Developement of a national isheries adjustment scheme:the australian approach

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I. Introduction

1.1 The Australian rational Fisheries Adjustment Scheme Project

The purpose of the Australian National Fisheries Adjustment Scheme (ANFAS) project is to develop a policy framework under which structural adjustment can occur in a coherent and coordinated manner, and to develop operational guidelines on how to develop structural adjustment schemes. The ANFAS will not establish a mandatory scheme, nor will it supercede existing managerial jurisdictions. The ANFAS is instead an attempt to understand and assess the existing adjustment efforts, in Australia and around the world, and to use the lessons learned from these programs to assist fishery managers in their efforts to manage Australia's fisheries on a sustainable basis.

The ANFAS project consists of two major elements. The first component involves the analysis and dissection of existing structural adjustment programs using case studies of programs in Australia and around the world. This is being done to devolve the essential components and outcomes of these programs. Although there are reports of various aspects of fishery restructuring and structural adjustment schemes, the issues involved and the lessons learned from such experiences are not assembled and compiled into a single document. The second component of the project involves the translation of the lessons learned from the case studies into a policy framework and practical operational guidelines for specific structural adjustment programs, which could be implemented either at the State or the national level.

1-2 Background and Motivation for the ANFAS

Most State and Commonwealth fisheries in Australia have been managed under limited access regimes since the late 1960s.1[1] In spite of this, fishing effort has continued to increase. To deal with increasing fishing pressure on stocks, in many instances fisheries managers have implemented a variety of traditional input control measures to reduce effort. This has not always been successful in providing a long-term solution for insuring the biological and economic sustainability of Australia's fishery resources.

From the practical standpoint of safeguarding all of Australia's fishery resources, there is a genuine need for a comprehensive and coordinated approach to

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1[1] In Australia, State jurisdiction extends offshore from 0 to 3 nautical miles (nm); Commonwealth jurisdiction extends from 3 to 200 nm.

adjustment schemes throughout Australia2[2]. Without coordination, structural adjustment in one fishery can ignore the very real issue of the displacement or transfer of problems from one fishery to another. There are examples of fisheries in Australia, which are completely under the jurisdiction of a single state or territory, and therefore, restructuring or adjustment can readily fall under the auspices of that jurisdiction. However, there are also instances of fisheries that span multiple

State jurisdictions and/or extend into Commonwealth waters, in such cases, adjustment within one jurisdiction could result in the mere transfer or displacement of effort to other jurisdictions.

The result is that there is a need for adjustment schemes, and these schemes need to address issues of sustainability from four broad perspectives:

- Ecologically, at the species and the ecosystem level;
- Economically, at the aggregate level;
- Communally, at the people level: and
- Institutionally, at the financial, administrative, and organizational levels.

In addition to the use of input controls (such as limiting access and consolidating licenses), the Australian Commonwealth has tried to meet this need for adjustment programs in three ways: I) by using directed funds in the form of grants and government-backed loans for adjustment schemes in specific fisheries, 2) by using ITQs in specific fisheries, and 3) by trying to have fisheries adjustment schemes included under the existing national adjustment scheme framework for the rural (agricultural) sector, the Rural Adjustment Scheme (RAS).

Directed efforts at the national level began in the early 1980s when $9 million was set aside for fisheries adjustment programs. One of the first uses of that money was for a $3 million voluntary buyback program in the Northern Prawn Fishery. Subsequently, in 1987, the remaining $6 million was put into the National Fisheries Adjustment Program (NFAP).

The NFAP was established to provide a system of guaranteed loans and outright grants for sectors of the fishing industry where excess capacity was creating biological and/or economic problems. The NFAP requires that the fishing industry participates in and to help fund adjustment programs.3[3] After two years, the NFAP was redirected to apply only to Commonwealth fisheries and to those cross-jurisdictional fisheries under agreement for joint jurisdictional management.4[4]

2[2] Arguably, the need for a comprehensive and coordinated approach extends to the global level To minimize the international transfer of effort-related problems.

3[3] Department of Primary Industries and Energy (DPIE), 1989 New Directions for Commonwealth fisheries Management in the 1990s.

