



**Asia-Pacific  
Economic Cooperation**

**Independent Assessment of the ECOTECH  
Implementation of APEC Working Groups and  
SOM Taskforces:  
Industrial Science and Technology Working Group  
(ISTWG)**

**Report to the APEC SOM Steering Committee on Economic and  
Technical Cooperation**

**July 2009**

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# **Independent Assessment of the Industrial Science and Technology Working Group (ISTWG)**

## **Final Report (July 13, 2009)**

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### **Executive Summary**

As well recognized in APEC documents, Industrial Science and Technology represents an essential component of ECOTECH inasmuch as proper implementation of the APEC vision in this area has the potential to significantly contribute to all four ECOTECH core goals. On the other hand, cooperation in S&T presents sizable complications associated with the differences in development levels of APEC member economies and the consequent difficulty in motivating them to pursue cooperative endeavors. This is the challenge faced by the ISTWG and the basic question is how it has measured up to it. More specifically, there are two main interrogations. First, how is the ISTWG doing what it is doing? And second, is what it is doing relevant to this challenge and, more precisely, to its mandate?

As the detailed report purports to show, on the surface the ISTWG seems to be doing well. In addition, several of the projects it sponsors are well regarded, of an undeniable high quality, and have a significant impact as intended. Indeed this report does not deny that the ISTWG has done important work throughout its many years of activities. That fact cannot hide, though, the negative answer to the basic question posed above. The ISTWG has not yet been able to set in motion a process of effective and significant cooperation in its field of operation. Although the reasons for this are not all confined to the realm of the ISTWG those that do can be identified. Perhaps the most important problem is that the ISTWG has been unable to articulate and convey a strategic view about the ways and tools to carry out its mandate. The answers to the Questionnaire prepared by this Consultant suggest that this may be partly explained by a leadership that is perceived by many of the ISTWG members as not strong enough and somewhat distant. This is not due to the performance of the Lead Shepherd, generally well rated, but instead by an organizational environment that is wanting in coordination. Compounding this situation is the fact that many ISTWG members have a rather limited experience and thus lack the necessary skills to formulate strategic visions.

A serious consequence of this shortcoming is the decrease in interest shown by many member economies. Attendance to WG meetings has been dwindling and some large economies are absent or have a reduced level of participation. The observed low level of interest is also related to the fact that project proposals originate in a limited number of economies. This has led to an unhealthy concentration of ISTWG sponsored projects in a few member economies. This concentration, in turn, may produce an additional loss of interest, generating a potentially destructive vicious circle.

The opinion of this Consultant is that, despite these very serious deficiencies in performance and direction of the ISTWG, they do not merit severe measures such as the dissolution of the Working Group. Cooperation in Industrial Science and Technology is of the highest importance and may be considered a litmus test of the capacity of APEC as an institution to live up to its highest promises and ideals. Renouncing to this endeavor would amount to a renunciation of these ideals and the world would be poorer afterwards. This Consultant also believes that there are remedies to the problems identified with the ISTWG and that, while they will demand a high level of attention from APEC, they appear to be feasible. I prepared a list of 26 recommendations that are presented in the next section and also discussed in the main body of this report. For the sake of this Executive Summary I selected five of them that seem to me to be of the highest importance and relevance.

The five selected recommendations are:

1. **Constitute** an advisory body, composed of scientists and policy experts from APEC economies, which will provide assistance to the ISTWG on issues of S&T policy as well as on the current state of science and technology and the substance of specific projects.
2. **Commission** a *Study on Innovation Systems of member economies in APEC*: this study needs to emphasize a comparative perspective and also to identify potential areas for cooperation among APEC member economies.
3. **Develop** a *Strategic Plan of Action on S&T Cooperation* for the activities of the ISTWG that is based upon the analysis derived from the study on Innovation Systems within APEC and on additional inputs from the advisory body.
4. Learning from the successes and failures of the ASTWeb, the APEC Science and Technology web portal developed by Australia in 1998 that ceased operations in 2006, **establish** a new web site to support and disseminate the activities sponsored by the ISTWG. Funding for this venture needs to be secured on a solid basis. In principle, this web site might include a component for communication within the membership of the ISTWG, although the main function envisaged in this item is outreach to the science and technology, policymaking, and business communities.
5. **Call** for a meeting of APEC Ministers in charge of Science and Technology in the near future. Such a meeting is necessary to consolidate the changes promoted by this set of recommendations and to give new impetus to the activities of the ISTWG. It would be held soon after the implementation of the reform of the ISTWG.

## **Full List of Recommendations**

According to the TOR for this Assessment the list is presented in two part, the first containing recommendations to be considered for adoption by the SCE, the second containing recommendations to be considered for adoption by the WG. A thematic classification of the recommendations is presented in the main body of this document.

