Asia-Pacific
Economic Cooperation

AN INDEPENDENT ASSESSMENT OF APEC'S ECONOMIC AND TECHNICAL COOPERATION: ACTIVITIES OF THE FISHERIES WORKING GROUP

SOM Committee on Economic and Technical Cooperation

March 2004

Project # ESC 01/2003

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APEC#204-ES-01.1

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Executive Summary

Background

1. APEC economies are responsible for over 50% of the world's wild capture harvest. Wild capture harvest appears to have reached a plateau. In recent years there has been remarkable growth in aquaculture and this looks likely to be sustained in the near term. The general down turn in growth in the agricultural sector (which includes fisheries) is noteworthy. This has implications for employment in general and for women in particular.

2. Food derived from wild capture fisheries and from aquaculture is an important source of protein and foreign exchange for developing economies. Products from wild capture fisheries and aquaculture are highly traded within the APEC region itself and to economies outside of APEC. Recent developments in regulatory regimes governing seafood safety and health are likely to be of great significance to APEC economies, especially developing economies. Trade-related issues include seafood health and safety, product labelling and environmental protection. Plans by significant players in the global market, such as the EC and the US, to introduce quality control strategies will have important economic implications for APEC member economies.

3. Although fisheries management falls squarely within the domain of sovereign governments, there are an increasing number of governance-related issues associated with the ability of developing nations to create and appropriate economic rent, manage migratory stocks, and control illegal fishing.

APEC, Economic and Technical Cooperation (ECOTECH) and the Fisheries Working Group (FWG)

4. For the outset, it is worth noting that working groups are the principal vehicles for contributing to the over-arching goals of ECOTECH. It is at this level, within APEC, that knowledge is advanced and information disseminated.

5. The decision-making hierarchy devolves a great deal of decision-making power down to the FWG. This is both appropriate and desirable. Given the broad parameters of ECOTECH there appears to be ample scope for FWG projects to contribute to the general goals and objectives as set by APEC ministers in general and the directives of the SOM set in 1991.

6. The effectiveness of FWG outputs depends *inter alia* on the quality of the pool of projects proposed by participating member economies each year. It would seem most likely that project proposals reflect, to varying degrees, the interests of particular officials and member economies. These interests may or may not coincide with APEC-wide interests. There does not appear to be a strong linkage between EC that is responsible for analyzing trends, Committee on Trade and Investment (CTI) that is a trade-related group, and the FWG. These two groups, in particular, have a comparative advantage in terms of access to analytical skills and an over-arching view of APEC, and could play a larger role in helping the FWG shape a strategic direction for its work. This would assist the FWG develop a

program that is focused on common issues (a recent example would be food safety) as opposed to projects that are of particular interest to a small subset of member economies.

7. The discretionary budget for the FWG to advance its aims is miniscule, running at about 5% of total APEC revenue, before extraordinary member contributions. The annual spend of around US$189,000 should also be considered alongside APEC's the trade in seafood, the role of seafood in diet, and employment, particularly opportunities for women. If member economy contributions continue at these levels then the prospect of the FWG injecting more money into project activity depends on (a) the ability of FWG to lift its core funding relative to other working groups; and (b) the leverage that can be gained from core funding. Participation by donors and international organizations in FWG projects has been minimal.

8. An earlier attempt to record and assess project outputs was not sustained. In part, this is a compliance issue that should be an on-going activity of BMC, using summary information provided by the FWG. However, compliance should be viewed as part of a concerted extension effort. Both EC and ESC are listed as groups facilitating information exchange, sharing information and experience. Apart from the centralized website – which is an excellent facility – there is no obvious routing of information and experience from EC and ESC to the FWG and vise versa.

9. Effective coordination is important to achieving successful FWG outcomes. Coordination can be viewed vertically and horizontally.

    a. *Vertical coordination*: at least three fora are relevant to achieving vertical coordination.
        i. SOM is responsible for advancing the effective implementation of key ECOTECH initiatives. The SOM Committee of ECOTECH (ESC) is a vital link between the FWG and SOM. ESC is the channel by which higher-level initiatives should directed back to the relevant working group and summary outcomes from FWG projects are fed-back. ESC could also assist with the identification of cooperative initiatives and avoidance of the duplication of effort occurring in working groups.
        ii. CTI provides a forum for trade related issues. CTI is the appropriate forum for trade-related work that emanates from FWG projects. Given the importance of fisheries to individual economies and the region it is surprising that there are not more FWG projects focusing on trade. This suggests a lack of an effective link between the CTI and the FWG.
        iii. EC is responsible for identifying economic trends and issues. It would seem appropriate that information should flow from EC, possibly via ESC, to the FWG informing FWG participants on trends in relevant indicators.

    b. *Horizontal coordination*: the over-riding challenge is enhance the degree of coordination before work programs get implemented so that working group activity effectively contributes, with minimal overlaps, to the overarching

goals of APEC. Coordinating activities across working group fora is achieved mainly through SOM directives that set the broad operational parameters for working group programs. As noted above, ESC could assist with the shaping of these parameters in a way that taps into the comparative advantage of the working groups, builds on complementarities and avoids duplication. The ESC (APEC Working Group Coordination) Meeting in Chile 2004 was innovative and should become standard practice. At future meetings, Lead Shepherds could report on project outputs and share their respective strategic plans of action. Lead Shepherds could then report back to their respective working groups. The APEC Secretariat achieves a degree of coordination through its website.

FWG activities and outputs

10. Since 1995, US$1.90 m has been allocated to 26 FWG projects. On average, 61% was operational, 18% TILF and 21% self-funded. The average level of funding was about US$73,000. This is not a large budget and expectations with respect to impact and performance must reflect this level of spending. If self-funding is removed, then the average is US$45,000 per project. Organizational costs, Secretariat costs, member economy costs, and so on, would need to be added to these data to get a more accurate estimate of the cost of FWG activities.

11. The supply of project proposals for consideration at the annual FWG meetings most likely reflects, to varying degrees, the interests of particular officials and member economies. While some projects – say developing an inventory – are one-off - there is evidence of projects building on each other over time. The extent to which this can be achieved will depend to a large degree on the project overseer staying involved in the FWG.

12. In terms of topic areas, aquaculture has received most attention from FWG activities. This aligns very well with the rapid growth in aquaculture occurring in APEC economies. However, trade and public health, both important to APEC economies, accounted for about 25% of the topic areas. Only one project was dedicated to studying role of women.

13. Bearing in mind the directions of the SOM in 1991, it is worth noting that only one project examined the economic costs and benefits of tariff removal. If progress is to be made on fisheries trade liberalization there needs to be a sustained effort on quantitative analysis comparable to the effort that went into agriculture prior to the Uruguay Round.

14. Only a very limited number of projects have focussed on problems of fisheries management, which, according to the FAO, is of increasing concern. Projects on fisheries management could focus on generic topics related to governance and management practices, and/or address regional issues arising from the management of common stocks and illegal fishing. Much could be gained by sharing experience derived from the variety of management systems that exist within APEC.

15. Relying on the FWG classification scheme proved not to be particularly useful. The fact that "unclassified" projects dominate other categories does not necessarily mean that these projects are unfocussed or not well aligned. Many "unclassified" projects are very relevant – for example, seafood inspection – to fisheries development and trade. As a suggestion, the following classification might better label a project as well as reflecting the focus and priorities of the FWG:
    - Aquaculture
    - Trade
    - Sustainability

    Existing ECOTECH themes could easily be mapped into this classification.

16. The creation of knowledge was defined fairly liberally. About one-quarter of the projects involved research activity. Half of the projects listed links with universities, research institutes, and NGOs. The extent to which APEC study centres are involved is not clear. Workshops are the most common instrument used to communicate knowledge.

Recommendations

1. Given the significance of fisheries in general, attempts to spread FWG activities over other working groups, or to incorporate FWG activities within other groups, will dilute its focus and lower value-added.

> *Recommendation 1: the FWG should not be assimilated into other fora. It should stay focused on fisheries.*

2. Within APEC, vertical coordination with higher-level fora, especially with respect to project identification *ex ante* and output extension *ex post*, is a major shortcoming. There is also considerable scope for improving FWG links beyond APEC (with international organizations such as FAO and regional fisheries management agencies). The strategic plan (Recommendation 6) and project output summaries (Recommendation 11) recommended below could provide a vehicle for improving linkages. However, the case for establishing links must be made otherwise the network will get too unwieldy.

> *Recommendation 2: there should be an effort to improve the links between the FWG and higher-level fora viz. ESC, CTI, and EC and the Secretariat; and international organizations.*

3. Information required in project proposals is satisfactory. It is important that the project proposal process remains streamlined, particularly if project assessment is done out of session. The preparation of projects should not become a barrier to entry by being overly onerous. Furthermore, the challenge facing the FWG is to appropriately signal project opportunities that are closely aligned with its strategic direction. At present the pool of proposals appears quite limited.

Recommendation 3: The FWG's strategy and work plan as suggested in recommendation 6, should be forward looking and signal the full range of projects that are aligned with its strategy.

4. Beyond the APEC organization, the FWG should seek to plug gaps in areas not well served by larger and better-resourced organizations such as FAO and research institutes. International organizations, such as the FAO, and research institutes, including universities, have a huge comparative advantage in terms of funding and human capital. Gaps exist in the area of fisheries management, trade, health and safety. The FWG should seek to complement and not duplicate the work of other organizations. This of course does not preclude applying information produced by other organizations to projects focused on the APEC region.

Recommendation 4: Project proposals should identify gaps and show how the proposed work will complement the work of other organizations.

5. The project classification system should be changed to better reflect the activities and focus of the FWG. The existing system does not provide a coherent platform for integrating work and it does not assist with the communication of project outputs. The following classification system easily fits within existing ECOTECH themes.

Recommendation 5: the FWG classification system should be based on

- *Aquaculture*
- *Trade*
- *Sustainability*

6. The FWG should develop a "living" strategic plan along with a work plan for delivery. The strategy would incorporate views from other APEC groups, recognise the work going on in other working groups, and build on work being undertaken by other organizations and research providers. The ESC APEC Working Groups Coordination Meeting, held in Chile should be used as a model for advancing inter-working group discussions, collaboration and coordination. The strategy would help improve coordination across APEC groups as well as improve program coherence over time.

Recommendation 6: The FWG should prepare a publicly available strategic document outlining a plan of work, broadly defined, for the new 3-5 years. The document should be discussed at an ESC meeting of Lead Shepherds, re-visited at each FWG meeting and updated as new information and priorities come to hand.

7. The FWG is dedicated to working within an area of obvious significance to APEC economies and their sustainable development. The FWG's operational budget is miniscule and attempts should be made to use core funding to get leverage for funding from the private sector. Involving the private sector, in areas such as development, processing and health standards, not only enriches the project output but it should also contribute to greater uptake.

> *Recommendation 7: private sector participation should be actively encouraged, perhaps by favourably weighting projects with private sector participation.*

8. Most major universities within the APEC region have on-going programs that are relevant to the FWG. Moreover, these universities will have access to research funds and researchers that could complement the FWG's work program and augment the effectiveness of its outputs.

> *Recommendation 8: FWG should explore the possibility of developing collaborative linkage with APEC member research institutions, such as universities and research institutes. APEC study centers are one obvious avenue for achieving this.*

9. A small number of projects have demonstrated a reasonably high level of end-user uptake but this would appear to be the exception rather than the rule. The extent of diffusion beyond this community is largely unknown. Furthermore, little is known about the uptake of research results by value-adding organizations including private sector firms, NGOs and government agencies. End-user buy-in, possibly through co-funding, should enhance the prospect of uptake.

> *Recommendation 9: demonstrable end-user links should be a necessary condition for funding. End-user linkages should be with on-going organisations including government agencies but more importantly NGOs, the research community and universities within APEC.*

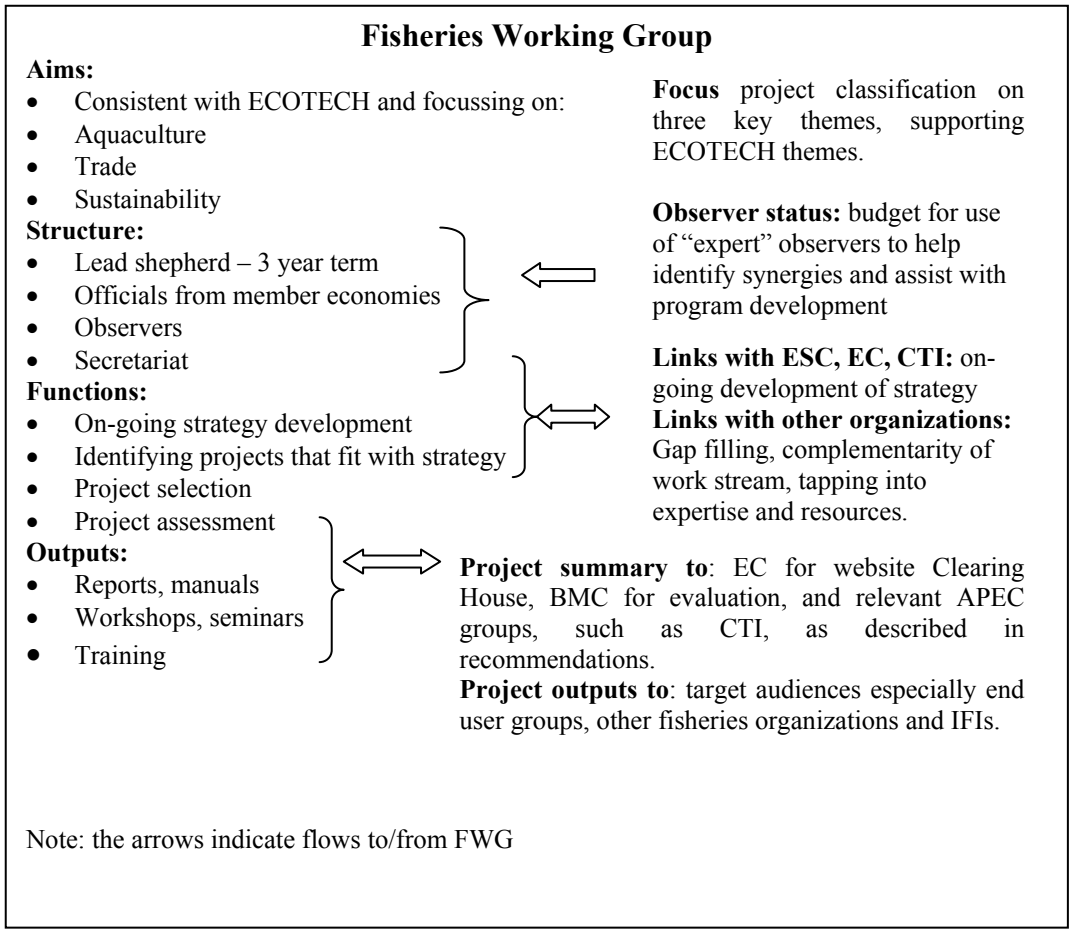
10. The (unusual) meeting of the FWG in Viet Nam provided an opportunity for experimentation. It was unusual because proposal assessments had been completed prior to the meeting allowing more time for review work in progress and to discuss working group strategy.

> *Recommendation 10: meetings of the FWG should focus on reviews of work in progress and the development of strategy. Project assessment should be undertaken out of session.*

11. Communicating the results of FWG projects beyond officials and those participating in workshops, conferences, and training sessions, remains a major challenge.