4[4] Australia has a unique mechanism for dealing with the inter-jurisdictional aspect of its fisheries. Under the Fisheries Amendment Act 1980 , the Offshore Constitutional Settlement (OCS) allows for four categories of management of fisheries spanning State and Commonwealth waters: joint authority and management, where the Commonwealth and a State or States form a single legal entity with legal management

The December 1989 government policy stated New Directions for Commonwealth fisheries Management in the 1990s called for the establishment of a task force composed of industry and government representatives, "to examine and make recommendations on structural adjustment".5[5] However, as with the NFAP adjustment was envisioned as occurring on "a fishery by fishery basis" and not within a comprehensive and inclusive national framework.

Efforts to include marine fisheries under the existing agricultural Rural Adjustment Scheme framework have not been successful. Wild fisheries have been explicitly excluded from the RAS because of their common property nature. To date, only land-based aquaculture has been included as eligible for assistance.6[6] Moreover, the repeated efforts in 1992 and 1994 to get the RAS to include fisheries managed under individual transferable quota (ITQs) programs have not succeeded.7[7] Thus, the impediments to getting fisheries included under the RAS mean that there is still a lack of a national conceptual and policy framework for fishery-related adjustment programs.

At the State level, a variety of tools has been used to try to adjust fisheries. These include the use of license consolidation schemes and individual quota schemes. Additionally, the States have or are developing adjustment-related legislation. This is being done in three ways:

• in the context of updated or new fisheries Acts:

• as fishery-specific adjustment legislation; and

• as State-wide generic adjustment program legislation. Yet, as at the national level, there is no specific structural adjustment framework for coordinating State efforts.

Because of the increasing need to deal with the issues of overcapitalization and sustainability on a comprehensive basis, in 1994 the national Standing Committee on Fisheries and Aquaculture (SCFA) initiated their request for the development of a national approach to fisheries restructuring and adjustment.8[8] The jointly funded Commonwealth-State 1996 ANFAS initiative and, ultimately, the production of ***Policy Considerations/or an Australian National Fisheries Adjustment Scheme*** are the results of that request. The recommendations coming out of the ANFAS project will then be considered by the SCFA. In turn, the SCFA may provide recommendations

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powers; State management of the entire fishery, Commonwealth management of the entire fishery: or status quo management, where responsibility is split between the State(s) and the Commonwealth at the 3 mile boundary. (DPIE, op. cit., p. 12-14)

4[5] DPIE, op. cit,, xi.

6[6] The RAS was established in 1977 to assist the agricultural sector adjust to overseas market conditions. The emphasis of the scheme is on farm productivity, profitability, and sustainability. Assistance was made available for farm buildup and enhancement as well as for debt reconstruction and exit programs.

7[7] Synapse Consulting, July 1992. Report of the Review of the Rural Adjustment Scheme. Report prepared for the Commonwealth Department of Primary Industries and Energy. The report recommended that ITQ fisheries be included fully within the RAS. A further recommendation to the Rural Adjustment Scheme Advisory Council (RASAC) included that only exit provisions (or re-establishment support) be extended to all wild fisheries. These recommendations were not accepted.

8[8] The SCFA serves as the national forum for State and Commonwealth fisheries issues. It is composed of representatives from each of the State and Commonwealth fisheries agencies as well as representatives from national fisheries research institutes. The SCFA reports the Ministerial Council composed of Ministers from the Commonwealth governments.

regarding a national structural adjustment scheme to the Ministerial Council.

1.3 Overview

The elements of the final ANFAS document will include:

- **Methodology**
  - description of a standard format for analyzing, evaluating, and
  - comparing restructuring and adjustment programs;
- **Adjustment Program Analysis**
  - identification of categories of the settings in which adjustment schemes have been implemented;
  - identification of factors and/or focusing events motivating adjustment;
  - identification of the various responses which have been implemented;
  - identification of the intended and unanticipated outcomes of adjustment schemes;
  - analysis of the available information about restructuring and adjustment schemes;
- **Recommendations for Structural Adjustment**
  - recommendations for the States and Commonwealth on how to design a national, comprehensive, and inclusive adjustment framework;
  - administrative recommendations on how to implement such a framework;
  - legislative recommendations regarding implementation of adjustment schemes;
  - financial recommendations regarding structural adjustment programs;
- **Applied Design Considerations**
  - criteria for designing fisheries adjustment schemes;
  - criteria for choosing fisheries for adjustment schemes;
  - design considerations for restructuring or adjustment schemes;
  - identification of the biological, economic, sociological, legal, and political parameters constraining adjustment schemes;
  - mechanisms to use in adjustment schemes within a particular context;

- mechanisms for assessing and evaluating the achieved and the ancillary effects of adjustment schemes;

- **Appendices**

  - representative Australian and international fisheries case studies analyzed to reveal scheme components;
  - details of Australian adjustment schemes in other sectors;
  - summaries of Australian fisheries legislation and their impact on adjustment efforts.