### *Recommendations to the SCE*

1. Call for a meeting of APEC Ministers in charge of Science and Technology in the near future. Such a meeting is necessary to consolidate the changes promoted by this set of recommendations and to give a new impetus to the activities of the ISTWG. It would be held soon after the implementation of the reform of the ISTWG.
2. Boost the profile of leadership in ISTWG meetings: this can be accomplished by defining more clearly the respective roles of the Lead Shepherd and the APEC Secretariat as well as that of the SCE Chair. Coordination between these three actors is of course essential and it is necessary to clearly specify the relevant procedures.
3. Intensify the coordinating role of the SCE. To this end a closer and more systematic interaction between the Chair of the SCE and the WG Lead Shepherd will be helpful. Moreover, it is necessary that the SCE encourage and promote more effective channels of interaction among the Working Groups under its supervision. The current system, with a single and extremely short meeting of the SCE-COW, has proven so far to be insufficient.
4. Study the potential and modalities for collaborative activities with other Working Groups under the SCE, in particular those existing in the case of the Small and Medium Enterprises Working Group (SMEWG) and the Human Resources Development Working Group (HRDWG). A (short term) Task Force, reporting directly to the SOM, might be useful to this purpose. It would be most sensible for this Task Force not to limit its work to the case of the ISTWG but instead examine the potential for collaborative activities among all Working Groups.
5. Discuss within the ISTWG, in articulation with the SCE through the SCE Chair, the convenience of establishing Capacity Building as a new cross cutting issue.

### *Recommendations to the ISTWG*

6. Improve pre-meeting arrangements: this can be accomplished by setting a checklist of tasks with an associated timetable for their execution. It is important that information on both the checklist and timetable be provided to contact points in member economies so that it becomes easier for them to plan their own necessary preparatory tasks in advance of the meeting.
7. Reorganize meeting scheduling so as to enhance both policy dialogue and project-related discussions: this can be accomplished by going back to the previous format of parallel discussions by subgroups during the first day. In addition to allowing for an environment that is more conducive to a frank discussion of both new projects and projects under implementation this will free valuable time that can be used for (plenary) policy discussions in the first day. The schedule format of the second day, in principle, would not need adjustments.

8. Enhance the quality of intersession contacts: this can be accomplished by adopting a more systematic and frequent schedule for these contacts.
9. Make sure that follow-up and intersession reports reach, in addition to participants in WG meetings, those economies that were unable to attend the meetings: this can be accomplished easily by placing this and other ISTWG information on a *ISTWG Web Portal* that would be continuously updated. At least part of this portal, which could be a thoroughly revamped version of the ISTWG area in the AIMP Collaborative System, should be accessible to a wider public than ISTWG membership.
10. Produce and circulate progress reports on projects under implementation: this can be accomplished by requiring Project Overseers, in addition to their current obligation to produce the "Progress Report for APEC Projects" annually submitted to the BMC (see Annex G2 of the Guidebook on APEC Projects), to submit periodic reports containing information in format intended for public dissemination of project achievements. These reports would be used to update the information on the ISTWG Web Portal.
11. Achieve a better balance between policy discussions and deliberations on specific projects. A proposal on this regard could come either from the leadership of the ISTWG or from the SCE. The reorganization of meeting scheduling makes possible to allocate more time to policy discussions.
12. Constitute an advisory body, composed of scientists and policy experts from APEC economies, which will provide assistance to the ISTWG on issues of S&T policy as well as on the current state of science and technology and the substance of specific projects.
13. Commission a *Study on Innovation Systems of member economies in APEC*: this study needs to emphasize a comparative perspective and also to identify potential areas for cooperation among APEC member economies.
14. Develop a *Strategic Plan of Action on S&T Cooperation* for the activities of the ISTWG that is based upon the analysis derived from the study on Innovation Systems within APEC and on additional inputs from the advisory body
15. Develop efforts, through contacts with member economies, to enhance the level of relevant experience and expert knowledge of future members of the Working Group
16. Establish an *Expert Review* system that projects will have to face prior to being submitted by the ISTWG to the Budget Management Committee. This review, a supplement to the operation of the Standing QAF Group, established at the 34<sup>th</sup> Meeting of the ISTWG (Hong Kong, March 2008), is to be conducted with the assistance of the advisory body and will focus on the substance of the proposal as well as with its consistency with the Strategic Plan of Action on S&T Cooperation.
17. Establish a database of institutions dealing on science and technology and S&T policy in member economies: this database should build upon the existing APEC-ISTI Database Project and benefit as well from the Study on Innovation Systems within APEC. It will be instrumental in increasing the reach of activities by the ISTWG.
18. Develop relations with as many institutions as possible from this database with the purpose of establishing a *Network of APEC S&T Institutions*.
19. Learning from the successes and failures of the ASTWeb, the APEC Science and Technology web portal developed by Australia in 1998 that ceased operations in 2006, establish a new web site to support and disseminate the activities sponsored by the ISTWG. Funding for this venture needs to be secured on a solid basis. In principle, this web site might include a component for communication within the membership of the ISTWG, although the main function envisaged in this item is outreach to the science and technology, policymaking, and business communities.