> *Recommendation 11: A summary report should be filed with the Secretariat. A percentage of the budget could be withheld until the summary is submitted. The summary report should list project outputs and describe how they can be accessed. If the project involves a workshop or training session then the summary should identify the aims of the workshop, structure of the workshop, number of participants, participant origin, and material provided. The summary information can be listed on the APEC website and used by both FWG and BMC to monitor performance against strategy.*

The following diagram summarises key recommendations.



1. Background

Economic and technical cooperation (ECOTECH) forms one of the three pillars of APEC activity and covers a variety of capacity building and information sharing activities conducted by APEC bodies. These are aimed at enhancing members' – especially developing members' – ability to benefit from the liberalization agenda and reducing disparities within the diverse APEC region. APEC ministers have directed that ECOTECH work should focus on six priority areas: developing human capital, developing stable, safe and efficient capital markets, strengthening economic infrastructure, harnessing technologies for the future, safeguarding the quality of life through environmentally sound growth, and developing and strengthening the dynamism of small and medium sized enterprises.

In 1999, Ministers directed the Senior Officials' Meeting (SOM) to continue working on improving coordination and to ensure that ECOTECH projects are of high quality, results-oriented, add maximum value, and enjoy wide participation. In 2000, Ministers endorsed the ECOTECH Sub-Committee (ESC) recommendation for project evaluations with external assistance. ESC was established to assist the SOM in coordinating and managing APEC's ECOTECH agenda and identifying value-added initiatives for cooperative action. The ESC advances the effective implementation of the 1996 Manila Framework for Strengthening Economic and Technical Cooperation and Development by consulting APEC Fora and developing policy management tools and guidelines for projects.

The Fisheries Working Group (FWG) was created by the SOM in 1991. It aims to: promote the conservation and sustainable use of fisheries resources; promote sustainable development of aquaculture and habitat preservation; seek solutions to common fisheries resource management problems and aquaculture disease control; enhance food safety and quality of fish and fisheries products; and promote sector-specific work relating to trade and investment liberalization and facilitation.

In "Assessing APEC's Progress: Trade, ECOTECH & Institutions", the APEC International Assessment Network, APIAN, noted the importance of economic and technical cooperation in APEC, stating "ECOTECH is critical to the realization of APEC's vision and the economic development of APEC members." Yet, despite this recognition, APIAN still noted shortcomings that continue to negatively impact the quality and quantity of ECOTECH activities. Among these is a lack of coordination among APEC fora and a lack of focus in ECOTECH programs. In order to make the best use of APEC's limited resources, APEC needs to ensure that projects are well designed, well managed, and will have the greatest possible impact on member economies.

1.1 Objectives of the Project

The aim of this project is to conduct, as a pilot project, an independent assessment of ECOTECH activities in the FWG that will:

1. Identify ways to make ECOTECH activities more effective;
2. Expand knowledge and recognition of ECOTECH activities;
3. Improve coordination between various APEC fora;

4. Identify areas where ECOTECH activities have had the greatest impact on member economies;
5. Enhance the ESC's ability to examine and improve ECOTECH coherence and efficiency; and
6. Facilitate the setting of strategic priorities for future ECOTECH projects.

1.2 Approach

An APIAN Advisory Committee worked with the contractor and had an opportunity to provide him with comments on an earlier draft *viz*. how the activities of the FWG are advancing the goals and objectives of ECOTECH and how to make ECOTECH activities more effective. Richard Feinberg and Robert Scollay acted as co-coordinators of the APIAN Advisory Committee and suggested ways to improve coordination between various APEC fora, enhance the ECOTECH Committee's ability to examine and improve ECOTECH coherence and efficiency, and the facilitate the setting of strategic priorities for future ECOTECH projects.

Work proceeded as follows:
1. APEC economies and their respective fishing (capture and aquaculture) industries were profiled.
2. ECOTECH activities and programs were described. Outputs (broadly defined) were measured and charted over time.
3. Where possible, linkages between the above activities and outputs and end-user groups (including women) were established.
4. Based upon the information collected an assessment is made of effectiveness (is the program achieving the desired outcome?) and efficiency (is the outcome being delivered at least cost?) and, where possible, a qualitative judgement is made of the benefits and costs associated with each ECOTECH program or activity.
5. Constraints and opportunities are identified and the implications for adding-value to ECOTECH are outlined.

The following performance measures were considered:
1. Output indicators such as project completions, breadth of project participation, number of people attending meetings, and publications.
2. Impact indicators that measure such items as activities' impact on productivity, employment, conservation, social progress and other goals.

Information on ECOTECH programs and activities were collected from electronic sources *viz*. http://www.apecsec.org.sg/ECOTECH/index.html. The website provided access to a central authorative ECOTECH information resource. The Clearing House includes an ECOTECH information exchange which promotes partnerships in economic and technical cooperation.

In order to achieve the project's objectives it was essential to gain first-hand information on the aims and objectives of each ECOTECH initiative, the target audience and end-user groups. Attending the 14th FWG meeting in Viet Nam was significant because it provided an opportunity to gain first-hand experience with particular projects and to get a working knowledge of APEC and FWG procedures.

The contractor attended SOM I, Santiago, Chile, 2004. A copy of a Draft of this report was distributed to participants. Two presentations were made; one to the ESC (SOM Committee on ECOTECH) 29 February 2004 and a further presentation was made to the ESC (APEC Working Groups Coordination meeting) on 1 March 2004. Attendance at SOM I greatly assisted with mapping out and understanding the linkages between working groups and higher level APEC fora.

1.3 Outline

Section 2 provides an overview of the structure of the FWG within the context of APEC, its establishment in 1991, its aims and an outline of the decision making process used to advance FWG projects. An overview of APEC economies and their fisheries is provided in Section 3. The overview is aimed at providing a context for FWG projects. Section 4 provides a summary of FWG projects according to the foci as directed by APEC ministers. Project outputs are summarized. This section concludes with a discussion that links FWG foci, APEC fisheries, and FWG outputs. Recommendations for improving program management and coordination, including linkages with other fora, to more effectively meet APEC goals and objectives are presented in Section 5. FWG project details are summarized in Appendices.

2. Fisheries Working Group

This section describes the organizational structure of the FWG within the context of ECOTECH and APEC in general. Particular attention is given to the hierarchical features of organizations within APEC, the goals prescribed for FWG activities, cross-fora linkages and the decision making process within the FWG.

2.1 APEC and ECOTECH

APEC operates as a cooperative, multilateral economic and trade forum (http://www.apec.org.sg). Figure 1 illustrates the structure of APEC.

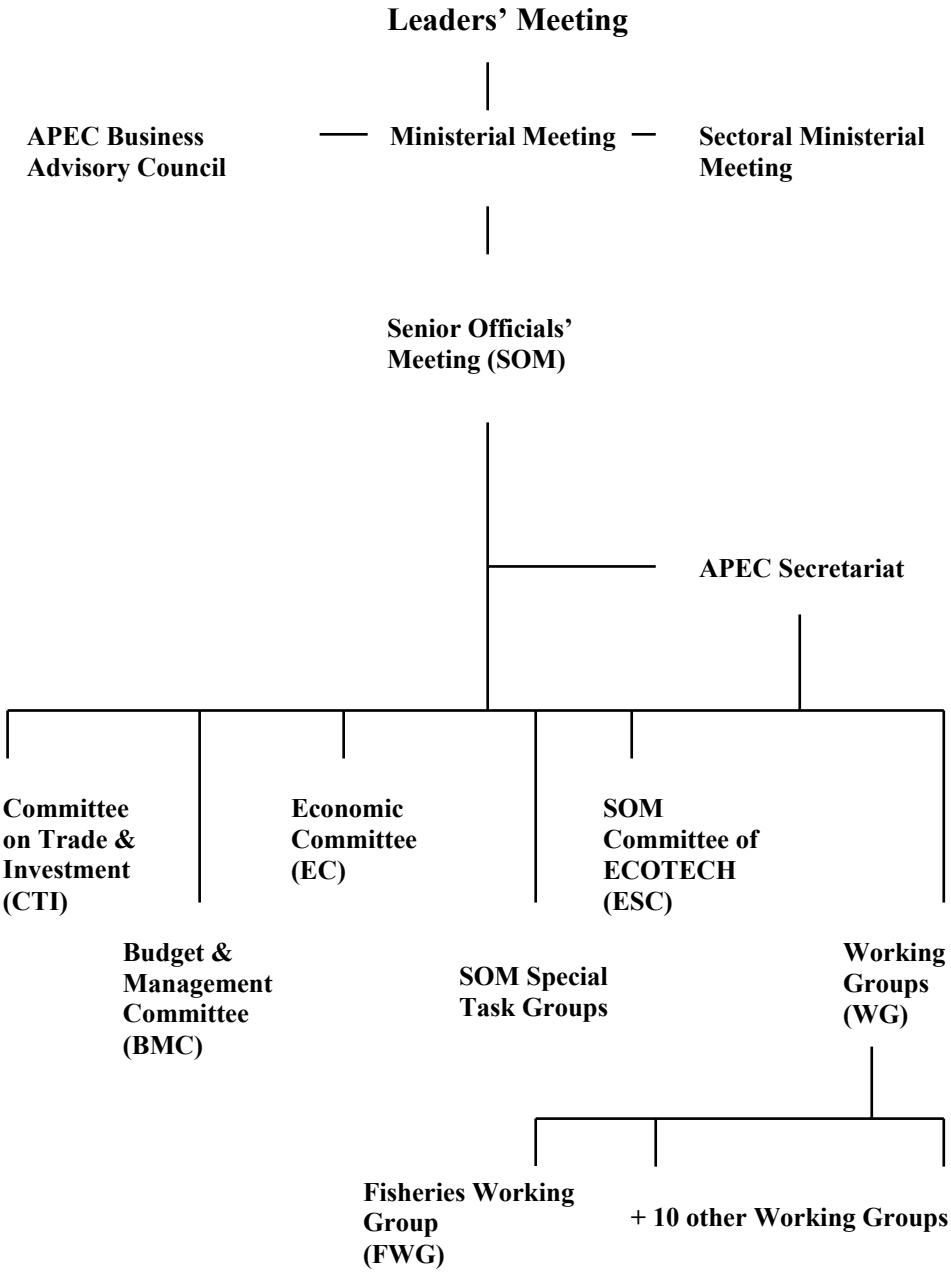


Figure 1: Structure of APEC

As an intergovernmental grouping APEC is committed to reducing trade barriers and increasing investment without requiring its members to enter into legally binding agreements. Every year one of the 21 APEC Member Economies hosts the APEC meetings and serves as the APEC Chair.

It is important to recognise that APEC is not a donor organisation. APEC activities are funded by annual contributions from member economies. Since 1999 contributions have totalled around US$3.38 m each year. These contributions fund the Secretariat based in Singapore and projects, and in particular, FWG projects. Japan has provided additional funds for projects supporting APEC's trade and investment liberalisation and facilitation goals. Member economies also provide support by hosting meetings, enabling officials to attend meetings and money for co-funding projects. Overall, projects are designed with the following criteria in mind:

- Relate to priorities of APEC Leaders and APEC Ministers
- Cover the interest of at least several APEC Member Economies
- Build capacity
- Improve economic efficiency
- Encourage the participation of the business sector, non-governmental institutions and women.

Four committees shown in Figure 1 meet regularly throughout the year.

1. The Budget and Management Committee (BMC) advises the Senior Officials' Meeting (SOM) on budgetary, administrative and managerial issues. Its key responsibility is to prepare the budget for APEC and recommend the approval of projects. The BMC also monitors and evaluates project management aspects of the operations of Committees and Working Groups and makes recommendations to SOM for improved efficiency and effectiveness. The BMC meets twice a year, usually at the end of March and July.

2. The Committee on Trade and Investment (CTI) coordinates APEC's work on trade and investment liberalisation and facilitation. The CTI works to reduce impediments to business activity in 15 key areas outlined in the *Osaka Action Agenda* - tariffs and non-tariff measures, services, standards and conformance, customs procedures, intellectual property rights, competition policy, government procurement, deregulation, dispute mediation, mobility of business people and implementation of World Trade Organization (WTO) obligations (including rules of origin) and information gathering and analysis. In addition to its ongoing work in the 15 key issue areas, the CTI meets three times a year and provides a forum for APEC's 21 Member Economies to discuss trade and policy issues. Specific issues are addressed by Sub-Committees and Experts' Groups under the direction of CTI.

3. The Economic Committee (EC) conducts research on economic trends and issues in support of APEC's trade and investment liberalisation and facilitation and economic and technical cooperation agendas. The EC is also listed as a forum for exchange of information. The EC conducts research on economic trends and issues in the APEC region in support of APEC's priority agendas. It also serves as a forum for APEC Member Economies to exchange information and views on economic trends and issues. The EC operates under two guiding principles. Firstly, the EC focuses on demand-driven work and addresses central economic

issues of priority to APEC Economic Leaders and Ministers and other APEC groups. The EC's work often provides an analytical basis for advancing APEC's agenda. Secondly, the EC fulfills its role as APEC's core analytical body by focusing its work program to deliver high-quality research outputs.

4. The SOM Committee on Economic and Technical Cooperation (ESC) assists APEC Senior Officials in coordinating and managing the economic and technical cooperation (ECOTECH) agenda. It is also listed as having a role in identifying initiatives for cooperative action. ECOTECH is the pursuit of APEC's common objectives and goals through cooperative activities, aimed at attaining sustainable growth and equitable development, while reducing economic disparities among APEC economies and improving economic and social well-being. Activities include research, the sharing of information and experiences, and training. The ESC (Sub-Committee on ECOTECH) was established in 1998 to assist SOM (Senior Official's Meeting) with its work on economic and technical cooperation. The ESC seeks to advance effective implementation of key ECOTECH initiatives, including the *Osaka Action Agenda (OAA)* and the *Manila Framework for Strengthening Economic Cooperation and Development.* In 2002 the ESC was renamed as the Senior Officials' Meeting (SOM) Committee on ECOTECH while retaining the acronym ESC and the original mandate. The SOM assists APEC Senior Officials in coordinating and managing APEC's ECOTECH agenda, as well as identifying initiatives for cooperative action by APEC member economies.

Latest Developments

APEC-wide ECOTECH priorities for the next few years were agreed at the SOM held in Chiang Rai, Thailand in February 2003. Priorities include:

- Integration into the Global Economy.
- Counter-terrorism Capacity Building.
- Promoting the Development of Knowledge-Based Economies.
- Addressing the Social Dimensions of Globalisation

Senior Officials also recognised that to further strengthen APEC's work in ECOTECH consideration should be given to the work being done in these areas by other organisations such as International Financial Institutions (IFIs).

The ESC is investigating mechanisms to fortify coordination between the ESC and other APEC Fora on ECOTECH. To this end APEC member economies are developing a paper that will outline possible ways in which coordination can be strengthened.

Trade and Investment Liberalization and Facilitation Special Account
Cooperative projects in support of trade and investment liberalization and facilitation (TILF) which aim to assist APEC Member Economies to meet the free trade and investment goals, are funded by the TILF Special Account.

ECOTECH Working Groups

There are ten ECOTECH working groups:
Agricultural Technical Cooperation Working Group
Energy Working Group
Fisheries Working Group

Human Resources Development Working Group
Industrial Science and Technology Working Group
Small and Medium Enterprises Working Group
Telecommunications and Information Working Group
Tourism Working Group
Working Group on Trade Promotion
Transportation Working Group.

The potential for overlap between working groups should be noted. For example, many firms and individuals working within commercial (both capture and aquaculture) fishing would also be "small and medium enterprises". Similarly, FWG projects focusing on skill development of skills in aquaculture, fish processing and health, could easily be classified as "human resource development". These overlaps may not necessarily lead to inefficiencies and duplication, provided working groups are aware of each other's activities and outputs (see Recommendation 6).