The remainder of this paper provides an overview of some of the observations that have been gleaned thus far during the first phase of the ANFAS project.

1.4 Methodology

The documentation of national and international restructuring and structural adjustment projects is not widely published. Documentation is frequently passed along as oral history with only a small portion of the discussion ever making it past the Grey literature stage. Fortunately, this situation is changing as the number of such projects increases, and the literature is slowly but surely growing.

To the extent possible, the ANFAS is drawing on published literature such as journal articles. Other sources include such sources as conference proceedings, textbooks, and UN and OECD documents. When these sources did not provide the full extent of programmatic details, we have tried to turn to the actual regulations defining structural adjustment or restructuring programs. Although these are typically presented without a policy context, they provide explicit program design information. Finally, additional information is being procured from so-called Grey literature and from personal communications.

Every attempt is being made to document sources as explicitly as possible to facilitate the subsequent flow of information. This is particularly relevant because the case studies have been prepared by dissecting the literature for those elements expressly pertinent to the goal and objectives of the ANFAS project. We are well aware that there may be programmatic details of interest to readers, which are not included.

To systematically assess and compare schemes and programs, each case study is dissected from seven perspectives;

- the fishery;
- the objectives and goals of the program;
- the adjustment vehicle and the technique used;
- the time frame of the program;
- the costs (quantitative and qualitative, public and private);
- the benefits (quantitative and qualitative, public and private), and
- the expected, anticipated, and unanticipated outcomes of the program. These case characteristics are briefly described in the sections below.

1.4.1 The Fishery

The term "fishery" is used in its broadest sense. Broad characterization of fisheries in this way reveals not only the species or harvesting groups in question, but also the structural determinants of both the harvesting and processing sectors. Thus, in addition to biological and environmental factors, "fishery"' encompasses the economic, social, policy, and political determinants which influence adjustment.

1.4.2 Program Objectives and Goals

In additional to revealing the purpose of an adjustment program, explicit definition of program objectives and goals provides the first step in evaluating the outcomes of an adjustment scheme.

1.4.3 Adjustment Vehicle and Technique

Adjustment schemes are most typically associated with the use of public funds, but the availability of public funds is not a requisite for restructuring or adjustment. Definition of the vehicle and technique used in a scheme helps to differentiate between the use of funds (public or private), input controls, and output controls.

1.4.4 Benefits and Costs

The identification of quantitative and qualitative benefits and costs of adjustment schemes provides information about net "worth" of programs to both the public and private sectors. This also helps to identify what monitoring, measurement, and evaluation tools have been used in a program.

1.4.5 Outcome

The outcome of an adjustment scheme provides summary information about its relative successes. This includes feedback, about the appropriateness of the choice of the fishery, of the vehicle and techniques used, of the time frame, and of the goals and objectives of the scheme.

1.5 Definitions

With all the attention on structural adjustment schemes, it seems rational to preface any descriptions with a discussion of structural adjustment and the difference between it and the generic concept of adjustment. Adjustment of a particular fishery's industry structure is a dynamic process. It involves the number of harvesters, the number of processors, the nature of the fishery's regulations, the industry's efficiency, the industry's impacts on the fishery's ecological sustainability, and even the provision of conditions for entry and exit. Structural adjustment, on the other hand, is a strategy which is externally developed by the state (in its stewardship role) and/or the industry (in its exploitative or in its stewardship role).9[9]

Structural adjustment is defined as:

The concentrated or focussed change in management procedures to achieve accelerated change in expected outcomes. Structural adjustment may or may not involve the use of funds (public or private): it may be triggered either indirectly or explicitly: and, if may or may not necessarily involve downsizing.

9[9] Adjustment schemes can serve a number of purposes. Some of the more common goals of such schemes include (the restoration of) biological sustainability and economic efficiency.