20. Produce a Newsletter on S&T Cooperation within APEC for the sake of dissemination of information on ISTWG activities, including projects sponsored by the ISTWG. This Newsletter must be issued periodically and be downloadable from the web portal as well as from the web pages of members of the network of APEC S&T institutions.
21. Seek a partnership with the APEC Business Advisory Council (ABAC) with the goal of increasing the visibility and impact in the business community of projects sponsored by the ISTWG.
22. Study the potential for collaboration with the Gender Focal Point Network to develop ways of enhancing the role of women in S&T activities in member economies. The SCE Chair can play a coordinating role in this regard.
23. Broaden the dissemination of the results of the recent “APEC Workshop on Participation of Women and Ethnic Communities in the S&T Workforce” (ISTWG 04/2007) so as to encourage follow-up research on this issue.
24. Study ways of re-establishing activities on the cross cutting issue of Sustainable Development. Learning from the experience of the Ad Hoc Task Force on Sustainable Development (AHTFSD) it may be convenient to examine this activity in the context of collaboration with other Working Groups.
25. Establish channels of communication between the ISTWG and the ASEAN Science and Technology Network (ASTNet) and explore possible avenues for cooperation and exchange of information.
26. Establish channels of communications between the ISTWG and the Directorate for Science, Technology and Industry of the Organization for Economic Co-Operation and Development (OECD) and explore possible avenues for cooperation and exchange of information.

## **Background to this Assessment**

### *About the ISTWG*

One of the specific objectives of Asia-Pacific Economic Cooperation (APEC) from its creation in 1989 has been “to enhance the positive gains, both for the region and the world economy, resulting from increasing economic interdependence, to include encouraging the flow of goods, services, capital, and technology.” From very early on APEC leaders understood that the creation of science and technology networks and the widespread access to technology by all member economies, regardless of their level of development, would play a powerful role in achieving the higher goals of the continuation of the region dynamism and the creation of a prosperous community of Pacific economies.

The Industrial Science and Technology Working Group (ISTWG) has been operating from 1991 to respond to these aspirations. Its activities are guided by the principles set by the APEC Economic Leaders as complemented by the objectives set by the APEC Ministers in charge of Science and Technology. From 2005, following the reform of ECOTECH activities by APEC, the work of the ISTWG is supervised and coordinated by the SOM Steering Committee on Economic and Technical Cooperation (SCE). According to its mandate it reports annually to the SCE through the SCE Fora Report.

The main documents that guide the ISTWG are:

- The APEC Agenda for Science and Technology Industry Cooperation into the 21<sup>st</sup> Century, a document approved by the APEC Ministers in charge of Science and Technology at their Third Ministerial Meeting (Mexico City, October 1998) and endorsed by the APEC Economic Leaders at their Summit of that same year (Kuala Lumpur, November 1998);
- Statements from the Ministerial Meetings of the APEC Ministers in charge of Science and Technology. The latest is the Communiqué issued at the Fourth Ministerial Meeting (Christchurch, March 2004);
- The Declaration on an Asia-Pacific Economic Cooperation Framework for Strengthening Economic Cooperation and Development, issued at the Eighth APEC Ministerial Meeting (Manila, November 1996) and endorsed by the APEC Economic Leaders at their Summit soon afterwards;
- Its Terms of Reference, last renewed in 2008; and
- Its Work Plan, updated yearly.

According to these documents the goals of the ISTWG are

- Enhanced economic growth, trade and investment opportunities, in harmony with sustainability, through policies, innovative technologies and R&D, and knowledge sharing;
- Better quality of life and a clean environment;
- Safe and secure society;
- Human resource capacity building;
- Enhanced international S&T networks;
- Improved level of connection between research and innovation;



- Strengthened technological cooperation and achievements of best practices in strategic planning for IST projects and programs;
- Reduction of economic disparities among APEC economies; and
- Deepened spirit of community in the Asia-Pacific.