2.2 Fisheries Working Group

The FWG was created by the SOM in 1991. It aims to promote:

- The conservation and sustainable use of fisheries resources.
- Sustainable development of aquaculture and habitat preservation.
- Development of solutions to common resource management problems.
- The enhancement of food safety and quality of fish and fisheries products.
- Sector-specific work relating to trade and investment liberalisation and facilitation.

At its 13th meeting in Lima, Peru, on 20-24 May 2002, the FWG focused on the following issues:

1. Fisheries management: The meeting discussed the utility of APEC Member Economies in the Fisheries Monitoring Control and Surveillance Network (MCS Network) and the implications on regional and sub-regional fisheries management organisations and APEC Member Economies of the entry into force of the *UN Straddling and Highly Migratory Fish Stocks Agreement (New York Agreement)*. Members agreed that experience sharing in regional fisheries management organisations would be discussed at next year's meeting.
2. Aquaculture: There were reports on the FAO Subcommittee on Aquaculture Meeting for members' information. Members presented on the issue of challenges and priorities for expanding the Aquaculture sector. Consumers' concern on food safety was also presented.
3. Results of the first APEC Ocean-related Ministerial Meeting (AOMM) on 25-26 April 2002: In this Ministerial Meeting, the Seoul Oceans Declaration was adopted. In the 13th FWG meeting, the results of AOMM were presented and discussed. Based on the Seoul Oceans Declaration and the report of Fisheries Senior Officials Meeting, members discussed the importance of working on ways to incorporate the *Seoul Oceans Declaration* into respective domestic fisheries policy.

<u>Key FWG outcomes in 2002</u>

1. The *Capacity and Awareness Building on Import Risk Analysis (IRA)* for Aquatic Animals project was implemented. As part of the project, regional

training courses and workshops on IRA for aquatic animals were organized. A network of people involved in IRAs was established, which will facilitate future exchanges of experiences and expertise on IRA for aquatic animals. A manual on IRA for aquatic animals was developed.

2. Another project, *Developing Industry Standard for the Live Reef Food Fish Trade* will assist in the formulation of a set of industry standards for the live reef food fish trade (LRFFT), and create regional and national frameworks for implementation of such standards. The standards will be developed transparently through participation and will stimulate environmentally sustainable fisheries trade among APEC Member Economies, and reduce the pressures on the region's coral reefs from over-and destructive fishing practice.

2.3 FWG Meeting and Decision Making

The FWG operates underneath the umbrella of APEC, within the structure outlined in Figure 1, and within the parameters of ECOTECH. Thus the overarching aims of ECOTECH *viz.* developing human capital, developing stable, safe and efficient capital markets, strengthening economic infrastructure, harnessing technologies for the future, safeguarding the quality of life through environmentally sound growth, and developing and strengthening the dynamism of small and medium sized enterprises, set the broad scope of FWG activities.

Participation

Participants in FWG meetings include APEC member economies, the APEC Secretariat. However, it is feasible, under APEC rules, for observers (e.g. IFIs and research providers) to be invited as guests for a period of up to three years.

A lead shepherd chairs the annual FWG meeting. This person holds the position of lead shepherd for three years. The current lead shepherd is Mr Stetson Tinkham (USA). Chairing the FWG is a demanding job, requiring not only considerable skill running the annual meeting but also preparing reports and information prior to the meeting. While recognizing that transparency and accountability is important it is also vital that bureaucratic demands do not become excessive.

Decision-making is by way of consensus. There is no necessary continuity in officials representing their respective economy. Not all APEC economies were represented at the 14th meeting in Viet Nam. As an anecdotal observation, it would appear that the background of participants appears to be dominated by science, not economics and fisheries management. The APEC secretariat provides support. Project team members report to the FWG on progress made on incomplete projects.

FWG Budget

The annual budget available for FWG projects is determined by the BMC. The summary of FWG projects provided in Appendix V indicates that the average level of annual project funding (for all projects in any one year and after self-funding has been removed) is about US$189,000, the range over the years is [US$88,688-US$399,205]. Using the average, this annual level of expenditure on projects is about 5% of the total contributions to APEC before extraordinary contributions from Japan.

Funding for officials to be represented at FWG meetings is provided by member economies. The cost of running a FWG meeting would be at least US$100,000 if it is assumed that on average two officials per member economy participated (some economies were not represented, others had more than two officials, at the 14th FWG meeting). To this cost would have to be added venue costs, material, Secretariat costs, and the time officials spent preparing for the meeting.

Annual Meeting of the FWG

The 14th FWG meeting was unusual in that the SARS episode delayed the meeting and officials assessed and ranked project proposals electronically before the meeting. Normal practice is for proposals to discussed and evaluated at the meeting. The 14th FWG meeting was therefore able to focus on on-going projects, results and future strategy. With the benefit of this experience this should be standard practice (Recommendation 10).

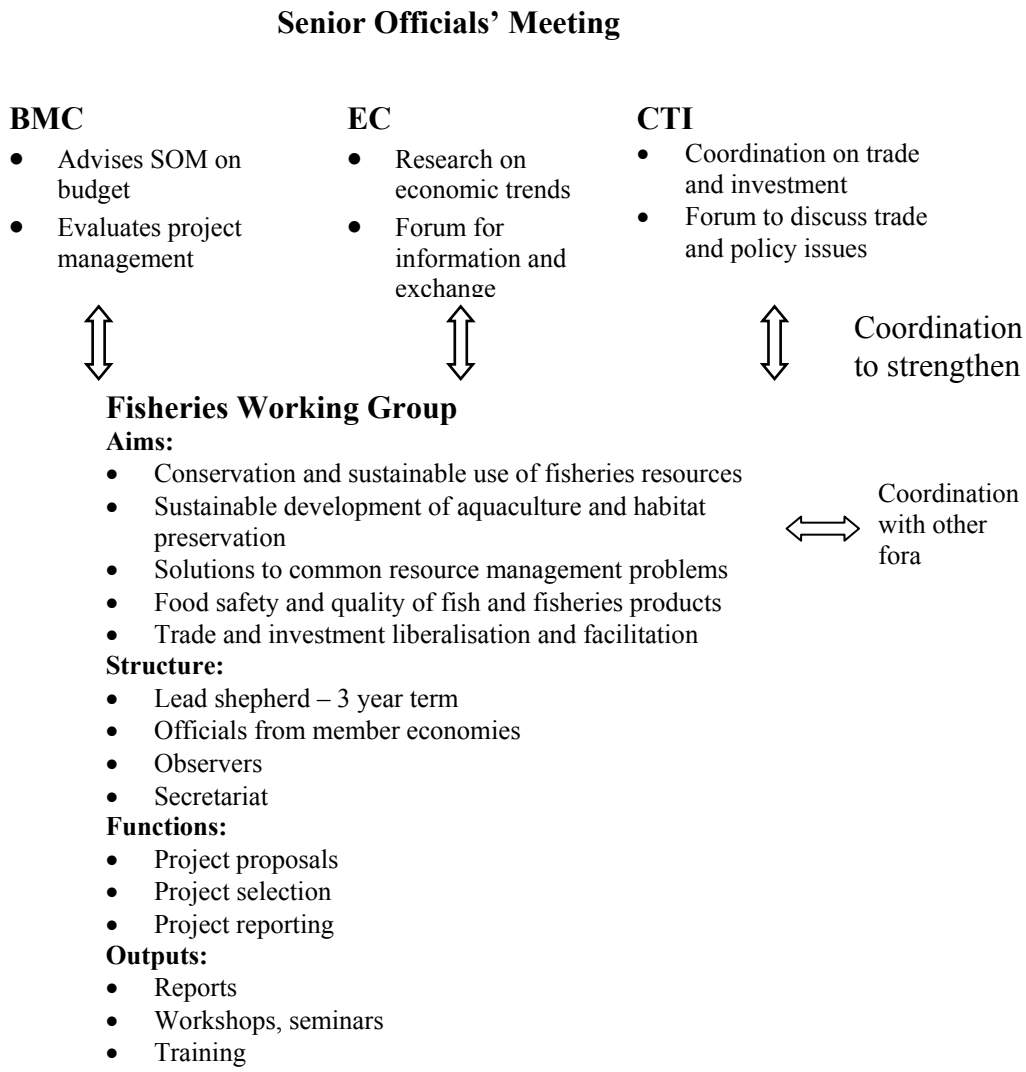


Figure 2: Structure, functions and outputs of FWG

Project Selection

Clearly, the set of approved FWG projects is a function of what is proposed, ECOTECH priorities, proposal quality and budget. The sequence of project approval typically proceeds as follows. An individual member economy proposes a project (see Appendix II for details requested). Each project is discussed and assessed at the annual FWG meeting, recommendations then go forward to the BMC, SOM III and the Ministers sign off on the work program. Not all projects forwarded by the FWG to BMC are approved.

For the first time, the FWG reviewed and ranked project proposals entirely by e-mail. Proposal rankings were derived from the combined "scores" of rankings provided by the following economies: Australia; Canada; Chile; Hong Kong, China; Japan; Mexico; New Zealand; Philippines; Russia; Singapore; Chinese Taipei; United States. In addition to the comments provided by each economy, the Lead Shepherd prepared comments on each proposal. The BMC then reviewed proposals that include comments and suggestions made during the review process. Three out of six proposals were funded.

Project outputs

Outputs from the FWG are summarized in Appendix III. A typical project will produce a number of outputs *viz.* technical reports; workshops, seminars, conferences; and training.

Intersessional Activity

Typically there is no interaction between FWG participants beyond preparing for, and participating in, the annual meeting. Obviously, project overseers are actively involved in monitoring their particular projects.

2.4 Conclusions

A summary of the structure, functions and outputs of the FWG is provided in Figure 2. The following conclusions are based on the hierarchies linking the FWG with other groups within APEC. More detailed analysis of project outputs is given in section 4.

1. Locus of decision-making: the APEC-ECOTECH-FWG decision-making hierarchy devolves a great deal of decision-making power down to the FWG. This is appropriate. Obviously the activities of the FWG must fit within the broad parameters and priorities of ECOTECH, and the budget approved for FWG projects. Within these guidelines and constraints, there appears to be ample scope for FWG projects to contribute to the general goals and objectives as set by APEC ministers in general and the directives of the SOM in 1991.
2. Problem definition: provided projects fit within the broad parameters defining the FWG's mission, the effectiveness of FWG outputs depends *inter alia* on the quality of the pool of projects proposed each year. This, of course, is endogenous to the FWG and its participants, particularly those proposing projects. It would seem most likely that project proposals would reflect, to varying degrees, the interests of particular officials and member economies. These interests may or may not coincide with APEC-wide interests. There does not appear to be a strong

linkage between EC that is responsible for analyzing trends, CTI, ESC, and the FWG (Recommendation 2). These higher-level groups, in particular, have a comparative advantage in terms of analytical skill and an over-arching view of APEC, and could play a larger role in helping the FWG shape a strategic direction for its work. In particular, this approach may assist the FWG develop a program that is focused on common issues (a recent example would be food safety) as opposed to projects that are of particular interest to a small subset of member economies.

3. Budget: the discretionary budget for the FWG to advance its aims is miniscule small, running at about 5% of total APEC revenue, before extraordinary member contributions. The annual spend of around US$189,000 should also be considered alongside APEC's the trade in seafood, the role of seafood in diet, and employment, particularly opportunities for women. If member economy contributions continue at these levels then the prospect of the FWG injecting more money into project activity depends on (a) the leverage that can be gained from core funding; and (b) the ability of FWG to lift its core funding relative to other working groups. Participation by donors and international organizations has been minimal (Recommendation 9).
4. Output evaluation and information dissemination: apparently an earlier attempt to record and assess project outputs was not sustained. This, of course, is crucial and should be an integral on-going activity of BMC, using summary information provided by the FWG (Recommendation 11). Both EC and ESC are listed as groups facilitating information exchange, sharing information and experience. Apart from the centralized website – which is an excellent facility – there is no obvious routing of information and experience from EC and ESC to the FWG and vise versa.
5. Coordination: effective coordination is important to achieving successful FWG outcomes. Coordination can be viewed vertically and horizontally.

   Vertical coordination: at least three fora are relevant to achieving vertical coordination (Recommendation 2).
   - SOM is responsible for advancing the effective implementation of key ECOTECH initiatives. SOM also assists Senior Officials with identifying initiatives for advancing cooperative activities. ESC, as a Subcommittee of SOM, it would seem, should be responsible for advancing the results of FWG activities.
   - CTI provides a forum for trade related issues. CTI is the appropriate forum for trade-related work that emanates from FWG projects. Given the importance of fisheries to individual economies and the region it is surprising that there are not more FWG projects focusing on trade. This suggests a lack of an effective link between the CTI and the FWG.
   - EC is responsible for identifying economic trends and issues. It would seem appropriate that information should flow from EC to the FWG informing FWG participants on trends in relevant indicators.

   Horizontal coordination: coordinating activities across working group fora is achieved mainly through SOM directives that set the broad operational parameters for working group programs. Beyond this there are few instruments and incentives to coordinate activity and outputs (Recommendation 6). The APEC Secretariat

achieves a degree of coordination through its website. But this activity is obviously *ex post* and the challenge is be to tap into latent synergies *ex ante*.

3. APEC Economies and Fisheries

The aim of this section is to provide background information on the state of APEC fisheries, including the state of fish stocks, aquaculture and seafood trade. A brief overview of APEC economies is included in Appendix I which includes, summary data on economic growth, employment, and where possible other indicators relevant to ECOTECH directives. Coverage is not intended to be extensive and detailed; rather the aim is provide a context for activities of the FWG.

3.1 APEC Fisheries and Economy

Total marine production by APEC economies accounts for over 60% of global marine production. Table 1 shows that total production has remained relatively static at around 48 million tones. There is a considerable range in production across APEC economies.

Wild Capture Stocks
Overall it would appear that stocks within the Pacific Ocean are either at, or approaching, their maximum potential (FAO, 2002). Total harvest in the Northwest Pacific is leveling off at relatively high levels. In the Northeast Pacific, the Eastern Central Pacific and the Southwest Pacific, annual harvest is relatively stable, or showing a slight declining trend. There appears to be potential to increase total harvest in the Western Central Pacific, although information on stock abundance is not as reliable as in other areas.

Table 1: Total Marine Fish Production from Selected APEC Economies

	1995	1996	1997	1998	1999	Average	Rank
Brunei	4,389	6,818	4,405	4,930	3,081	3,380	19
Singapore	8,533	8,273	7,752	6,768	4,077	7,801	18
PNG	27,080	23,427	32,430	53,115	39,796	24,779	17
Australia	130,132	130,095	122,423	127,816	134,900	132,439	16
NZ	452,620	386,155	535,429	581,661	552,552	443,827	15
Viet Nam	622,660	644,300	675,868	707,860	777,000	609,388	13
Canada	447,689	516,438	527,638	567,617	569,560	657,643	14
Malaysia	921,212	903,477	911,794	989,778	1,057,194	890,343	12
Mexico	1,001,435	1,037,127	1,075,466	892,934	882,473	957,613	11
Philippines	1,522,655	1,465,526	1,514,995	1,568,642	1,596,757	1,526,639	10
Korea	1,655,445	1,728,974	1,548,487	1,539,284	1,372,906	1,572,759	9
Thailand	2,402,748	2,329,073	2,247,744	2,258,493	2,340,433	2,280,096	8
Indonesia	2,706,626	2,862,605	3,069,703	3,264,530	3,423,360	2,782,225	6
USA	3,578,128	3,515,173	3,694,087	3,440,226	3,329,703	3,612,626	7
Russia	3,787,089	4,136,788	4,075,547	3,816,851	3,467,354	3,889,406	5
Japan	4,553,034	4,383,660	4,485,750	4,112,920	3,962,326	5,119,895	4
Chile	7,270,018	6,524,938	5,655,809	3,103,152	4,886,811	5,868,199	3
Peru	8,816,977	9,440,587	7,770,562	4,233,041	8,257,115	8,171,948	2
China	8,623,097	10,198,103	10,704,010	11,664,187	11,506,310	8,773,129	1
Total	48,531,567	50,241,537	48,659,899	42,933,805	48,163,708	46,891,979	

Source: http://www.fao.org/fi/statist
Note: Ranking is based on the average level of production for the 1991-1999 period.