This definition highlights the difference between structural adjustment and adjustment. Structural adjustment tends to connote more dramatic or explicit change. Adjustment may connote a more subtle regulatory approach. This is not to say that these activities are mutually exclusive. Both may give rise to the same end-result in a fishery.

2 PROGRAM ANALYSIS

2.1 Adjustment Environment

The case studies reveal a spectrum of settings within which adjustment schemes occur. Additionally, there are fishery-specific variations within each possible setting. Despite the diversity, the environments in which schemes have been implemented are being described in terms of five perspectives:

- Jurisdictional: Are the adjustment and the effects of adjustment contained in a fishery within or across state, national, international boundaries or within transnational boundaries?
- Fiscal: Is adjustment government facilitated, government funded. Jointly funded by industry and government, fully industry funded, or industry facilitated?
- Political: Is there political involvement at the state, national, international, or transnational level?
- Biological: Is adjustment directed at a stock, a stock throughout its range, a species, or at a region? 1011[10]12
- Economic: Are the fishery and the participants, respectively, in stable, declining, or critical condition?

Because or the diversity of settings and the diversity within each category of setting, they are discussed individually below. It would be misleading to consider, however, that the case studies reveal a single setting. More typically, adjustment schemes are occurring in the context of a combination of the categories of settings.

2.1.1 The Jurisdictional Environment

The case studies illustrate that there are two primary jurisdictional settings for restructuring and adjustment schemes, at the state level and at the national level. Examples of Australian fisheries, in which schemes were implemented within State or Territory boundaries, include the Australian Northern Territory Barramundi Fishery and the South Australia Rock Lobster Fishery.

Examples of Australian schemes at the national level include the Southern Bluefin Tuna (SBT) fishery and the Northern Prawn Fishery. There are two primary reasons that these schemes occurred here; either the stock is under national jurisdiction or

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10[10] This differentiation reflects the fact that a stock can be a grouping offish usually based on genetic relationship, geographic distribution, and movement patterns as well as a managed unit of fish.

10[11] Department of Fisheries (DFO) Canada News Release, 19 April 1994.

there is a significant enough fishery under national jurisdiction to warrant its adjustment (regardless of what may be happening outside the national jurisdiction).

The adjustment efforts of the European Union (EU) under the Common Fisheries Policy (CFP) reflect a transnational framework for adjustment, although participating countries design their respective schemes. The relative absence of inter-jurisdictional adjustment schemes appears to reflect, in part, the difficulties of coordinating multiple administrative frameworks.

2. 1. 2 The Fiscal Environment

Four basic categories of fiscal support for adjustment programs have emerged: government facilitated (such as through bonds), government financed (direct grants), fully industry financed, and government financing with industry repayment.

The availability of monies has a dramatic influence on program design. In some countries (e.g. Australia, United States, Netherlands), fund-limited schemes have been limited to the removal of a particular gear type or access permit. In other cases (e.g., Canada), schemes have encompassed a spectrum of retraining, relocation, and assistance programs in addition to the immediate fishery-related provisions.

Many of the adjustment schemes have not been one-time events in a fishery. Instead, they have either involved a lengthy process (such as in the Canadian Atlantic Ground-fish fishery) or repeated short-term events (such as in the Australian Northern Territory Barramundi fishery) further contributing to the issue of the availability of funds. For instance, the U.S. Fishing Capacity Reduction Demonstration Program (FCRDP) was a $2 million pilot project to look at design issues for buyback in the federally managed Atlantic Northeast Region. On the other hand, the Atlantic Canada Ground-fish adjustment scheme involved approximately $CA 205 million between 1974 and 1978 and received a budget of $CA 1.9 billion in 1994 13[11].

The debate over the use of public funds focuses on if and where their use may be warranted and several arguments are emerging. One argument that has emerged is that the community can reason that, if the objective of adjustment is to reduce effort so that long run economic returns to participants increase, the industry should bear such adjustment costs. On the other hand, there is the argument that there may be cases where the community may contribute to adjustment schemes on the grounds of broader social objectives. If an adjustment process leaves a particular region socially or economically disadvantaged, the argument is that it may be appropriate to use public funds for retraining or relocation of displaced industry participants in order to reduce the long term regional costs (Moreover, the use of public fans may help resolve cross-jurisdictional issues.). Additionally, there is the argument that a community may wish to support an adjustment scheme if the resultant industry will be able to generate economic or social benefit to that community.