Towards the achievement of these goals the ISTWG is expected to operate in an open manner, encouraging the participation of all member economies, and in coordination and cooperation with other APEC fora and with other international organizations that are relevant to its activities. Other APEC groups whose activities are expected to overlap with those of the ISTWG include the Energy Working Group (EWG), the Human Resources Development Group (HRDWG), the Health Working Group (HWG), and the Telecommunications and Information Working Group (TEL).

The ISTWG meets normally twice a year and its Lead Shepherd is elected among its members for a two-year period. The APEC Secretariat assists its activities.

#### *About this Assessment*

Independent assessment of ECOTECH activities was initiated in 2003-4 with a review of the activities of the Fisheries Working Group. Building upon this successful exercise, and upon the recommendation of the SCE, APEC Ministers and Economic Leaders decided to pursue a systematic review of APEC groups operating under the supervision of the SCE. The Budget and Management Committee approved the SCE project proposal on the independent assessment of the ISTWG during 2009. The proposal of this Consultant to a Request for Proposal (SCE 01/2009) was selected in January 2009 and the present document is being presented as a result of that work.

Among the main objectives of this assessment are:

1. Review ISTWG meetings, projects and activities and assess their outcomes;
2. Evaluate how these activities are supporting the main objectives of the ISTWG and APEC;
3. Explore how ISTWG can better take into account the APEC commitment to give gender greater consideration;
4. Assess the impact of the ISTWG work program "on the ground" in APEC member economies;
5. Identify ways to develop synergies among the work of ISTWG and various relevant APEC fora;
6. Identify the ISTWG opportunities for greater collaboration with non-APEC parties, including the private sector, civil society and other international organizations.
7. Identify ways for the ISTWG to tap resources for programs; opportunities to profile and share programs or projects;
8. Identify ways to strengthen the ISTWG strategic priorities and direction for future works;

9. Evaluate whether the ISTWG is operating effectively or whether its Terms of Reference should be changed to better respond to its priorities and APEC goals; and
10. Provide recommendations on how the forum can better focus and more efficiently and effectively manage its tasks and assure that its capacity building activities are providing benefits according to the Leaders' and Ministers' priorities.

This document is organized as follows. After the present background section, the methodology guiding this assessment is discussed. Next come five sections dealing with the various aspects relevant to this assessment, namely: the organization of the ISTWG; the management and adequacy of ISTWG projects; the impact of ISTWG activities; gender and minority issues; strategy planning and best practices. For each of these sections there is a review of the corresponding issue, including an evaluation of its performance, and a set of recommendations that follow from the preceding evaluation. The document ends with some concluding remarks.

## **Methodology of this Independent Assessment**

### *Conceptual framework*

This assessment, as is the case with any intellectual endeavour, is based upon verifiable and well-established facts but also relies on a particular view of the processes and systems under review. In the current case we are dealing with the economic, social, and political processes that have been unfolding in the Asia-Pacific region for at least twenty years and that are being partly harnessed and guided by APEC and its leadership. It is necessary to express such a view in an explicit way so as to understand how the recommendations to be presented are related to the facts under review. Though this "conceptual framework" is naturally related to economic and social theory I will describe it in rather simple terms.

There are three principal elements in this framework, which have to do, respectively, with: the process of constructing a community of economies; the complex relationship between competition and cooperation; the interaction between economies of highly unequal levels of development.

The construction of a community of Pacific economies is, of course, one of the main motivations for the creation of APEC and an ideal that has guided generations of Economic Leaders in their quest to perfect the organization. In a sense it has become an organizing principle of many of the activities of APEC and it figures prominently in the main documents about ECOTECH and, in particular, in those of the ISTWG. It must be recognized, however, that the realization of this ideal, as applied to a highly heterogeneous set of member economies, is extremely complex and has remained so far elusive. The challenges faced within APEC and its Groups as a consequence of this objective are so daunting that, rather to stimulate for action they may instead drive the relevant actors either into complacency or into the construction of an alternative reality. It is necessary, to avoid these risks, to bring into the scene those actors who have most to gain from the creation of an Asia Pacific community, to clearly define scenarios of cooperation among them, and to set realistic and specific timetables. This is naturally more easily said than done but at least, in the current case, will serve as one of the organizing principles for this independent assessment.

