living resources of the economic zone of the USSR are calculated by officials of fishery conservation agencies of the Ministry of Fisheries of the USSR and agencies for regulating water use and conservation of the Ministry of Amelioration and Hydrology of the USSR.

Fines imposed for damage to stocks of anadromous species which originate in rivers of the USSR, beyond the economic zone of the USSR are

calculated by officials of fishery conservation agencies of the Ministry of Fisheries of the USSR.

3. To repeal the decree of the Council of Ministers of the USSR of 8 August 1977 No. 723 "On the Manner of Calculation of Fines Imposed for Damage Caused to Fish and Other Living Resources in the Marine Areas Adjacent to the Coast of the USSR" (SP USSR, 1977, No. 23, 143).

A copy of this translation by Erik Franckx, Free University of Brussels, Belgium was sent to me by Professor Donald Cameron Watt in June 1987.

Appendix L

Common Pool Problem

Fisheries management is a "common pool" problem. The optimum reproduction of stocks depends on hydrological and biological conditions as well as the intensity of fishing. An important feature of the fishing industry is that fish reproduce continuously. Biologically, hundreds of thousands and even millions of eggs are emitted. Of these only a small number reach maturity. Another problem is that fish are highly mobil and often do not remain within man-made territorial boundaries.

The two traditional approaches to establish controls on the total fishing effort are licensing the number of vessels in a fishery and introducing a tax or user fee both of which will discourage others from participating in the fishery. The disadvantage of licensing is the difficulty of controlling the catching power and establishing a standard unit of effort. This method also discourages the introduction of new technology. Taxes are the most economically advantageous though they usually are not politically feasible.

Under a quota system, each fishing vessel is allocated a percent of the management organization's MSY. The fisherman is allowed to lease part or all of the allocation. A governing body establishes limits on the catch size and acceptable gear use, and should be the only agency allowed to sell licenses. In this way, the government can withhold use of the quotas as necessary to manage the fishery levels through the purchase of quotas at market value from willing fishermen rather than enforcing a reduction in catch from all fishermen. If a quota is exceeded, a fine is imposed based on the overproduction. If a fishermen is unable to fulfill his quota because of the excesses of others, he receives payments equal to the amount between his catch and quota. Foreign fishermen are allowed to harvest the amount of the quota not caught by the domestic vessels. Quotas are a more efficient method to obtain the MSY than licenses or taxes, but quotas do not optimize the economic yield as taxes would since the same amount of fish would in theory be taken at a lower cost.

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II. Secondary Sources
A. Books
B. Articles
Author Cited
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III. Reference Publications
A. Newspapers
B. Periodicals

IV. Contacts

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V. Databases

ABI/Inform Database
PAIS (Public Affairs Information Service Database)
PAIS International
PROMPT
Soviet Science and Technology Database
Trade and Industry Database