2.1.3 The Political Environment

Discerning the politics of adjustment programs is at best very difficult, but the political implications of reallocating effort, capital, and the potential for changing people's

13[12] The Agreement for the implementation for the Provisions of the United Nations Convention on the Law of the Sea of 10th December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995).

livelihoods cannot be ignored. The case studies revealed three levels of political involvement: extensive political direction (e.g. Atlantic Canada and New Zealand), moderate political involvement, and minimal political involvement (e.g. the U.S., South Atlantic, Wreckfish fishery).

Strong and directed political involvement is most discernible when there is accessibility to the politicians on the part of the involved user groups. For instance, the Australian Northern Territory Barramundi fishery buyouts reflect significant recreational constituencies. Similarly, given the number of fishery dependent communities throughout the Atlantic Canada region, the strong engagement of political interests is not surprising.

Transnational and international fisheries issues are receiving increasing attention as global levels of healthy stocks decline and as allocation issues become increasingly contentious. In the EU, the Common Fisheries Policy (CFP) is playing an increasing role in directly and indirectly shaping EU fisheries. Transnational agreements such as the one which emerged from the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, and the FAO Code of Conduct for Responsible Fisheries, are also shaping the options that fisheries managers will have for structural adjustment.14[12] 15[13]

2.1.4 The biological Environement

The biological settings in which adjustment schemes have occurred can be categorized into programs designed on the basis of species-stocks, stocks throughout their range, as well as on the basis of a localized fishery. This last category appears to be more of a gear-dependent characterization of a restructuring or adjustment scheme. However, certain gear types are typically used to prosecute a particular biologically defined fishery, hence this categorization. One example of this is the Netherlands' IVQ program for its cutter fleet.

The biological setting for adjustment can influence the choice of adjustment mechanism by virtue of the status of the fishery. Stocks, which are in trouble, are more likely to benefit from the relatively immediate effects of a buyout, whereas stocks, which are in relatively good condition, may better tolerate slower adjustment mechanisms such as license consolidation schemes.

2.1.5 The Economic Environment

One of the more pervasive characteristics of restructuring and adjustment schemes is that they have predominantly occurred in fisheries experiencing difficult economic conditions. The respective regional financial disasters in the Canadian and the US Atlantic Ground-fish fisheries are prime examples, and the scheme designs in both reflect efforts to deal with the distributional effects of adjustment. Harsh economic realities of the mid-1980s helped drive implementation of wide-scale adjustment programs in New Zealand. Similarly, current economic conditions in the Australian Victorian Southern Rock Lobster fishery are creating pressure for adjustment.

14[13] These and other international instruments are discussed in International Environmental Instruments: ***Their*** *Effect on the Fishing Industry.* The 1995 final report of the Fisheries Research and Development Corporation (C) by Martin tsamenyi and Alistair Mellgorm.
15[14] The application of taxes and fees for purposes of management cost recovery is a separate concept and is one that is not new.

Encouragingly, not all schemes have been set in the context of economic hardship or gross overcapitalization. The change from input controls to individual transferable quotas (ITQs) in the U.S. South Atlantic Wreck-fish fishery occurred before the fishery was grossly overcapitalized and while the stock was still healthy.

The fiscal motive of revenue generation (also referred to as "community return") has not yet been a strong or direct motivating factor for adjustment schemes.16[14] This is beginning to change. The current U.S. Senate version of the Sustainable Fisheries Act allows for the imposition of a tax of up to four percent on federal ITQ programs, as a revenue generation mechanism.

2.2 Focusing Events

The motivating factors and focussing events found in the case studies appear to be just as diverse as the settings in which the programs occur. However, just as in the previous section, these events can be characterized as jurisdictional, fiscal, political, biological, and/or economic in nature. And, as with the settings in which the programs take place, there is a tendency for programs to be motivated by a number of factors.

The two most prevalent factors behind adjustment schemes are biological and economic in nature. The primary biological factor motivating restructuring or adjustment programs to date has been stock depletion. Although not all fisheries undergoing adjustment have involved stocks which were in trouble, there are many examples of depleted Stocks providing the impetus for adjustment (e.g., Canadian and US Atlantic Ground-fish, United Kingdom).