The relation between cooperation and competition is one fascinating theme in economic and social theory as well as in the natural sciences. It has been widely acknowledged that the opposition between these two modes of interaction is a false dichotomy and, indeed, numerous illustrations from the social as well as the natural sciences show that cooperation and competition are often complementary. APEC is an interesting example of an institution that promotes at the same time competition and cooperation among its members. In a rather simplified and schematic way we can say that TILF activities relate mostly to the creation of a suitable environment for healthy competition among member economies while ECOTECH activities mainly promote cooperation among member economies in many relevant areas. It is often said that TILF and ECOTECH are, together with Business Facilitation, the main pillars of APEC and this implies that another organizing principle of the organization is the search for a workable combination of policies promoting competition and cooperation. Again, this type of combination, however desirable and powerful, is not achieved easily in social systems. Certainly many of the tensions within APEC, as an organization, over its twenty years of existence, have arisen from the difficulties associated in pursuing both policies in a way that is actually complementary and balanced. Misunderstandings about the relation between cooperation and competition are common. On the one hand competition between unequal actors may have negative effects for all those involved, so that winnings may be an illusion. Cooperation may be important in order to create a level field. On the other hand, another illusion results from the belief in cooperation based solely on generosity. Incentives must exist in order to attract participants to a cooperative endeavour and these will often result from competitive processes whose existence will have been rendered possible by cooperation. These apparently abstract considerations are relevant when examining the status of some cooperative endeavours promoted by the ISTWG, as we will see in the specific discussion presented in later sections.

The final element of this conceptual framework corresponds to the interaction between economies of unequal levels of development. APEC is quite a unique organization as it promotes the creation of a community of economies that are very different in size, in level of development, and even in their geopolitical view of the Pacific region and of the world. This heterogeneity is of course important in order to comprehend the above-mentioned complexities in combining policies that promote cooperation and competition. The multiplicity of levels of development lies behind the difficulty in designing cooperative schemes that would attract the voluntary participation of some more advanced economies. Improper design of these schemes, emphasizing for instance altruistic aspects, may even discourage the participation of sceptical intermediate economies. The difficulties associated with heterogeneity are great and handling them may well require leadership at the highest levels of the organization.

### *Analysis of Documentation*

For the sake of this assessment, the Consultant reviewed the extensive documentation that is available from the web page of APEC. Particularly useful were the documents available from the Meeting Document Database and the Project Database of the APEC Information Management Portal (AIMP). Documents reviewed included, but were not limited to, the following: Declarations from Economic Leaders' Summits; Declarations from Annual Ministerial Meetings; Statements from the Ministerial Meetings of the APEC Ministers in charge of Science and Technology; the yearly Senior Official's Reports on Economic and Technical Cooperation; assorted documents from past meetings of the ISTWG; documents from past meetings of the SCE and the SCE-COW. Also reviewed were numerous documents related

to specific projects sponsored by the ISTWG obtainable from the Project Database as well as information about some specific conferences, such as the High-Level on Sustainable Development (Santiago de Chile, July 2006), and the APEC Climate Symposium (Lima, August 2008).

### *The Questionnaire*

A necessary and important input for the preparation of this Assessment was provided by the replies to a Questionnaire that I prepared in early March 2009 and that was sent, through the APEC Secretariat, to Contact Points in all APEC member economies. In addition to seeking the particular views and positions originating from each member economy, the questionnaire was designed in order to obtain further information about a number of relevant areas. In the first place, the questionnaire asked questions about the operations of the Working Group, including the quality of communications within the WG and the degree of participation of members in its activities. Secondly, there were questions about project management and adequacy, including budgetary issues as well as more substantive questions on the consistency of projects with the core goals and selected priorities of ECOTECH. In the third place, the questionnaire sought to obtain information about the impact that projects have on the business, academic and policymaker communities. Fourthly, questions about strategic planning and best practices were formulated, including the identification of cross cutting issues, outreach activities, and relations with other APEC and non APEC bodies relevant to Science and Technology activities. Finally, the questionnaire explored special issues, including the participation of women and of minorities in Science and Technology activities.

Ten member economies provided replies to the questionnaire and some of them supplemented their answers with detailed suggestions related to the topics under discussion. Overall the set of answers and comments provided an invaluable resource for the preparation of this Independent Assessment. The Questionnaire is reproduced in Annex A to this document.

### *Working Group Meeting*

As part of the Terms of Reference of this Consultant, I attended as an observer the 36<sup>th</sup> Meeting of the ISTWG (Merida, March 23-25, 2009) and participated in all of its sessions. In addition to observing the meeting and making a presentation to its members on the ongoing assessment process I had the opportunity to interact with most of its members over the space of those three days. The rapport established on that occasion proved to be useful for subsequent contacts and also to complement the information to be gathered from the questionnaire with other views that, though personal and somewhat subjective, played an important role in the shaping of my own perspective on the activities of the Working Group.

### *Other Contacts*

Several other contacts, taking place from April through early July, were important for the execution of this Assessment. They are:

- I met Mr. Kenji Hiramatsu, SCE Chair and APEC Senior Official of Japan (Ministry of Foreign Affairs) on April 13. That was an excellent and useful opportunity to brief him

on my work up to that point, to obtain his valuable comments on ECOTECH activities in general and those of the ISTWG in particular, and to further my own insight on the working of ECOTECH institutions.