Overcapacity of the tuna fleets has been pointed out as a major problem in several areas (FAO, 2002). FAO reports that the rapid increase in fishing pressure on some of the deep- water resources is a concern in the South Pacific. Finally, concern exists over the illegal, unreported and unregulated (IUU) fishing.

Aquaculture

In 2000, global reported total aquaculture production (including aquatic plants) was 45.7 million tonnes by weight and US$56.5 billion by value. China was reported to have produced 71% of the total volume and 49.8% of the total value of aquaculture production. Seven APEC economies (China, Japan, Philippines, Indonesia, Thailand, Korea and Viet Nam) are among the FAO's list of the top nine major producers (FAO, 2002). According to FAO statistics, aquaculture's contribution to global supplies of fish, crustaceans and molluscs continues to grow. Aquaculture is growing more rapidly than all other animal food producing sectors. More than half of global aquaculture production originated from marine or brackish coastal waters.

It is particularly significant that aquaculture production in developing countries and low-income food-deficit countries (LIFDCs) has been growing steadily at an average rate of about 10% per year since 1970. However, production growth (by both quantity and value) among LIFDCs, excluding China, has been slower than among non-LIFDCs.

The potential of aquaculture to enhance local food security, alleviate poverty and improve rural livelihoods has been recognized. The Bangkok Declaration and Strategy (Network of Aquaculture Centres in Asia-Pacific [NACA] and FAO, 2000) emphasizes the need for the aquaculture sector to continue development towards its full potential, making a net contribution to global food availability, domestic food security, economic growth, trade and improved living standards.

Fish Utilisation

Of the estimated 89 million tonnes of fish produced in 2000 in the world, excluding China, nearly 71% (63 million tonnes) was used for direct human consumption. The remainder (about 29%) was utilized for various non-food products, mostly for reduction to meal and oil.

As a highly perishable commodity, fish has a significant requirement for processing. In 2000, more than 60% of total world fisheries production underwent some form of processing. The most important of the fish products destined for direct human consumption was fresh fish, followed by frozen fish, canned fish and cured fish.

Fish consumption

Two-thirds of the worldwide fish supply available for consumption in 1999 was consumed in Asia. The share of the animal protein intake of the whole human population derived from fish, crustaceans and molluscs is around 13-16%. In industrialized countries, supply per capita increased from 19.9 kg per capita in 1961 to 28.3kg in 1999. The average per capita fish supply in LIFDCs has increased from around 20% to about 50% of that in the richest countries. In LIFDCs the contribution of fish to total animal protein intake is in the order of 20%. However the share of fish proteins in animal proteins has slightly declined owing to faster growth in the consumption of other animal products.

Trade

Fisheries in many APEC economies are an important source of foreign exchange. In a few cases, fishery exports are essential to the economy. In 2000, the value of total world trade in fish and fishery has increased by 8% since 1998. The increase is largely attributed to a rise in volume as opposed to an increase in value. Thailand and China are among the world's major exporting countries. Developed countries account for more than 80% of the value of total fishery product imports. In recent years Japan has been the largest importer of fishery products, accounting for some 26% of the global total. In 2000 the United States was the second largest importer.

Fish production and trade have grown significantly in the last decades, assisted by improvements in technology, transportation and communications and by sustained demand. A large share of fish production enters international marketing channels, with about 37% exported in 2000 (live weight equivalent) in various food and feed product forms. LIFDCs play an active part in this trade, and at present account for almost 20% of the value of fishery exports. In 2000, developing economies as a whole supplied slightly more than 50% of total exports in value terms. Shrimp is the main fish trade commodity in value terms.

Table 2: Net Exports of Marine Fish US$000

Economy	**1995**	**1996**	**1997**	**1998**	**1999**
Australia	16237	19158	41565	40498	39367
Brunei Darussalam	0	-186	-129	-112	-304
Canada	63172	47036	52079	46755	55112
Chile	32463	36987	38830	46148	60632
China	330292	268553	260826	251357	202309
Indonesia	193441	173597	161095	128268	165714
Japan	-1049323	-905029	-834583	-741831	-822155
Korea, Republic of	8429	-14951	-16586	6374	-15767
Malaysia	-89970	-91575	-92087	-73525	-68577
Mexico	49500	57800	51047	45756	52059
New Zealand	44601	41975	38618	31680	36570
Papua New Guinea	377	-2642	1281	3094	3101
Peru	-991	1789	1528	-1242	-1947
Philippines	36925	29491	16113	39945	33868
Russian Federation	133003	91316	86506	78670	85292
Singapore	-31674	-8646	-9749	3098	14287
Thailand	5682	38583	33051	23497	35579
USA	-243735	-232942	-288414	-344942	-357335
Viet Nam	1289	2882	31063	72730	123296
Average	-26330	-23516	-22523	-18093	-18889

Source: http://www.fao.org/fi/statist

It is worth noting that two high profile WTO fisheries-related disputes have involved APEC members *viz.* Tuna-dolphin (US-Mexico) and shrimp-turtle (US-Thailand). A number of major issues are facing international trade in fishery products; including the implementation of quality control strategies such as: Hazard Analysis and Critical Control Point (HACCP)-based strategy; the concept of risk assessment; general public concern regarding overexploitation of the resource; environmental concerns regarding aquaculture; and the discussion of traceability and labelling. The EC and the United States made HACCP plans mandatory for all plants producing fish products for their markets. The sustainable trade of fish is of concern to consumers, especially in the developed world. Information about dangerous antibiotics in cultured fish species, or about overfished resources, scares consumers away from fish products. Mangrove depletion through shrimp aquaculture has also received negative press coverage recently. On 1 January 2002, the EC enforced a law on the traceability of fish, which obliges producers to indicate the following on product labels: the commercial name of the species and the Latin name; whether the fish comes from the wild or from aquaculture; the country of origin for freshwater wild and cultured fish; and the ocean of origin for wild marine species. The increasing range of types of labelling is creating confusion among consumers.

Fisheries management

There is growing recognition that the demands of fisheries management have grown beyond the need to address purely biological issues. Recently the FAO (2002) has called for an urgent need to reconsider the use of many of the management approaches that have been used to date.

1. In developing countries population and economic growth highlighting the linkage between development activities and sustainable resource use, and the need for capacity building. Internally, there is increasing pressure on fisheries managers to take both stock sustainability and socio-economic factors into account.
2. Both developed and developing countries are grappling with the impacts of globalized trade on all aspects of the fishing industry. Issues of catch certification, trade documentation and food quality assurances are creating incentives that alter harvesting, production and marketing strategies far more quickly than many fisheries administrations and regulatory processes can keep up with. Issues of increasingly globalized trade, especially in developing countries, are altering incentives relating to industrialized fisheries and their ability to raise foreign exchange and drive economic development, but the strategic policy or planning groups of fisheries management agencies often do not include trade and development specialists.
3. The international community places great importance on subregional and regional fisheries cooperation in the conservation and management of fisheries. This is because many fish stocks are transboundary in character and cannot be managed by a single state.

3.2 Fisheries Organizations

A great deal of work on fisheries is undertaken by large, reasonably well-funded, international organizations. In particular, the FAO and OECD, have on-going programmes and activities that are directly relevant to the FWG. Both organizations

have the resources, and skills, necessary to undertake research in fisheries development, management and trade. For example, the FAO has in-house expertise in the areas of biology, economics, marketing and international law, as it relates to fisheries. In addition, the FAO maintains a large database on fisheries production, aquaculture, seafood trade, and market prices. Duplicating the work of these organizations makes little sense. Rather, the work of the FWG should be directed at "plugging the gaps", complementing and adding value to the work of international organizations such as FAO and the OECD. For example, the FWG project aimed at developing a cooperative database covering the seafood sector (FWG 01/2001T) had to rely on FAO to advance the work. The FWG did not have a comparative advantage in this area.

Many APEC economies are involved in regional fisheries management organizations (RFMOs). Arrangements have been established. Chapter 17 of Agenda 21, the United Nations Programme of Action from UNCED, the 1995 United Nations Fish Stocks Agreement and the 1995 FAO Code of Conduct for Responsible Fisheries highlight the role of RFMOs in implementing management measures designed to secure long-term sustainable and responsible outcomes. The principle task of most RFMOs is to manage fisheries. Some RFMOs have adopted innovative systems to address IUU fishing. Increasingly, RFMOs will have to grapple with issues related to excess capacity and IUU fishing. The FWG could usefully promote projects that focus on the above regional fisheries management issues, perhaps partnering with other regional entities such as ASEAN and IFIs such as ADB and the World Bank.

3.3 Conclusions

1. APEC is a diverse group of economies ranging from those undergoing development to those ranked among the highest in terms of GDP per capita. Growth in APEC economies, although trending upwards in the 1990-1999 period, was below the average for East Asia and Pacific economies as a whole.
2. The general down turn in growth in the agricultural (which includes fisheries) sector is noteworthy. This has implications for employment in general and for women in particular.
3. APEC economies are responsible for over 50% of the world's wild capture harvest. Wild capture harvest appears to have reached a plateau and there is evidence that stocks are at, or fast approaching, sustainable levels. In recent years there has been remarkable growth in aquaculture and this looks likely to be sustained in the near term.
4. Food derived from wild capture fisheries and from aquaculture is an important source of protein and foreign exchange for developing economies. Products from wild capture fisheries and aquaculture are highly traded within the APEC region itself and to economies outside of APEC. Recent developments in regulatory regimes governing seafood safety and health are likely to be of great significance to APEC economies, especially developing economies.
5. Beyond the APEC organization, the FWG should seek to plug gaps in areas not well served by larger and better-resourced organizations such as FAO, OECD and research institutes (Recommendation 4). These organizations have a huge comparative advantage in terms of funding and human capital. The FWG should seek to complement and not duplicate the work of other organizations. This of

course does not preclude applying information produced by other organizations to projects focused on the APEC region.

6. A number of important trade issues are particularly important to APEC members. Two high profile WTO fisheries-related disputes have involved APEC members and a number of major issues are on the horizon. These include seafood health and safety, product labelling and environmental concerns. Plans by significant players in the global market, such as the EC and US, to introduce quality control strategies will have important economic implications for APEC member economies (Recommendation 4).
7. Although fisheries management falls squarely within the domain of sovereign governments, there are an increasing number of governance-related issues associated with the ability of developing nations to create and appropriate economic rent, manage migratory stocks, and control illegal fishing (Recommendation 4).
8. Fisheries, wild capture and aquaculture, are of great importance to APEC economies; not only from an economic point of view, but also for reasons associated with *inter alia* the sustainable utilisation of resources, sustainable development, employment, the supply of protein and source food security. These aspects of fisheries, and related governance and public health, are sufficiently important to justify a "fisheries working group" dedicated to the goals of ECOTECH (Recommendation 1).

4. Projects of the Fisheries Working Group

There are three parts to Section four. First, a summary of FWG projects is categorised according to the six foci as directed by APEC Ministers. Second, using the same six categories, a description of project outputs is given. Finally, an assessment of FWG projects is undertaken, given the APEC Ministers' directive and the context provided in Section two.

4.1 Organizational Themes and Projects

At this stage it is worth repeating that the aim of ECOTECH is to enhance member's (especially developing members') ability to benefit from the liberalization agenda and reducing disparities within the APEC region. As noted earlier, the following six ECOTECH themes derive from the 1996 Manila Action Plan:

1. Developing human capital.
2. Developing stable, safe and efficient capital markets.
3. Strengthening Economic Infrastructure.
4. Harnessing technologies for the future.
5. Safe guarding the quality of life through environmentally sound growth.
6. Developing and strengthening the dynamism of small and medium sized enterprises.

The FWG, created by SOM in 1991, was directed to focus on:

1. Promote conservation and sustainable use of fisheries resources.
2. Promote sustainable development of aquaculture and habitat preservation.
3. Seek solutions to common fisheries management problems and aquaculture disease control.
4. Enhance food safety and quality of fisheries products.
5. Promote sector specific work relating to trade and investment, liberalization and facilitation.

FWG, as reported on the APEC website, organises its projects according to the following six categories:

1. Developing human capital (DHC).
2. Promoting environmentally sustainable development (PESD).
3. Encouraging growth of SMEs (EGSME).
4. Strengthening economic infrastructure (SEI).
5. Harnessing technologies for the future (HTF).
6. Unclassified (U).

Five of the above categories used to classify FWG activities are taken directly from the above ECOTECH themes. These categories do not adequately convey project information and work to reduce coherence in FWG outputs. It will be seen below that most projects are listed as unclassified, providing little information for a website search. An alternative system for classifying projects is suggested in Section 5.

Figure 1 shows that 12 of the 26 projects funded since 1995 fell into the "Unclassified" category. Approximately 25% of the projects were classified as aimed at promoting environmental sustainable development (PESD). Only one project was targeted at strengthening economic infrastructure (SEI).

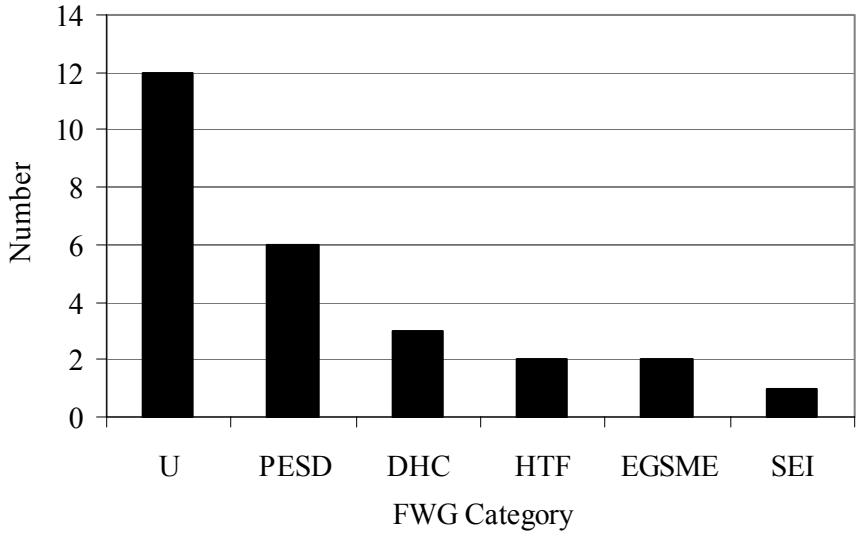


Figure 1: Number of Projects by FWG Category

Total project spending (see Appendix V) for the period 1995-2003 amounted to US$1.9 m. About 80% of total funding – about US$1.5 m - was funded by APEC. Approximately 62% was funded as "Operational", 18% TILF and 20% self-funded. Figure 2 shows that about US $0.7 m was allocated to "Unclassified" projects, US$0.5 m to projects aimed at promoting environmentally sustainable development, and US$0.3 m to harnessing technology for the future. The remaining three categories DHC, EGSME and SEI received less than US$0.2 m.