The primarily economic motivating event has been a combination of decreased profitability: increased effort (U.S. Surf Clam and Ocean Quahog fishery, Canadian British, Colombian halibut fishery, Netherlands cutter fleet) or the threat of such a situation (as in the Australian Northern Territory Barramundi Daly River program).

In a number of cases the biological and economic factors have engendered political interest, although such attention has not always facilitated adjustment program implementation. For instance, current political efforts in the U.S. resulted in the de facto suspension of a recently approved red-fish ITQ program in the Gulf of Mexico region. On the other hand, positive pre-election attention has resulted in the allocation of funds for buybacks in the Northeast region of the US and for the most recent round of the UK decommissioning program.

2.3 Responses

2.3.1 Buyout

To date, the case studies reveal that buyout efforts have focused on the removal of vessels and gear as well as on the purchase of access licenses. Same programs have been voluntary, while others have included some mandatory measures. As can be expected, voluntary buyouts have tended to remove latent effort (i.e., unused licenses) as well as some active effort.

Measures such as mandatory vessel scrapping (United Kingdom program) remove

16[15] The all-or-nothing character of vessel buyout was modified in the Australian Northern Prawn fishery by a buyout denominated in terms of capacity units. This resulted in the consolidation of effort, but not necessarily in the reduction of effort.

the threat of displacing or transferring the effort into other fisheries, but only if the vessel is entirely scrapped (engine and gear included).17[15] However, scrapping also removes the possibility of privately recouping some of the capital value of vessels. While some buyouts have involved direct payments (Australian New South Wales' abalone), others have used sealed bids and have taken a reverse or "Dutch" auction approach, awarding monies to the lowest bids (U.S.FCRDP)

Buyouts provide a way of directly and measurably reducing capital and effort in a fishery. However, the effects of buyout (unless all vessels or gears are removed) are only temporary and will only last as long as it takes new technology to return the fishery to its prior level of effort. To counter this, some countries have repeatedly bought out the same fishery (United Kingdom, Netherlands, and Australia).

2.3.2 Input Controls

Of the standard range of input controls that can alter participants' behavior in a fishery, there are two mechanisms, which have been described as adjustment mechanisms: across the board mandatory gear reductions and license consolidation schemes.

Mandatory gear reductions in Australia have included such things as across the board decreases in a particular gear types such as the number of lobster pots (Australian Victorian Rock Lobster fishery) or in the allowable lengths of nets (Australian Northern Territory Barramundi fishery).

As with buyouts, the use of input controls to reduce effort and/or capital in a fishery appears to be only temporary in nature because the remaining participants still face incentives to increase their effort.

2.3.3 Output Controls

The individual transferable quota programs in Canada, New Zealand, Iceland, and the United States have achieved their goals of reducing overcapitalization, stabilizing employment in the industry throughout the year, increasing the safety of operations, stabilizing product flow, and decreasing harvesting costs from derby fishing levels.

All of the particular output control programs have emphasized various aspects of design features of ITQ programs. For instance, as the New Zealand experience has illustrated, ITQs do need to be denominated in percentage terms in order to accommodate changes in the total allowable catch. The scope of the U.S. Alaskan Community Development Quota (CDQ) system shows that ITQ schemes can be designed to accommodate particular user groups or communities.18[16] And, as the Canadian and Netherlands IVQ and the US halibut/sable-fish ITQ programs illustrate, consolidation or leasing caps can be included as explicit design features to address concerns about consolidation.

17[16] National Marine Fisheries Service (Juneau). 1992. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis: Implementation of the Western Alaska Community Development Quota Program the Bering Sea and Aleutian Islands Management Area.

18[17] Anderson, Lee G, 1992. The National ITQ Study Report: Consideration of the Potential Use of individual Transferable Quotas in US Fisheries. Volume 1. A report prepared for the National Oceanic and Atmospheric Administration- National Marine Fisheries Service.