- In addition to my contacts with Dr. Lee Myung-Jin, Lead Shepherd of the ISTWG at the time of the 36<sup>th</sup> ISTWG meeting, I have also maintained correspondence with him throughout this last months.
- Throughout the period of preparation of this report I have maintained a continuous relationship with the APEC Secretariat, particularly with Mr. Park Yung-Suh, Director (Program) in charge of the ISTWG and with Ms. Monica Ochoa, Director (Program) in charge of coordination of SCE Fora. In particular, their comments to a first draft of this document (prior to its first circulated version) were extremely useful.
- As mentioned above, I exchanged personal communications with WG members over the past two months on relevant issues, in particular with those representing Korea, Mexico, New Zealand, Thailand, and the United States.
- I also had the opportunity of visiting Chile in early April and to meet there with officials in charge of relations with APEC and with the ISTWG. I talked in particular with Mr. Felipe Sandoval of the Economic Directorate of the Ministry of Foreign Affairs (DIRECON) and Head of its APEC Department and with Dr. Victor Manriquez, of the National Commission for Science and Technology Research. These meetings were particularly useful to understand the internal mechanics of science and technology policy as well as its international dimensions in the context of particular economies such as Chile.
- Last but not least, the comments to the first version of this document received from member economies and from the SCE Chair were essential to give it its finishing touches.

## **Issues of Organization of the ISTWG**

### *Review of the issues*

As stated in its Terms of Reference and reminded earlier in this Assessment, the explicit mandate of the ISTWG is “to enhance the positive gains, both for the region and the world economy, resulting from increasing economic interdependence, to include encouraging the flow of goods, services, capital, and technology.” The main institutional tool for carrying on this mandate is provided by the twice-yearly meetings of the Working Group that have taken place for the last eighteen years and that bring together representatives nominated by the relevant agencies that serve as contact points in the member economies. The sessions, lasting normally for two days, are devoted to three main types of activities: discussion of policy issues, review of ongoing projects under ISTWG supervision, deliberation on proposals for new projects to be eventually submitted to the BMC for its consideration. A significant part of the time is also used for the discussion of procedural issues that are relevant to the working of the ISTWG and to its relationship to other APEC bodies. This part of the Assessment deals with the performance of these meetings and with the preparatory and follow-up activities associated with them.

Pre-meeting preparations, involving agenda preparation and the dissemination of documents, although generally well rated by members of the Working Group, has been criticized by some members for being too hurried. Delays are an unavoidable feature of any complex organization but, in the case of an organization such as APEC, with members that have their

own bureaucracies with different levels of efficiency, they can have critical effects on attendance to meetings. It is likely that this is one of the factors explaining the reduced participation observed in some of the recent meetings of the Working Group.

A more important source of criticism relates to the distribution of time in WG meetings among the types of activities mentioned above. Much of the time is devoted to the discussion of specific projects and very little to substantive policy discussions. This imbalance would not be so serious if some of the projects dealt with policy subjects but this is rarely the case. As a result there is a tendency for WG meetings to become seminars where a variety of heterogeneous projects, being executed as well as under consideration for submission, are presented to a similarly heterogeneous audience. The gravity of this state of affairs is compounded if we are reminded that the last time the ISTWG received a substantive guidance from the APEC leadership was in 2004, when the APEC Ministers in charge of Science and Technology met in Christchurch. As a matter of fact several replies to the questionnaire complained about a perceived lack of focus or of a “strategic view” of the ISTWG. Explanations offered for this situation are diverse and include, most importantly, the limitation of resources that most member economies are able to devote to the Working Group, and deficient coordination within the Working Group and between the WG, the APEC Secretariat and the SCE. It would be hard to understate the importance of this criticism and it seems likely that it is a powerful explanatory factor of the diminished participation in recent WG meetings of several important member economies as well as of the nearly systematic absence of others. Attendance at ISTWG meetings during the last five years has ranged from a high of 18 economies for its 28<sup>th</sup> ISTWG meeting (March 2005) to a low of 11 economies for its 32<sup>nd</sup> meeting (May 2007), with an overall average attendance of 14.7 economies.

The current organization of meetings is not helpful in regard to the perceived imbalance between policy issues and project discussion. The first day is entirely devoted to “side meetings” of the four subgroups that deal with the four main categories of projects of the WG. As a matter of fact, the “side meetings” are indeed back-to-back plenary meetings and this arrangement explains that an entire day is needed for them. The arrangement, in addition to using precious time, has also been criticized by many participants as not being conducive to an efficient discussion of the projects involved. It has been pointed out in that criticism that the current plenary character of the “side meetings” and the associated heterogeneity of the audience result in slow and unproductive sessions. Curiously, one of the plenary sessions during the second day is devoted to reports on these “side meetings”, a waste of time given that those meetings were already plenary sessions themselves.