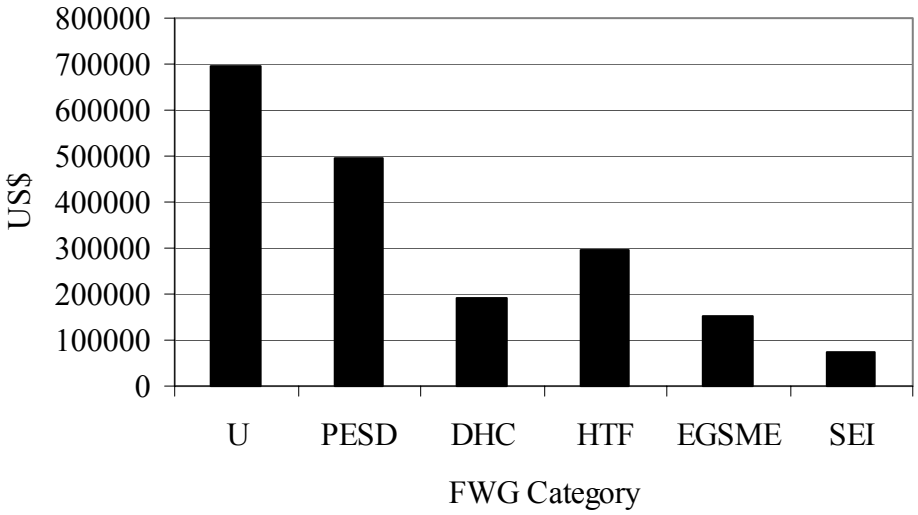


Figure 2: Total Spending by Project Category

Eight APEC members have acted as project overseers since 1995. Both member economies are counted if joint overseeing was recorded. Thailand, Australia and the

USA have sponsored at least six projects each, accounting for around 70% of project over-sight. Participation of member economies in projects is not recorded.

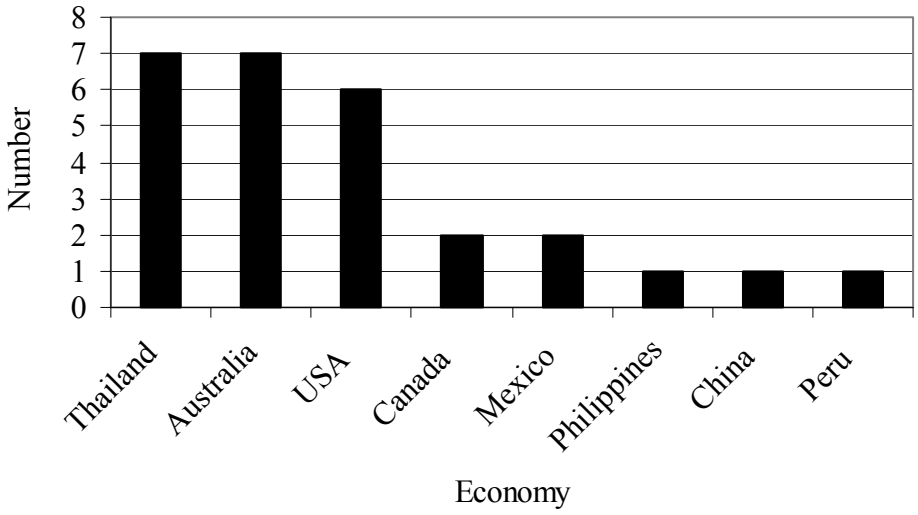


Figure 3: Projects Sponsored by APEC Member Economies

4.2 FWG Outputs

A summary of the outputs, as best can be determined from the APEC website, associated with each FWG project is presented in Appendix III. Three broad output categories are used:

1. Topic areas: five topic areas include tariffs, women, public health, aquaculture, and trade.

2. Communication of knowledge: specific activities include workshops, training sessions, conferences, organising a forum, and establishing and operating a network.
3. Production of knowledge: the range of activities includes, producing a manual, developing a database, conference proceedings, standards and guidelines, and research.

It is possible that three outputs can be attributed to each FWG project some may have less than three. The categorization relies on information contained in the APEC website and should be viewed as providing an indication of outputs. No evidence is available on the quality of the outputs.

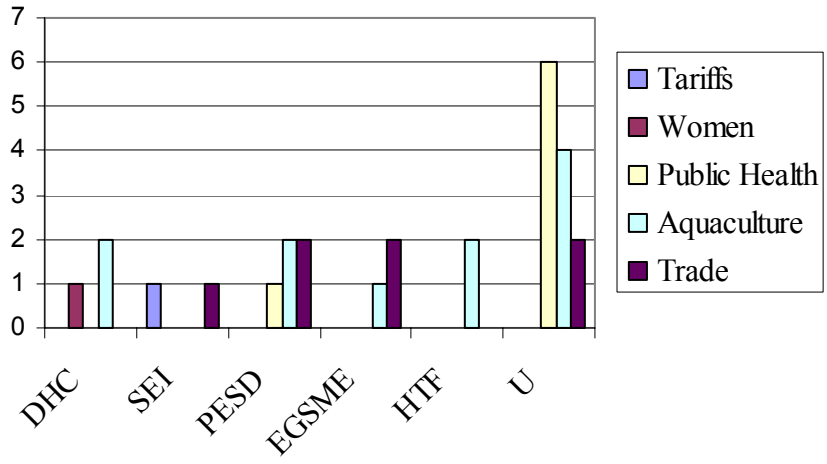


Figure 4: Topic Areas

Aquaculture, by far, has dominated FWG projects, being common to about 40% of the topics studied. Topics related to trade and public health, were common to about 25% of projects.

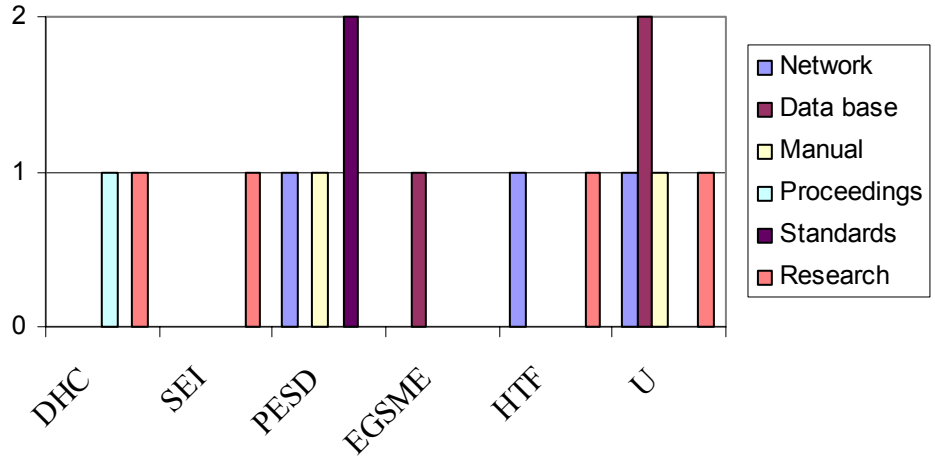


Figure 5: Production of knowledge

FWG projects contributed a total of 15 "production of knowledge" outputs. Research activity was most common (25%) closely followed by database and networking activity (20% each). Half of the projects in Appendix III have no academic or NGO links listed. It is difficult to ascertain the nature and extent involvement by universities, research institutions and NGOs.

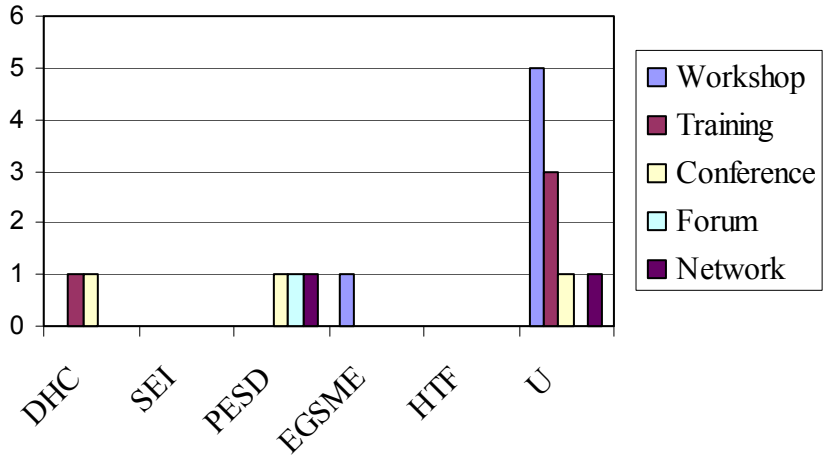


Figure 6: Communication of knowledge

With regard to "communication of knowledge", of the 16 outputs falling under this category, workshops were most commonly used (37%) followed by training sessions (25%).

4.3 Discussion and Conclusions

1. Since 1995, US$1.90 m has been allocated to 26 FWG projects. On average, 61% was operational, 18% TILF and 21% self-funded. The average level of funding was about US$73,000. This is not a large budget and expectations with respect to impact and performance must reflect this level of spending. If self-funding is removed, then the average is US$45,000 per project. Organizational costs, Secretariat costs, member economy costs, and so on, would need to be added to these data to get a more accurate estimate of the cost of FWG activities.
2. Bearing in mind the directions of the SOM in 1991, it is worth noting that only one project examined the economic costs and benefits of tariff removal. If progress is to be made on fisheries trade liberalization there needs to be an effort on quantitative analysis comparable to the effort that went into agriculture prior to the Uruguay Round. Other trade-related topics, especially inspection, standards and food safety, deserve attention from the FWG (Recommendation 4).
3. Only a very limited number of projects have focussed on problems of fisheries management, which, according to the FAO, is of increasing concern. Projects on fisheries management could focus on generic topics related to governance and management practices, and/or address regional issues arising from the management of common stocks and illegal fishing. Much could be gained by sharing experience derived from the variety of management systems that exist within APEC (Recommendation 4).
4. Relying on the FWG classification scheme proved not to be particularly useful. The fact that "unclassified" projects dominate other categories does not necessarily mean that these projects are unfocussed or not well aligned. Many "unclassified" projects are very relevant – for example, seafood inspection – to

fisheries development and trade. As a suggestion, the following classification might better label a project as well as reflecting the focus and priorities of the FWG:

- Aquaculture
- Trade
- Sustainability

Existing ECOTECH themes could easily be mapped into this classification. For example, "developing human capital" would easily span the above list (Recommendation 5).

5. The creation of knowledge was defined fairly liberally. About one-quarter of the projects involved research activity. Half of the projects listed links with universities, research institutes, and NGOs. The extent to which APEC study centres are involved is not clear (Recommendation 8).
6. Workshops are the most common instrument used to communicate knowledge.
7. In terms of topic areas, aquaculture has received most attention from FWG activities. This clearly aligns very well with the rapid growth in aquaculture occurring in APEC economies. However, trade and public health, both important to APEC economies, accounted for about 25% of the topic areas. Only one project was dedicated to studying role of women.

5. Summary and Recommendations

This report started with an over view of the structure of the FWG within the context of APEC, its aims and an outline of the decision making process used to advance FWG projects. The overview of APEC economies (Appendix I) and their fisheries was aimed at providing a context for the likely demand for projects. The supply of FWG outputs was measured and set alongside demand. This section attempts to address the balancing of "demand and supply" and identify how the activities of the FWG and its superior hierarchical fora can be modified to add further value vis-à-vis the overarching goals of ECOTECH and APEC.

5.1 Summary

1. Fisheries, wild capture and aquaculture, are of great economic, social and environmental importance to APEC economies. APEC economies account for over 50% of the world's wild capture fishery, some member economies lead the world in aquaculture development. Fish products are an important source of protein, and are heavily traded within and outside APEC. These facts alone are sufficient to justify a "fisheries working group" dedicated to the advancing the goals of ECOTECH.
2. Decision-making is devolved down to the FWG, provided activities are consistent with over-arching goals. Within these guidelines and constraints, there appears to be ample scope for FWG projects to contribute to the general goals and objectives as set by APEC ministers in general and the directives of the SOM in 1991.
3. The supply of project proposals for consideration at the annual FWG meetings most likely reflects, to varying degrees, the interests of particular officials and member economies. While some projects – say developing an inventory – are one-off - there is some evidence of projects building on each other over time. For example, a number of products have addressed various aspects of aquaculture development. The extent to which coherency over time can be achieved will depend to a large degree on the project overseer staying involved in the FWG.
4. Information supplied in project proposals is very comprehensive requiring the proposer to clearly identify aims, method, linkages, participation, co-funding, and communication of results. There appears to be little to recommend in terms of requiring additional information for project selection. Shortcomings appear to be at the point of what goes into the pool of projects coming before the FWG and what happens to the results when the project is completed.
5. There are at least three fora are relevant to achieving vertical coordination. (i) the SOM Committee of ECOTECH is responsible for advancing the effective implementation of key ECOTECH initiatives. SOM also assists Senior Officials with identifying initiatives for advancing cooperative activities. (ii) CTI provides a forum for trade related issues. (iii) EC is responsible for identifying economic trends and issues.
6. Coordinating activities across working group fora is achieved mainly through SOM directives that set the broad operational parameters for working group programs. Beyond this there are few instruments and incentives to coordinate activity and outputs. The APEC Secretariat achieves a degree of coordination through its website. But this activity is obviously *ex post* and the challenge would be to tap into latent synergies *ex ante*.

7. It is not possible to quantify the economic impact of FWG activities. Since 1995, US $1.90 m has been allocated to 26 FWG projects, an average of about US $73,000. Expectations with respect to impact and performance must reflect this level of spending.
8. Bearing in mind the directions of the SOM in 1991, it is worth noting that only one project examined the economic costs and benefits of tariff removal. Few projects have focussed on fisheries management.
9. Research activity is the most common means of producing knowledge. Research typically involves universities and research institutes.
10. In terms of topic areas, aquaculture has received most attention from FWG activities. This clearly aligns very well with the rapid growth in aquaculture occurring in APEC economies. Trade and public health, both important to APEC economies, accounted for about 25% of the topic areas. Only one project was dedicated to studying role of women.

5.2 Recommendations

1. Given the significance of fisheries in general, attempts to spread FWG activities over other working groups, or to incorporate FWG activities within other groups, will dilute its focus and lower value-added.

> *Recommendation 1: the FWG should not be assimilated into other fora. It should stay focused on fisheries.*

2. Within APEC, vertical coordination with higher-level fora, especially with respect to project identification *ex ante* and output extension *ex post*, is a major shortcoming. There is also considerable scope for improving FWG links beyond APEC (with international organizations such as FAO and regional fisheries management agencies). The strategic plan (Recommendation 6) and project output summaries (Recommendation 11) summary recommended below could provide a vehicle for improving linkages. However, the case for establishing links must be made otherwise the network will get too unwieldy.

> *Recommendation 2: there should be an effort to improve the links between the FWG and higher-level fora viz. ESC, CTI, and ECand the Secretariat; and international organizations.*

3. Information required in project proposals is satisfactory. It is important that the project proposal process remains streamlined, particularly if project assessment is done out of session. The preparation of projects should not become a barrier to entry by being overly onerous. Furthermore, the challenge facing the FWG is to appropriately signal project opportunities that are closely aligned with its strategic direction. At present the pool of proposals appears quite limited.

> *Recommendation 3: The FWG's strategy and work plan as suggested in recommendation 6, should be forward looking and signal the full range of projects that are aligned with its strategy.*

4. Beyond the APEC organization, the FWG should seek to plug gaps in areas not well served by larger and better-resourced organizations such as FAO and research institutes. International organizations, such as the FAO, and research institutes, including universities, have a huge comparative advantage in terms of funding and human capital. Gaps exist in the area of fisheries management, trade, health and safety. The FWG should seek to complement and not duplicate the work of other organizations. This of course does not preclude applying information produced by other organizations to projects focused on the APEC region.