In all instances, there are six critical design elements that have affected the results of the ITQ programs:

- the nature of the property right.
- the scope of the program's management unit,
- the process for the determination of the total allowable catch (TAC),
- monitoring and enforcement measures,
- the initial allocation of the ITQs, and
- the use of additional regulations in conjunction with the ITQs 1920[17]

2.4 Outcomes

Determining the outcomes of adjustment schemes is exceedingly subjective. The ANFAS project concentrates on assessing the intended and anticipated outcomes as well as the ancillary and unanticipated effects of adjustment schemes. The schemes that do have defined goals such as the removal of vessels, participants, and/or gear have typically achieved their immediate goals. However, the case studies also reveal that buyout and input control schemes have had temporary effects and that their use does not eliminate long-term incentives to expand effort and capacity. Because output schemes result in the internalization of incentives for investment and cost minimization, they also internalize the adjustment process, making it an ongoing aspect of operating in the fishery. Thus, in this regard, the output-based schemes appear to have a more durable effect.

3 GENERAL DESIGN CONSIDERATIONS FOR RESTRUCTURING AND ADJUSTMENT SCHEMES

3.1 Policy Instrument Design

As discussed in the previous sections, there are three categories of policy instruments which can be used to achieve structural adjustment in a fishery buyout programs, input-based programs (including licensing limitation programs), and output-based programs. Because the programs within each category have their respective advantages and disadvantages, the design aspects of adjustment schemes are extraordinarily important. Part of the ANFAS project includes developing applied tools for structured thinking about adjustment issues and program design. Two such tools are described in the next section.

3.2 Tools for Systematic Design

In an imaginary world, a fishery manager might be able to look at any or all of the fisheries under his or her jurisdiction and be able to restructure or adjust any or all of them to achieve whatever goals were desired. In a more realistic setting, some prioritization of where restructuring or adjustment may transpire will likely be necessary. The following tools are intended to help with this.

3.2.1 Goals & Objectives of Adjustment Schemes

If a particular fishery is to be targeted for adjustment, it is useful to have the goals and objectives of the scheme explicitly defined and enunciated. Completion of Goals & Objectives of Restructuring and Adjustment Schemes (Table 3.1) is intended to assist in the identification of all the potential reasons for adjustment. Completion of the table requires overt recognition the criteria (biological, economic, and sociological) that are driving the scheme. It also helps in determining if there is an array of such goals that need to be achieved, if some are of more importance, and if some are of lesser importance. These goals and objectives can then be incorporated in the design features of a restructuring or adjustment program, thereby influencing:

- the scope and temporal aspects of the program,
- the eligibility and qualifying criteria,
- how to address latent capacity,
- what accompanying regulations may be necessary, and
- what funding mechanisms should be used.

Additionally, this table provides a framework for subsequently evaluating whether or not the goals are achieved.

3.2.2 Comparison and Prioritization of Fisheries/or Adjustment

A second tool for systematically designing adjustment schemes involves completing Comparison & Prioritization of Fisheries for Adjustment (Table 3.2) for each fishery under consideration21[18] , comparing the distributions of totals for each fishery under consideration provides a means for qualitatively assessing the relative need for adjustment in the fisheries.

This procedure does not provide an unequivocal definition of which fisheries "should" be restructured or adjusted. However, it does provide a means for ranking the distinguishing elements that make a fishery a candidate. Then, depending on which distinguishing elements may be of more concern, the fisheries can be ranked and accordingly targeted for restructuring or adjustment. Again, the purpose of the table is to force explicit recognition of how important or significant each of the rationales may be.

Table 3.1 Goals & Objectives of Adjustment Schemes

CRITERIA	**HIGH**	**MEDIUM**	**LOW**
BIOLOGICAL			

21[18] This is done by marking off the relative importance of each of the various issues hems or rationales for adjustment and then totaling the number of check marks made in each column.

Rebuilding to Sustainability (Crisis Control)			
Capacity to Rebound			
Extent of Recruitment Over-fishing			
Maintenance of Sustainability (Crisis Avoidance)			
Inability to predict stock status			
Short Term Annually			
Long Term			
ECONOMIC			
Reduction of Growth Over-fishing			
Reduction of Effort			
Locally			
State-wide			
Fishery-wide			
Reduction of Capital			
Locally			
State-wide			
Fishery-wide			
Capture of Rent			
Locally			
Fishery-wide			
SOCIAL			
Explicit allocation to user group(s)			
Commercial			
Locally			
Slate-wide			
Fishery-wide			
Recreational			
Locally			
Slate-wide			
Fishery-wide			
Aboriginal			
Locally			
Fishery Wide			
Conservation / Non-consumptive			
Locally			
Stale-wide			