Regarding follow-up on meetings and intersession communications I received quite diverse opinions. Some rated highly the leadership of the WG on the quality of these activities while others were very negative on them. It is a fact that there is a “core” of members that have been historically very active in the ISTWG and it is easy to understand that communication among them and between them and the leadership of the Working Group is dynamic and proactive. Other members may be more passive in this respect and their criticism is related to the perceived lack of dynamism in the generation of follow-up communications from the WG leadership. This criticism is valid and is probably a third explanatory factor behind the diminished level of participation on WG meetings. One particularly interesting comment on this issue was that member economies that had been unable to attend meetings did not receive follow-up information about them. I must say that this criticism is not validated by my own observation of WG communications that followed the latest WG meeting in Merida (March

23-25, 2009). However, the fact that this kind of perception exists on the part of members is revealing about the general state of communications between the WG leadership and membership in general.

A final set of observations is related to project management. Once again many of the respondents wish a more active involvement of the SCE Chair, while the role of the APEC Secretariat and of subgroups is rated positively. An important consideration in regard to project management is that its quality suffers from the previously mentioned lack of a “strategic view”. The dissemination of the results of projects is also uneven and in most cases deficient. This is a serious failure as it goes against some of the most important goals of the ISTWG, such as the creation of international networks in S&T, the improved connection between research and innovation, and the deepening of a Pacific sense of community among others.

### *Recommendations*

Below follows a list of concrete recommendations dealing with the issues reviewed:

1. Improve pre-meeting arrangements: this can be accomplished by setting a checklist of tasks with an associated timetable for their execution. It is important that information on both the checklist and timetable be provided to contact points in member economies so that it becomes easier for them to plan their own necessary preparatory tasks in advance of the meeting.
2. Reorganize meeting scheduling so as to enhance both policy dialogue and project-related discussions: this can be accomplished by going back to the previous format of parallel discussions by subgroups during the first day. In addition to allowing for an environment that is more conducive to a frank discussion of both new projects and projects under implementation this will free valuable time that can be used for (plenary) policy discussions in the first day. The schedule format of the second day, in principle, would not need adjustments.
3. Enhance the quality of intersession contacts: this can be accomplished by adopting a more systematic and frequent schedule for these contacts.
4. Make sure that follow-up and intersession reports reach, in addition to participants in WG meetings, those economies that were unable to attend the meetings: this can be accomplished easily by placing this and other ISTWG information on a *ISTWG Web Portal* that would be continuously updated. At least part of this portal, which could be a thoroughly revamped version of the ISTWG area in the AIMP Collaborative System, should be accessible to a wider public than ISTWG membership.
5. Produce and circulate progress reports on projects under implementation: this can be accomplished by requiring Project Overseers, in addition to their current obligation to produce the “Progress Report for APEC Projects” annually submitted to the BMC (see Annex G2 of the Guidebook on APEC Projects), to submit periodic reports containing information in format intended for public dissemination of project achievements. These reports would be used to update the information on the ISTWG Web Portal.
6. Boost the profile of leadership in ISTWG meetings: this can be accomplished by defining more clearly the respective roles of the Lead Shepherd and the APEC Secretariat as well as that of the SCE Chair. Coordination between these three actors is of course essential and it is necessary to specify clearly the relevant procedures.

## **Project Adequacy and Management**

### *Review of the issues*

The issue of project adequacy is one of the most important as it goes to the heart of the justification for the existence of the ISTWG. In this context we will be led to discuss again project management so that there will be some overlap with the preceding section. In reply to the questionnaire most responses rated highly the degree of consistency of projects with ECOTECH core goals as well as its contribution to the six main goals of the Working Group. Not surprisingly the opinion about consistency with ECOTECH priorities was mixed, reflecting the fact that some of these priorities are weakly related to Industrial Science and Technology. The table in Annex B gives a summary of average ratings computed from the set of ten replies to the questionnaire for a maximum rating of five. This rather positive view on project adequacy is at odds with the comments and suggestions received from the same respondents, and confirmed through additional communications, revealing dissatisfaction with the overall orientation of projects. It seems that the positive replies correspond to opinions about specific and particular projects while the lack of satisfaction originates from a look at the whole set of project activity of the Working Group. It is here that the lack of a “strategic view” mentioned in the previous section becomes important. In addition to this criticism other specific points about project management and review have been raised in the replies to the questionnaire. Perhaps the harshest of them is that many representatives to the meetings of the Working Group are inexperienced and consequently not adequately prepared for policy discussions that would be aimed at devising recommendations on a broad strategic view. A related criticism is that representatives from member economies tend to adopt local views that suit the local interests of their economies rather than seek for APEC wide or even regional collaborative endeavors. A more vigorous and coordinated presence from the WG leadership and the SCE would be helpful in producing better outcomes.