> *Recommendation 4: Project proposals should identify gaps, especially in the areas of trade and fisheries management, and show how the proposed work will complement the work of other organizations.*

5. The project classification system should be changed to better reflect the activities and focus of the FWG. The existing system does not provide a coherent platform for integrating work and it does not assist with the communication of project outputs. The following classification system easily fits within existing ECOTECH themes.

> *Recommendation 5: the FWG classification system should be based on*
> - *Aquaculture*
> - *Trade*
> - *Sustainability*

6. The FWG should develop a "living" strategic plan along with a work plan for delivery. The strategy would incorporate views from other APEC groups, recognise the work going on in other working groups, and build on work being undertaken by other organizations and research providers. The ESC APEC Working Groups Coordination Meeting, held in Chile should be used as a model for advancing inter-working group discussions, collaboration and coordination. The strategy would help improve coordination across APEC groups as well as improve program coherence over time.

> *Recommendation 6: The FWG should prepare a publicly available strategic document outlining a plan of work, broadly defined, for the new 3-5 years. The document should be discussed at an ESC meeting of Lead Shepherds, re-visited at each FWG meeting and updated as new information and priorities come to hand.*

7. The FWG is dedicated to working within an area of obvious significance to APEC economies and their sustainable development. The FWG's operational budget is miniscule and attempts should be made to use core funding to get leverage for funding from the private sector. Involving the private sector, in areas such as development, processing and health standards, not only enriches the project output but it should also contribute to greater uptake.

Recommendation 7: private sector participation should be actively encouraged, perhaps by favourably weighting projects with private sector participation.

8. Most major universities within the APEC region have on-going programs that are relevant to the FWG. Moreover, these universities will have access to research funds and researchers that could complement the FWG's work program and augment the effectiveness of its outputs.

Recommendation 8: FWG should explore the possibility of developing collaborative linkage with APEC member research institutions, such as universities and research institutes. APEC study centers are one obvious avenue for achieving this.

9. A small number of projects have demonstrated a reasonably high level of end-user uptake but this would appear to be the exception rather than the rule. The extent of diffusion beyond this community is largely unknown. Furthermore, little is known about the uptake of research results by value-adding organizations including private sector firms, NGOs and government agencies. End-user buy-in, possibly through co-funding, should enhance the prospect of uptake.

Recommendation 9: demonstrable end-user links should be a necessary condition for funding. End-user linkages should be with on-going organisations including government agencies but more importantly NGOs, the research community and universities within APEC.

10. The (unusual) meeting of the FWG in Viet Nam provided an opportunity for experimentation. It was unusual because proposal assessments had been completed prior to the meeting allowing more time for review work in progress and to discuss working group strategy.

Recommendation 10: meetings of the FWG should focus on reviews of work in progress and the development of strategy. Project assessment should be undertaken out of session.

11. Communicating the results of FWG projects beyond officials and those participating in workshops, conferences, and training sessions, remains a major challenge.

Recommendation 11: A summary report should be filed with the Secretariat. A percentage of the budget could be withheld until the summary is submitted. The summary report should list project outputs and describe how they can be accessed. If the project involves a workshop or training session then the summary should identify the aims of the workshop, structure of the workshop, number of participants, participant origin, and material provided. The summary information can be listed on the APEC website and used by both FWG and BMC to monitor performance against strategy.

APPENDIX I: Characteristics of APEC Economies

Table 1 highlights the magnitude and range of macroeconomic indicators across APEC member economies. Average GDP per capita is US$10,927, ranging from US$418 to US$35,401. Variability is also evident in trade balance. The average trade deficit (exports less imports) is US$13 b, six economies ran a trade deficit and 15 ran a trade surplus.

Table 1: APEC Economies

Member Economy (Year Joined)	Area ('000 sq km)	Population (million)	Current Price GDP (US$bn)	Current GDP per capita (US$)	X-M (US$bn)
Australia (1989)	7,682	19.1	380	18,421	-3
Brunei Darussalam (1989)	6	0.3	4	12,344	2
Canada (1989)	9,971	30.8	717	22,691	14
Chile (1994)	757	15.2	76	4,315	1
China (1991)	9,561	1,275.1	1,080	919	23
Hong Kong, China (1991)	1	6.9	162	24,080	-28
Indonesia (1989)	1,904	212.1	152	676	29
Japan (1989)	378	127.1	4,765	37,299	54
Korea (1989)	99	46.7	462	8,918	9
Malaysia (1989)	333	22.2	90	3,891	14
Mexico (1993)	1,973	98.9	581	6,072	-10
New Zealand (1989)	271	3.8	51	13,111	0
Papua New Guinea (1993)	463	4.8	4	620	2
Peru (1998)	1,285	25.7	54	2,051	0
Philippines (1989)	300	75.7	75	926	-1
Russia (1998)	17,075	145.5	260	2,147	51
Singapore (1989)	1	4.0	93	20,738	6
Chinese Taipei (1991)	36	22.2	309	12,599	15
Thailand (1989)	513	62.8	122	1,825	3
United States (1989)	9,373	283.2	9,825	35,401	-449
Viet Nam (1998)	331	78.1	31	418	-3

Notes: Area and population obtained from: The Economist: Pocket World in Figures: 2003 Edition. Current Price (GDP); Current GDP per capita; Exports (f.o.b.); and Imports (c.i.f.) obtained from: The APEC Regional Trade and Investment 2002

Turning to economic growth the average rate of growth over the 1980-90 and 1990-1999 period was slightly over 4%, lower than the average recorded for East Asia and Pacific economies in 1990-1999. Eight APEC economies recorded growth above the average of 4.2%. In general, growth in agriculture's (which includes fishing sector) contribution to GDP is trending down.

Table 2: Average Annual Economic Growth

	GDP[a]		Agriculture	
	1980-90	**1990-1999**	**1980-1990**	**1990-1999**
Australia	3.50	4.10	3.40	3.00
Brunei Darussalam	-	-0.71[b]	-	-
Canada	3.30	2.70	2.00	1.00
Chile	4.20	7.20	5.90	1.10
China	10.10	10.70	5.90	4.30
Hong Kong, China	6.90	3.90	-	-
Indonesia	6.10	4.70	3.40	2.30
Japan	4.00	1.30	1.30	-1.60
Korea, Republic of	9.40	5.70	2.80	2.10
Malaysia	5.30	7.30	3.40	0.20
Mexico	1.10	2.70	0.80	1.60
New Zealand	1.70	3.10	3.80	2.70
Papua New Guinea	1.90	4.70	1.80	4.40
Peru	-0.10	5.00	3.00	5.60
Philippines	1.00	3.20	1.00	1.40
Russian Federation	-	-6.10	-	-7.90
Singapore	6.70	8.00	-6.20	0.40
Chinese Taipei	-	-	-	-
Thailand	7.60	4.70	3.90	2.50
USA	3.60	3.30	-	-
Viet Nam	4.60	8.10	4.30	4.90
Average	4.22	4.44	2.53	1.65
East Asia & Pacific	8.00	7.50	4.4	3.3

Source: World Development Indicators (2001)
Notes:
[a] Gross domestic product (GDP) at purchaser prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of products. The industrial origin of value added is determined by the International Standard Industrial Classification (ISIC). Agriculture includes ISIC divisions 1-5 and includes forestry and fishing.
[b] Average growth for 1991-2002 period.

On average females account for about 40% of the labour force, ranging from 30% to about 50%. However, in agriculture (which includes the fishing sector) the average is 13%, ranging from around 1% to 54%. In five APEC economies (Indonesia, Korea, Malaysia, Philippines and Thailand) female participation is above the average.

Table 3: Female participation in Labour Force

	Female Participation in Labour Force			
	% Labour Force	% Female Employment in Agriculture		
		1992	1997	Average[a]
Australia	42.88	3.8	3.6	3.62
Brunei Darussalam	34.39			
Canada	45.15	2.6	2.3	2.46
Chile	32.35	6.0	4.5	2.46
China	45.11			
Hong Kong, China	36.86	0.4	0.2	0.34
Indonesia	40.01	56.5	42.0	48.61
Japan	40.92	7.3	6.0	6.41
Korea, Republic of	40.69	18.3	13.2	15.20
Malaysia	37.13	20.1	14.2	16.51
Mexico	32.11		12.6	10.11
New Zealand	44.28	7.6	5.6	6.70
Papua New Guinea	41.85			
Peru	30.03	0.3	4.7	2.0
Philippines	37.38	31.7	28.4	29.89
Russian Federation	48.74		7.9	7.73
Singapore	38.98	0.1	0.2	0.10
Chinese Taipei				
Thailand	46.40	62.1	51.5	54.61
United States of America	45.41	1.3	1.5	1.42
Viet Nam	49.18			
Average	40.49	15.57	12.40	13.19

Source: World Bank Development Indicators (2001)
Note: [a] Average based on data available over 1991-2002 period.

Two concepts of equity are commonly used in policy analysis. Outcomes concepts of equity are concerned with the existence in aggregate of variation in the shares that individuals receive. Process concepts of equity are concerned with whether the rules and methods of distributing the shares among individuals are fair. Gini coefficients provide a measure of outcome equity. The Gini index provided by the World Bank (2001) measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. Thus a Gini index of zero represents perfect equality, while an index of 100 implies perfect inequality. Gini coefficients for APEC economies are presented in Table 4. The average Gini coefficient is 40.49, with a range from 30.03 to 49.18.

Table 4: Gini Coefficients

Economy	Gini Coefficients
Australia	42.88
Brunei	34.39
Canada	45.15
Chile	32.35
China	45.11
Hong Kong, China	36.86
Indonesia	40.01
Japan	40.92
Korea, Republic of	40.69
Malaysia	37.13
Mexico	32.11
New Zealand	44.28
Papua new Guinea	41.85
Peru	30.03
Philippines	37.38
Russian federation	48.74
Singapore	38.98
Thailand	46.40
United States of America	45.41
Viet Nam	49.18
Average	40.49

Source: World Bank Development Indicators (2001)

APPENDIX II: Project Application Details

APEC PROJECT FORMAT

Facesheet

<table>
<tr><td colspan="2">Project number:
(To be filled in by Secretariat:)</td><td colspan="2">Date received by Secretariat:</td></tr>
<tr><td colspan="4">Name of Committee/Working Group:</td></tr>
<tr><td colspan="4">Title of Project:</td></tr>
<tr><td colspan="4">Proposing APEC Economy:</td></tr>
<tr><td colspan="4">Co-sponsoring APEC Economy (ies)</td></tr>
<tr><td colspan="4">Project Overseer: Name, Title and Organization (M/F)</td></tr>
<tr><td colspan="3">Postal address:</td><td>Tel: Fax: Email:</td></tr>
<tr><td>Financial Information</td><td colspan="2">Total cost of proposal (US$):</td><td>Amount being sought from APEC Central Fund</td></tr>
<tr><td colspan="4">Type of Project: [√] seminar/symposium [ ] short-term training course [ ] survey or analysis and research [ ] database/website [ ] others (Please specify)</td></tr>
<tr><td colspan="2">Project start date:</td><td colspan="2">Project end date:</td></tr>
<tr><td colspan="4">Brief description of Project : its purpose and the principal activities (including when and where)</td></tr>
<tr><td colspan="4">Signature of Project Overseer:
(Separate written confirmation acceptable for email submission) Date:</td></tr>
<tr><td colspan="4">Signature of Committee Chair/WG Lead Shepherd: (Not applicable to Progress Report and Evaluation Report)
(Separate written confirmation acceptable for email submission) Date:</td></tr>
</table>

ECOTECH Weightings Matrix

Criteria	Supporting Information (indicate paragraph number if details are in the project proposal)	Linkage (1 point per criterion)
Responds to a specific instruction from Leaders/Ministers *1*	Paragraph 2	1
Meets a core ECOTECH theme under the Manila Declaration *1*	Paragraph 2	1
Responds to the Common Policy Concepts, Activities and Dialogues identified in Part II of the Osaka Action Agenda *1*	Paragraph 2	1
Responds to a specific ECOTECH Initiative *2*	Paragraph 2	1
Improves skills, including in new technologies	Paragraph 1	1
Builds capacity and strengthens institutions	Paragraph 4 and 6	1
Measurably improves economic efficiency/performance *3*	Paragraph 4 and 5	1
Is of practical benefit to the private/business sector; has private/business sector participation; and/or funding *4*	Paragraph 4 and 6	1
Assists economies attain sustainable growth and equitable development, while reducing economic disparities among APEC economies and improving economic and social well-being	Paragraph 2, 4 and 5	2
Supports a TILF objective, as laid down in Part I of the Osaka Action Agenda *1*		
Disseminates information including through seminars/websites/databases *5*	Paragraphs 11	
Outline the outcome and how members will benefit *5*	Paragraphs 4 and 5	
	Net Score (Maximum = 12)	10

Footnote

1 Identify which instruction/ECOTECH theme/OAA element.

2 See http://www.apecsec.org.sg/ECOTECH/index.html

3 Policy outcomes that include development of energy efficiency guidelines, food safety standards etc

4 One point for each element up to a maximum of 3 points.

5 Not scored

Remarks *(Please indicate if not applicable e.g., for TILF projects. Additional information in support of projects which do not score as highly as a lower-ranked project may also be provided here by the Lead Shepherd/Chair).*

Details of the Project Proposal

Please provide your answers in point form or as succinctly as possible below each paragraph heading.

Project Objectives

1) Describe briefly the objectives and how you will measure your results (in the short and longer term) to know if your project has been successful. (You must provide detailed assessment measures in paragraph 22)

2) How, briefly, does this project respond to the priorities set by APEC Leaders and Ministers, Please make reference to the relevant parts of the APEC Action Agenda including Action Program, work plan, vision statement, and policy statement that relate to this project.

3) For applications under the TILF Special Account: How briefly this project contributes to APEC Trade and Investment Liberalisation and Facilitation (e.g. relevance to specific parts of the Osaka Action Agenda).

Linkages

4) Who are the intended beneficiaries in member economies of the project. Highlight the direct benefits to the institutions / the types of business in member economies that will benefit from the results of the project and what the direct benefits are.

5) Describe the deliverables of the project and demonstrate how they will meet the needs of the targeted beneficiaries.

6) How the participation of the business/private sector and non-governmental institutions has been sought or will be sought. Illustrate how the business/private sector has been involved in the planning and delivery of the project and whether any other APEC fora have been consulted.

Methodology

*9) A concise description of the project's methodology by components, with its associated outputs clearly specified. (*For a research project this may include the means and timescale for the collection and analysis of data and how this analysis will be disseminated; for a capacity building project it may include the preparation of the teaching materials and the dates of holding the courses and any provision for the compilation of a report; etc*).*

10) The number of APEC member economies that will participate in this project. Please indicate the names of member economies participating in each component of the project as set out in (9).

Dissemination of Project Output

11) A plan for the publication and dissemination of the results of the project, including:
a. the nature of the target audience;
b. the form and content;
c. format (e.g. hard copies, floppy discs, internet uploading);
d. number of copies for the publication;
e. a publicity plan for:

i) briefing the general or specialist media about key components of the project;
ii) the promotion of sales or other dissemination of the final product; and
f. a budget for publication and dissemination, to form part of the itemized budget.

Gender Concerns

12) Show how the objectives of the project provide benefits for women, where appropriate. APEC Ministers have indicated (*Framework for the Integration of Women in APEC*) that benefits might include: increased involvement of women; taking account of the differences in women's and men's lives (gender analysis); and collection/use of sex-disaggregated data.