Fishery-wide			
TOTALS			

Table 3.2 Comparison & Prioritization of Fisheries Adjustment

RATIONALE	**HIGH**	**MEDIUM**	**LOW**
BIOLOGICAL			
Level of Stock Health			
Locally			
Statewide			
Variability of Stock Size			
Locally-			
Statewide			
Imminence of Stock Crash			
Locally			
Statewide			
Human Influence on Stock Stability			
Direct (e.g.. stocking, seeding)			
Indirect (e.g.. pollution, habitat loss)			
Role in Large Marine Ecosystem			
ECONOMIC			
Level of Capitalization			
Locally			
Statewide			
Level of Efficiency			
Locally			
Statewide			
Level of Revenue Generation			
State			
Direct			
Indirect			
Participants			
Direct			
Indirect			
Existence Value			
INTERJURISDICTIONAL			
State - State			
State - Federal			
Federal - International			

SOCIAL			
Cultural Significance			
Locally			
Commercial			
Recreational			
Aboriginal			
Non-consumptive			
Statewide			
Commercial			
Recreational			
Aboriginal			
Non consumptive			
Inter-sectoral Conflicts			
Commercial - Recreational			
Commercial - Aboriginal			
Commercial - Non-consumptive			
Commercial - Commercial			
Non-consumptive - Recreational			
Non-consumptive - Aboriginal			
Recreational - Native			
Intra-sectoral Conflicts			
Gear			
Vessel Class			
TECHNOLOGICAL			
Inter-sectoral Conflicts			
Commercial - Recreational			
Commercial - Aboriginal			
Commercial - Non-consumptive			
Commercial - Commercial			
Non- consumptive - Recreational			
Non-consumptive – Aboriginal			
Recreational – Aboriginal			
Intrasectoral Conflicts			
Gear			
Vessel Class			
TOTAL			

3.3 Policy Implementation

Ideally, restructuring or adjustment policies can be implemented at any point in a fishery's existence. However, experience shows that even when the vision for policy change is present a focusing event such as extreme economic conditions or stock failure is required to instigate actually change. Given that focusing conditions are the very ones that resource managers actively seek to avoid, this presents a perverse

obstacle to be overcome if change is to occur. In other words, in the effort to be proactive, managers may be faced with trying to initiate change under conditions which may not indicate or provide strong support for restructuring or adjustment.

The potential difficulties of engendering support for policy change make it doubly important to include the affected user groups in the process of program design.22[19] This allows for practical input from experienced participants. Moreover, it is part of the important process of vesting stakeholders in the program.

A third aspect of policy implementation and stakeholder investment involves the transparency and clear definition of the process. This serves to reduce uncertainty about the process and about the outcome. Furthermore, strict attention to due process helps to reduce the chance of legal challenge on procedural grounds.

In short, the timing and manner in which a restructuring or adjustment program is implemented can be just as critical to the success of the program as the program's design. The notions of capitalizing on windows of opportunity, vesting stakeholders, and providing a transparent and dearly defined process are critical to fisheries restructuring and adjustment.

3.4 Summary

The Australian National Fisheries Adjustment Scheme (ANFAS) Project is a response to the present independent nature of fisheries adjustment programs currently taking place in the various State and Commonwealth fisheries jurisdictions around Australia. Most efforts at structural adjustment to date have occurred without an overall national policy framework. This framework is perceived to be necessary as fisheries are increasingly managed on a species-wide level and from a multi-disciplined approach.

The use of restructuring schemes requires the articulation of clear objectives and the capacity to ensure that these objectives are being met, regardless of their design, funding, or jurisdictional characteristics. The intent of having clear guidelines and tools is for facilitating decision making based on a systematic understanding of the issues associated with fisheries adjustment and for designing the most appropriate adjustment schemes for particular fisheries in need of structural adjustment.

This paper outlines some general observations of the first stage of the ANFAS project. It describes the beginnings of a systematic guide to the structural adjustment dialogue and to policy making. The next phase the project involves developing the legislative and inter-jurisdictional framework for an Australian National Fisheries Adjustment Scheme.

The ANFAS project is scheduled to be completed at the end of 1996.

22[19] Jentoft, S and B McCay. 1995. User Participation in Fisheries Management. Marine Policy 19:227-246