13) Show how the participation of women has been/will be sought. Show how women are involved in the planning, management, allocation of resources, and implementation of the project.

14) Provide a brief description of the way women will be able to participate equitably in the development and implementation of the project.

15) Provide a brief description to show that the project will collect and use sex-disaggregated data (if available) to measure the project's effects on women.

16) Does the plan for the publication and dissemination of the project's results include communication methods that are appropriate for women? Questions that may be relevant include: Are women one of the target audiences? Does the plan take account of women with low literacy and women with low access to electronic media? Will the results be disseminated to women's organizations?

17) Where appropriate, provide details of the project's budget that are allocated to activities that address the specific needs of women.

18) Provide details of how the project proponent will assess whether he/she has met the gender criteria for APEC projects and how he/she will measure the impact of the project on women.

Budget

19) An itemized budget for the project in the prescribed format. Applications under the Operational Account should use the format at *Annex A1*. The budget should illustrate the assumptions adopted (e.g. unit costs) for the computations.

20) A timetable for the drawdown of APEC funding requested for the project, including details of any advance payment or instalment payment requested and justifications for such requests.

21) Details of any request for waiver or exception from the normal APEC financial rules with justifications. (*Examples are from tendering requirements; for advance payment; for early disbursement (for TILF projects to begin before the receipt of the TILF contribution , normally in June); for government officials to receive funding; for active participants from travel-eligible economies to receive per diems*).

Assessment of Project

22) With reference to your objectives stated in paragraph 1, provide detailed criteria (quantitative and qualitative) for how you will measure your results in the short and long term to know if your project has been successful. State your current benchmarks for measurement, your target results from the project for each measurement criterion and the range of acceptable results both in numerical and percentage terms, where possible.

APPENDIX III: APEC Fisheries Working Group Projects

(A) Developing Human Capital

Collaborative Aquaculture Education Program

Project Number	FWG 02/1999
Project Overseer	Glenn Hurry, Australia
Objectives	1. Prepare strategy and pilot for cooperative education program. 2. Adequately train critical mass of middle level managers and technicians in the science of aquaculture.
Approach	Develop a common collaborative approach to aquaculture education and training. Investigate the potential to develop a network of aquaculture training institutions and agencies. Network will provide the method of delivery.
Expected Output	Strategy for implementation of cooperative education program and design of framework for a pilot program.
Expected Benefit	Allow economies access to a common level of aquaculture education and training.
Academic/NGO links	Yes
ECOTECH theme	Primary: Developing human capital Secondary: Promoting environmentally sustainable development
Other for a	MRC
Funding	Operational: US$83,800 TILF: 0 Self-funded: US$5,000 Total : US $88,800.00 Actual start: 6/1998 Actual end: 6/1999
Outputs	Project complete. Reports and papers presented out of session to APEC member economies. Reports and papers not held in APEC database. **Output keys:** training, aquaculture

Women in Aquaculture

Project Number	FWG 03/1999
Project Overseer	Glenn Hurry, Australia
Objectives	1. Define and describe the role played by women and the potential opportunities available 2. Look at a method to develop education and training to raise education levels of women 3. Propose a strategy that will allow FWG to decide how to best promote and contribute to involvement of women in aquaculture
Approach	Focus on rural women in inland and coastal communities in six South East Asian economies
Expected Output	Report that proposes a strategy that will allow FWG and economies how to best promote and contribute to the involvement of women
Expected Benefit	Enhancing role of women, alleviate constraints to participation, contribute to rural development.
Academic/NGO links	Yes
ECOTECH theme	Primary: Developing Human Capital Secondary: Promoting Environmentally Sustainable Development
Other for a	Not listed
Funding	Operational: US$53,850 TILF: US$0 Self-Funded: US$5,000 Total: US $ 58,850.00 Expected start: 10/98 Actual end: 1/2001
Outputs	Publication: *Women in Aquaculture*, Brugere, C. *et al.* Pp 48. **Output keys:** research publication, aquaculture

Sharing Knowledge During the International Conference on Governance of Deep-Sea Fisheries

Project Number	FWG 02/2003
Project Overseer	Mr Paul Castillo, Peru
Objectives	1. Participate in International Conference in NZ where APEC experts will share knowledge on deep-water fish and fisheries. 2. Contribute on a regional deep water fish and fisheries network among APEC member and fisheries development institutions.
Approach	Facilitate sharing of knowledge through conference participation.
Expected Output	Conference report, case studies, recommendations and actions.
Expected Benefit	Supports objective of maximising economic benefits. Facilitate close relationships among APEC members. Provide up to date research and information.
Academic/NGO links	NA
ECOTECH theme	Primary: Developing human capital Secondary: Harnessing technologies for the future
Other for a	MRC
Funding	Operational: US $43,000 TILF: US $0 Self funded: US $0 Total: US $43,000 Actual start: 2/2003 Expected end: 1/2004
Outputs	In progress. **Output keys:** conference, conference publication.

(B) Strengthening Economic Infrastructure

Free Trade and Investment in the Fisheries Sector of the Asia-Pacific Region: An Economic Analysis of Tariffs

Project Number	F98/CP/00267
Project Overseer	Mr Ken Roeske, Canada
Objectives	Economic analysis outlining the costs and benefits of tariff removal in the APEC fisheries sector.
Approach	Development and application of a trade liberalization model.
Expected Output	Report that analysis the qualitative and quantitative economic effects of tariff removal on fish and seafood products in APEC.
Expected Benefit	Assist policy- makers and government officials of member economies implementing the policy agenda for the fisheries sector as they relate to liberalization and facilitation of trade and investment.
Academic/NGO links	Not listed.
ECOTECH theme	Strengthening economic infrastructure
Other for a	Not listed.
Funding	Operational: US $0 TILF: US $75,000 Total: US $75,000
Outputs	Project complete. *Free Trade and Investment in the Fisheries Sector of the Asia-Pacific region: an Economic Analysis of Tariffs*, Global Economics Ltd, August 1, 1999, Pp. 79. **Output keys**: Research publication, trade liberalisation.

(C) Promoting Environmentally Sustainable Development

APEC Aquaculture Forum

Project Number	FWG 01/1998
Project Overseer	Mr Glen Hurry, Australia
Objectives	1. Establish an APEC Aquaculture Forum within the APEC Fisheries Working Group. 2. To ensure sustainable long term development of aquaculture within APEC region
Approach	Forum
Expected Output	Not listed.
Expected Benefit	Increased sharing of information relating to aquaculture, cooperative measures to address important regional issues, improved understanding of aquaculture.
Academic/NGO links	Business, academics, and NGOs.
ECOTECH theme	Promoting environmentally sustainable development.
Other for a	Not listed.
Funding	Operational: US $19,388.00 TILF: US $ 0 Self US$ 10,000.00 Total: US $ 29,388.00 Actual start: 6/1998 Actual end: 6/1998
Outputs	Project complete. **Output keys:** forum, aquaculture

Collaborative APEC Grouper Research and Development Network

Project Number	FWG 01/1999
Project Overseer	Paula Shoulder, Australia
Objectives	1. Develop regional research network to establish a sustainable grouper aquaculture industry. 2. Provide alternative source of income to people using dangerous and illegal fishing methods. 3. Protect endangered refs and reef fish. 4. Reduce reliance on wild capture fisheries.
Approach	Regional survey of current practices for grouper mariculture.
Expected Output	Establish a process that will facilitate greater involvement in cooperative regional research and development of grouper aquaculture.
Expected Benefit	Development of sustainable grouper aquaculture, elimination of dangerous practices, building human capital, effective means of conducting research.
Academic/NGO links	Not listed.
ECOTECH theme	Promoting environmentally sustainable development
Other for a	Not listed
Funding	Operational: US$ 80,480.00 TILF: US $ 0 Self-funded: US$ 20,000.00 Start: 3/1999 End: 1/2002
Outputs	Project complete. **Output keys:** network, aquaculture

Management of Marine Algal Toxins in Seafood Products in the APEC Region

Project Number	FWG 02/2001
Project Overseer	Dr Sherwood Hall, USA
Objectives	1. Strengthen and facilitate trade in seafood products within APEC. 2. Improve public health protection.
Approach	Survey and research
Expected Output	Second conference on Harmful Algae Management and Mitigation (HAMM) guidelines, HAMM websites and network of scientific experts on marine biotoxins.
Expected Benefit	Strengthen and facilitate trade. Public health protection.
Academic/NGO links	International and regional NGOs, business involvement.
ECOTECH theme	Promoting environmentally sustainable development
Other for a	MRC
Funding	Operational: US $ 38,000.00 TILF: US $ 0 Self-funded: US $0 Total: US$ 38,000.00 Expected start: 2/2001 Actual End: 6/2003
Outputs	In progress. **Output keys:** public health guidelines, trade

Developing Industry Standards for the Live Reef Food Fish Trade

Project Number	FWG 02/2002
Project Overseer	Mr Stetson Tinkham, USA
Objectives	1. Initiate consultative process among APEC members and participants in the liver reef food fish industry. 2. Develop draft set of industry standards for the live reef fish trade (LRFT).
Approach	Builds on Nature Conservancy survey and recommendations of other APWEC fora.
Expected Output	1. Draft set of industry standards. 2. Recommendations on implementation of industry standards. 3. Information and material to assist members develop national policies.
Expected Benefit	Benefit to institutions and actors depending of live reef fish trade, and to member economies.
Academic/NGO links	Yes
ECOTECH theme	Promoting environmentally sustainable development
Other for a	NA
Funding	Operational: US$ 86,413.00 TILF: US $ 0 Self-funded: US$ 163,000.00 Total: US$ 249,413.00 Actual start: 7/2001 Actual End: 6/2003
Outputs	In progress. Output keys: standards, trade

The Impact of Longline Fishing and a Review of Mitigation Measures

Project Number	FWG 02/1998
Origins	Not listed
Project Overseer	David Cox, Australia
Objectives	1. Study the cost effectiveness of mitigation methods that have been adopted or proposed. 2. Determine scope and value of longling and associated by-catch.
Approach	Not described.
Expected Output	Not listed.
Expected Benefit	Ability to assess impact of longlining on environment and analyse effectiveness and costs of mitigation. Assist with selection of best practices.
Academic/NGO links	Not listed
ECOTECH theme	Promoting environmentally sustainable development.
Other for a	NA
Funding	Project cancelled.
Outputs	NA

Development of a Health and Husbandry Manual for Grouper Farming

Project Number	FWG 01/2000
Project Overseer	Ms Cecilia Reyes, Philippines
Objectives	1. Facilitate development of sustainable grouper aquaculture industry. 2. Provide alternative income and employment to those using dangerous and illegal practices. 3. Protect endangered reefs and fish. 4. Develop new aquaculture industry. 5. Reduce reliance on wild caught fingerlings.
Approach	Not listed.
Expected Output	Manual prepared and distributed to participants.
Expected Benefit	Help meet commitments of Osaka Agenda and lead to sustainable production.
Academic/NGO links	Not listed.
ECOTECH theme	Promoting environmentally sustainable development.
Other for a	Not listed
Funding	Operational: US $59,000 TILF: US $0 Self-funded: US $0 Total: US $59,000 Expected start 2/2000 Expected end: 12/2000
Outputs	In progress. *Husbandry and Health Management of Grouper*, APEC Singapore and SEAFDEC, Ililo, Philippines, Pp. 94. **Output keys:** Manual, aquaculture

Derelict Fishing Gear and related Debris: An Educational Outreach Seminar Among APEC Partners

Project Number	FWG 03/2003
Project Overseer	Mr Colin McIff, USA
Objectives	1. Provide participants with information on problem of derelict fishing gear and related debris. 2. Examine ways in which problem arises and examine best practices. 3. Review regulatory and infrastructure mechanisms. 4. Identify gaps and obstacles to mitigating gear loss.
Approach	Seminar/symposium.
Expected Output	Exchange of scientific and regulatory information. Opportunity for participants to review approaches.
Expected Benefit	Raise awareness, provide information, discussion of management.
Academic/NGO links	NGOs, universities, research centres, business.
ECOTECH theme	Primary: Promoting environmentally sustainable development. Secondary: Harnessing technologies for the future.
Other for a	Not listed
Funding	Operational: US$ 17,500 TILF: US $0 Self-funded: US$0 Total: US$ 17,500 Expected start: 2/2003 Expected end: 11/2004
Outputs	In progress. **Output keys:** seminar, management

(D) Encouraging the Growth of SMEs

APEC Seafood Information System

Project Number	FWG 01/1999T
Project Overseer	Ken Roeske, Canada
Objectives	1. Develop a pilot system for an integrated commercial marketing information service for fishing, aquaculture and fish processing. 2. Improve and build upon GLOBEFISH and FAO Regional Marketing Advisory Services. 3. Develop information service that focuses on needs of SMEs in fisheries sector.
Approach	Pilot project to test the feasibility of improving the market and industry information service provided by GLOBEFISH and FAO
Expected Output	Development of an integrated commercial marketing information service for fishing, aquaculture and fish processing industries.
Expected Benefit	Direct benefit to trade associations, NGOs, government organisations by providing a one-stop comprehensive and current information service.
Academic/NGO links	Business and major fisheries associations
ECOTECH theme	Primary: Enhancing the growth of SMEs
Other for a	Not listed
Funding	Operational: US $0 TILF: US $84,005 Self-funded: US $ 0 Total: US $84,005 Expected start: 5/1999 Expected end: 4/2001
Outputs	Project complete. No output available on website. **Output keys:** data base, trade.

Current Situation and Market perspectives for Aquaculture Products

Project Number	FWG 01/2003T
Project Overseer	Mr George Llanos, Peru.
Objectives	1. Conduct a three-day workshop to review knowledge, analyse future trends. 2. Disseminate information on aquaculture markets.
Approach	Workshop based on survey, research and analysis.
Expected Output	Report of Proceedings.
Expected Benefit	Business, NGOs, fishers and communities. Government for policy development.
Academic/NGO links	Academic, business and NGOs.
ECOTECH theme	Encouraging growth of SMEs
Other for a	Not listed
Funding	Operational: US$ 68,140 TILF: US $ 0 Self-funded: US$0 Total: US$ 68,140 Expected start: 6/2003 Expected end: 12/2003
Outputs	In progress. **Output keys**: workshop, aquaculture trade

(E) Harnessing Technologies for the Future

Collaborative APEC Grouper Research and Development Network

Project Number	FWG 01/2001
Project Overseer	Matthew Dadswell, Australia
Objectives	1. Develop the capacity to establish a sustainable grouper industry 2. Provide alternative sources of income to people engaging in dangerous and illegal practices 3. Protect endangered reefs and reef fish 4. Develop new aquaculture industry with export potential. 5. Reduce reliance on wild capture fisheries.
Approach	Not listed
Expected Output	Maintain APEC/NACA website. Research results presented to grouper workshop. Advertising grouper website.
Expected Benefit	Development of sustainable grouper aquaculture, elimination of dangerous practices, building human capital and providing effective means of conducting research. Facilitation of staff exchanges.
Academic/NGO links	Existing linkages with APEC/NACA and regional research centres and institutes.
ECOTECH theme	Harnessing technology for the future
Other for a	MRC
Funding	Operational: US$ 89,000 TILF: US $ 0 Self-funded: US$35,000 Expected start: 7/2000 Actual End: 3/2003
Outputs	Project complete **Output keys:** website, aquaculture.

Farming the Reef: A State-of-the-Art Review of Aquaculture of Coral Reef Organisms in Tropical Nearshore Environments

Project Number	FWG 04/2001
Project Overseer	Stetson Tinkhman, USA
Objectives	1. Provide overview of global trade in live reef organisms 2. Review the biology and technology for aquaculture of reef species 3. Analyse the bioeconomics and markets. 4. Evaluate the potential of aquaculture to reduce the incidence of over fishing wild caught species. 5. Present policy recommendations.
Approach	Survey, research.
Expected Output	Publications for industry and academic audiences.
Expected Benefit	Bring together best information and knowledge about the above aquaculture.
Academic/NGO links	Academic groups, national NGOs and businesses involved in above.
ECOTECH theme	Primary: Harnessing technology for the future. Secondary: Promoting environmentally sustainable development.
Other for a	MRC
Funding	Operational: US$ 96,135 TILF: US $ 0 Self-funded: US$ 76,000 Total: US $ 172,135 Expected start: 8/2000 Actual end: 7/2002
Outputs	Project complete. Outputs not available. **Output keys:** research, aquaculture.

(F) Unclassified Projects

Health Quality Rules of Fish and Fishery Products

Project Number	FWG 01/1995
Project Overseer	Ms. Sirilak Suwanrangsi, Thailand.
Objectives	1. Promote transparency of fish inspection measures. 2. Upgrade competency of fish inspectors to reach recognised standard. 3. Coordinate inspection efforts.
Approach	Organise a technical workshop on quality assurance in fish inspection laboratory.
Expected Output	Technical workshop.
Expected Benefit	Promote good laboratory practices.
Academic/NGO links	Private sector involvement
ECOTECH theme	Not listed
Other for a	Not listed
Funding	Operational: US $0 TILF: US $28,750 Self-funded: US $0 Total: US$28,750 Expected start: 1/1995 Actual end: 12/1996
Outputs	Project complete. *Who is Who in Fish Inspection of APEC Economies, 1995*, APEC #95-FS-02.2, ISBN 981-00-7376-3. **Output keys:** workshop, standards.

Project Number	FWG 02/1995 (identical to FWG 01/1995, except that it ended 4/1996)

Training workshop on sustainable shrimp culture with emphasis on health management and control

Project Number	FWG 03/1995
Project Overseer	Sithi Boonyarataphalin, Thailand
Objectives	1. Strengthen and promote investment 2. Promote health management and disease control measures compatible with protection of environment 3. Sustainable development of shrimp aquaculture
Approach	Provide a training workshop that provides participants with technical knowledge, learn concepts and observe practices of shrimp aquaculture, recommend improvements and identify opportunities for technical and economic collaboration.
Expected Output	Not listed
Expected Benefit	Consistent with the objectives outlined in the Seoul Declaration in relation to sustainable growth and development. Provide direct benefits to shrimp farmers and provide governments with policy guidelines. Enhance production and trade in higher quality products.
Academic/NGO links	Not listed
ECOTECH theme	Not listed
Other for a	Not listed
Funding	Operational: US $31,188 TILF: US $0 Self-funded: US $0 Total: US $31,188 Expected start: 1/1995 Actual end: 12/1996
Outputs	Project complete. **Output Keys**: training, aquaculture.

Project Number	FWG 01/1996
Project Overseer	Mr Sun Shengzhi, People's Republic of China
Objectives	1. Produce an inventory of fishery administration and organization of APEC members. 2. Facilitate coordination and cooperation among fishery agencies and organizations
Approach	Not described
Expected Output	Inventory of organizations and administration
Expected Benefit	Further APEC objectives as in Seoul declaration
Academic/NGO links	Not listed
ECOTECH theme	Not listed
Other for a	Not listed
Funding	Operational: US $10,700 TILF: US $0 Self-funded: US $0 Total: US $10,700 Actual start 1/1996 Actual end: 12/1996
Outputs	Project complete. *Inventory of Fisheries Administration and Organizations in APEC*, 1997, APEC#97-FS-02.1, ISN 981-00-9906-1. **Output keys:** inventory.

Moving Toward Improved Seafood Inspection Regimes

Project Number	FWG 02/1996
Project Overseer	Matteo Milazzo
Objectives	1. Enhance overall safety and quality of seafood products 2. Facilitate trade by improving access to markets governed by HACCP-based inspection 3. Make better use of wild capture and aquaculture seafood
Approach	Organise and conduct a series of training sessions in seafood inspection procedures based on the Hazard Critical Control Point (HACCP) approach
Expected Output	Not listed
Expected Benefit	Promote the goals of APEC, trade-related benefits to both consumer and producer members.
Academic/NGO links	Not listed
ECOTECH theme	Not listed
Other for a	Complements CTI work on standards
Funding	Operational: US$ 80,300 TILF: US$ 0 Self-funded: US$ 0 Total: US$ 80,300 Actual start: 1/1996 Actual end: 12/1998
Outputs	Project complete Reports not available on website. Unable to assign following report to project: *APEC Air Shipment of Live and Fresh Fish and Seafood Guidelines*, APEC #98-FS-03.1, ISBN 0-9669316-0-2. **Output keys:** training sessions, public health.

Project Number	FWG 03/1996 (note similarity with FWG 01/1995)
Project Overseer	Ms Sirilak Suwanrangei, Thailand
Objectives	1. Promote transparency of fish inspection measures. 2. Upgrade competency of fish inspectors to reach recognised standard. 3. Coordinate inspection efforts.
Approach	Organise workshop on fish inspection system with Australia and New Zealand.
Expected Output	Not listed.
Expected Benefit	Promote transparency, knowledge of new initiatives by importing economy
Academic/NGO links	Not listed.
ECOTECH theme	Not listed.
Other for a	Not listed.
Funding	Operational: US $25,000 TILF: US $0 Self-funded: US$0 Actual start: 1/1996 Actual end: 12/1996
Outputs	Project complete Report not available on website. **Output keys:** workshop, public health.

Project Number	FWG 04/1996
Project Overseer	Sirilak Suwanrangsi, Thailand
Objectives	1. Promote exchange of information and technical development on processing, handling and quality control 2. Enhance regional cooperation 3. Upgrade competence of government fish inspectors and private fish processing industry
Approach	Organise a technical conference Provide advice on standards and regulation
Expected Output	Not listed.
Expected Benefit	Exchange of information on new technology on fish processing and inspection. Benefit to both private and government sectors
Academic/NGO links	Not listed
ECOTECH theme	Not listed
Other for a	Not listed
Funding	Operational: US $25,000 TILF: US $0 Self-funded: US $0 Total: US $25,000 Actual start: 1/1996 Actual end: 12/1996
Outputs	Project completed. **Output keys:** conference, public health.

Development of a Regional Research program on grouper Virus Transmission and Vaccine Development

Project Number	FWG 02/2000
Project Overseer	Mr Sataporn Direkbusarakom, Thailand
Objectives	1. Establish a regional research network to facilitate development of a sustainable grouper aquaculture industry. 2. Plan a strategy to address regional fish health issues.
Approach	Workshops
Expected Output	Workshop reports, scientific papers and regional extension documents.
Expected Benefit	Sustainable production and enhance long-term trade.
Academic/NGO links	Academic/NGOs such as NACA/OIE and FAQ.
ECOTECH theme	Not listed
Other for a	Not listed
Funding	Operational: US $42,100 TILF: US $0 Self-funded: US $0 Total: US $42,100 Expected start: 1/2000 Actual end: 10/2000
Outputs	Project complete. Published outputs not available on website. **Output keys:** workshop, aquaculture.

Joint APEC/FAO/NACA Ad hoc Expert Consultation on Trans-boundary Aquatic Animal Pathogen Transfer and the development of Harmonised Standards on Aquaculture Health Management

Project Number	FWG 03/2000
Project Overseer	Mr Mara Murillo Correa, Mexico
Objectives	1. Develop a regional research programme on grouper virus and vaccine development. 2. Development of a health and husbandry manual for grouper farming.
Approach	Not listed.
Expected Output	Health and husbandry manual for grouper.
Expected Benefit	Basis for new proposals focusing on aquatic animal disease control, diagnostic techniques, import risk analysis.
Academic/NGO links	Not listed.
ECOTECH theme	Not listed.
Other for a	Not listed.
Funding	Operational: US $55,900 TILF: US $0 Self-funded: US $18,000 Total: US $73,900 Expected start: 1/2000 Actual end: 12/2000
Outputs	Project completed. *Trans-Boundary Aquatic Animal Pathogen Transfer and the Development of Harmonized Standards on Aquaculture health Management,* PEC#201-FS-01.1, ISBN 974-7313-27-8. **Output keys**: workshop, aquaculture.

APEC Seafood Information System (SIS) – Phase 2

Project Number	FWG 01/2001T
Project Overseer	Mr Ken Roeske, Canada
Objectives	1. Pilot project to test feasibility of improving and expanding services provided by GLOBEFISH and the FAO.
Approach	Not listed.
Expected Output	Computerised cooperative database covering fisheries sector.
Expected Benefit	Not listed.
Academic/NGO links	Not listed.
ECOTECH theme	Not listed.
Other for a	Not listed.
Funding	Operational: US $0 TILF: US $85,000 Self-funded: US$0 Total: US $85,000 Expected start: 5/2001 Expected end: 14/2002
Outputs	Project in progress **Output keys:** data base, trade.

APEC Project for the Conservation and Management of Sharks

Project Number	FWG 03/2001T
Project Overseer	Stetson Tinkham
Objectives	1. Identify the need for collaboration and technical cooperation in implementation of FAO IPOA. 2. Collect data for assessment of shark population for sustainable use.
Approach	Not listed.
Expected Output	Not listed.
Expected Benefit	Provide tools to implement national assessment of stocks and to minimise waste and discards.
Academic/NGO links	Not listed.
ECOTECH theme	Not listed.
Other for a	Not listed.
Funding	Operational: US $0 TILF: US $91,070 Self-funded: US $0 Total: US $91,070 Expected start: not listed. Expected end: 11/2002
Outputs	Project in progress Musick, J.A. and R. Bonfil. 2003. *Elasmobranch Fisheries Management Techniques*, (draft). **Output keys:** research, management.

Project Number	FWG 01/2002
Project Overseer	Dr Maitree Duwangsawasdi, Thailand.
Objectives	1. Organize training courses on IRA for aquatic animals 2. Develop manual for IRA for aquatic mammals. 3. Establish a network of IRA users 4. Facilitate exchanges.
Approach	Short term training.
Expected Output	Training officials on how to do IRA. Manual on IRA. Networking.
Expected Benefit	Development of national policies that will improve aquaculture production. Facilitate exchange of information. Benefit to rural farmers and business sector.
Academic/NGO links	NACA
ECOTECH theme	Not listed.
Other for a	Not listed.
Funding	Operational: US $116,500 TILF: US $ 0 Self-funded: US$ 39,000 Total: US $155,500 Expected start: 5/2002 Actual end: 5/2003
Outputs	In progress. **Output keys:** Training, manual.

APPENDIX IV: Project Themes and Output Keys

Project	Primary FWG Theme	Output Keys
FWG 01/1995	U	Workshop, public health
FWG 02/1995	U	Workshop, public health
FWG 03/1995	U	Training, aquaculture
FWG 01/1996	U	Inventory
FWG 02/1996	U	Training, public health, trade
FWG 03/1996	U	Workshop, public health
FWG 04/1996	U	Conference, public health
FWG 01/1998	PESD	Forum, aquaculture
FWG 02/1998T	SEI	Research, tariffs, trade
FWG 01/1999	PESD	Network, aquaculture
FWG 01/1999T	EGSME	Data base, trade
FWG 02/1999	DHC	Training, aquaculture
FWG 03/1999	DHC	Research, women, aquaculture
FWG 01/2000	PESD	Manual, aquaculture
FWG 02/2000	U	Workshop, network, aquaculture
FWG 03/2000	U	Workshop, public health, aquaculture
FWG 01/2001	HTF	Network, aquaculture
FWG 01/2001T	U	Data base, trade
FWG 02/2001	PESD	Standards, public health, trade
FWG 03/2001T	U	Research, management
FWG 04/2001	HTF	Research, aquaculture
FWG 01/2002	U	Training, manual
FWG 02/2002	PESD	Standards, trade
FWG 01/2003T	EGSME	Workshop, aquaculture, trade
FWG 02/2003	DHC	Conference, management, proceedings
FWG 03/2003	PESD	Conference, management

APPENDIX V: Summary of FWG projects

Project	Project Overseer	Operational	TILF	Self-funded	Total	Primary Theme	Secondary Theme	Status
1.1995	Thailand	28,750	0	0	28,750	U	NL	Completed
2.1995	Thailand	28,750	0	0	28,750	U	NL	Completed
3.1995	Thailand	31,188	0	0	31,188	U	NL	Completed
1.1996	China	10,700	0	0	10,700	U	NL	Completed
2.1996	USA	80,300	0	0	80,300	U	NL	Completed
3.1996	Thailand	25,000	0	0	25,000	U	NL	Completed
4.1996	Thailand	25,000	0	0	25,000	U	NL	Completed
1.1998	Australia	19,388	0	10,000	29,388	PESD	NL	Completed
2.1998T	Canada	0	75,000	0	75,000	SEI	NL	Completed
1.1999	Australia	80,480	0	20,000	100,480	PESD	NL	Completed
1.1999T	Canada	0	84,005	0	84,005	EGSME	NL	Completed
2.1999	Australia	83,800	0	5,000	88,800	DHC	PESD	Completed
3.1999	Australia	53,850	0	5,000	58,850	DHC	PESD	Completed
1.2000	Philippines	59,000	0	0	59,000	PESD	NL	In progress
2.2000	Thailand	42,100	0	20,000	62,100	U	NL	Completed
3.2000	Mexico	55,900	0	18,000	73,900	U	NL	Completed
1.2001	Australia	89,000	0	35,000	124,000	HTF	NL	Completed
1.2001T	Canada	0	85,000	0	85,000	U	NL	In progress
2.2001	USA	38,000	0	0	38,000	PESD	NL	In progress
3.2001T	USA-Mexico	0	91,070	0	91,070	U	NL	In progress
4.2001	USA	96,135	0	76,000	172,135	HTF	NL	Completed
1.2002	Thailand	116,500	0	39,000	155,500	U	NL	In progress
2.2002	USA-Australia	86,413	0	163,000	249,413	PESD	NL	In progress
1.2003T	Peru	68,140	0	0	68,140	EGSME	NL	In progress
2.2003	Peru	43,000	0	0	43,000	DHC	HTF	In progress
3.2003	USA	17,500	0	0	17,500	PESD	HTF	In progress
Proportion		61.89	17.59	20.53	100.00			
2.1998	Australia	79000	0	8000	87000	PESD		Cancelled

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Glossary

APEC	Asia-Pacific Economic Cooperation
APIAN	APEC International Assessment Network
BMC	Budget and Management Committee
CTI	Committee on Investment and Trade
DHC	Developing Human Capital
EC	Economic Committee
ECOTECH	Economic and Technical Cooperation
EGSME	Encouraging Growth of SMEs
ESC	ECOTECH Subcommittee
FAO	Food and Agriculture Organization of the United Nations
FWG	Fisheries Working Group
GDP	Gross Domestic Product
HACCP	Hazard Analysis and Critical Control Point
HTF	Harnessing Technologies for the Future
IFI	International Financial Institution
IUU	Illegal, Unreported and Unregulated Fishing
LIFDC	Low Income Food Deficit Countries
NGO	Non-government Organization
PESD	Promoting Environmentally Sustainable Development
SEI	Strengthening Economic Infrastructure
RFMO	Regional Fisheries Management Organization
TILF	Trade and Investment Liberalization and Facilitation
U	Unclassified