A final observation, supported by my own experience during the latest meeting of the Working Group, is that deliberation on project proposals that will eventually be submitted to the BMC is often conducted with the participation of members with little expertise on their substance. As a result there is not adequately an adequate vetting of these proposals. This is not a criticism of the WG membership but rather of the process of review of new proposals.

### *Recommendations*

Below follows a list of concrete recommendations dealing with the issues reviewed:

1. Achieve a better balance between policy discussions and deliberations on specific projects. A proposal on this regard could come either from the leadership of the ISTWG or from the SCE. The reorganization of meeting scheduling makes possible to allocate more time to policy discussions.
2. Constitute an advisory body, composed of scientists and policy experts from APEC economies, which will provide assistance to the ISTWG on issues of S&T policy as well as on the current state of science and technology and the substance of specific projects.
3. Commission a *Study on Innovation Systems of member economies in APEC*: this study needs to emphasize a comparative perspective and also to identify potential areas for cooperation among APEC member economies.



4. Develop a *Strategic Plan of Action on S&T Cooperation* for the activities of the ISTWG that is based upon the analysis derived from the study on Innovation Systems within APEC and on additional inputs from the advisory body
5. Develop efforts, through contacts with member economies, to enhance the level of relevant experience and expert knowledge of future members of the Working Group
6. Establish an *Expert Review* system that projects will have to face prior to being submitted by the ISTWG to the Budget Management Committee. This review, a supplement to the operation of the Standing QAF Group, established at the 34<sup>th</sup> Meeting of the ISTWG (Hong Kong, March 2008), is to be conducted with the assistance of the advisory body and will focus on the substance of the proposal as well as with its consistency with the Strategic Plan of Action on S&T Cooperation.

## **Impact of Activities**

### *Review of the issues*

This is another central theme in the overall assessment of the activities of the ISTWG and the results are rather negative. When asked about their own knowledge of ongoing projects in their economies, unsurprisingly most replies indicated a high or medium level of knowledge. That level of knowledge was lower, although still acceptable, in the case of ongoing projects in APEC economies. Levels were also lower when dealing with projects taking place in the last five years and, in particular, not a single answer gave a high level of knowledge about past projects in other APEC economies during the previous five years.

More importantly, the impact among other relevant communities in member economies was generally low as shown in Annex C. The same is true for the interest that these communities show in ISTWG projects (see again Annex C). Although this may be understandable for economies with a well-developed S&T sector, for whom ISTWG activities may be deemed of small significance relative to their own, this also holds for less developed economies. There are two complementary explanations for this situation. One is that the ISTWG is not reaching adequately its natural constituencies in the member economies and this may be due to a variety of reasons, including the inadequate execution of their duties by contact points in member economies, and a deficient dissemination of the activities and results of projects sponsored by the ISTWG. Another, more serious, explanation is that the choice and design of projects is not answering to the expectations and needs of the relevant communities in member economies.

### *Recommendations*

Below follows a list of concrete recommendations dealing with the issues reviewed:

1. Establish a database of institutions dealing on science and technology and S&T policy in member economies: this database should build upon the existing APEC-ISTI Database Project and benefit as well from the Study on Innovation Systems within APEC. It will be instrumental in increasing the reach of activities by the ISTWG.
2. Develop relations with as many institutions as possible from this database with the purpose of establishing a *Network of APEC S&T Institutions*.

3. Learning from the successes and failures of the ASTWeb, the APEC Science and Technology web portal developed by Australia in 1998 that ceased operations in 2006, establish a new web portal to support and disseminate the activities sponsored by the ISTWG. Funding for this venture needs to be secured on a solid basis. In principle, this web site might include a component for communication within the membership of the ISTWG, although the main function envisaged in this item is outreach to the science and technology, policymaking, and business communities.
4. Produce a Newsletter on S&T Cooperation within APEC for the sake of dissemination of information on ISTWG activities, including projects sponsored by the ISTWG. This Newsletter must be issued periodically and be downloadable from the web portal as well as from the web pages of members of the network of APEC S&T institutions.
5. Seek a partnership with the APEC Business Advisory Council (ABAC) with the goal of increasing the visibility and impact in the business community of projects sponsored by the ISTWG.

## **Gender and Minorities**

### *Review of the issues*

It needs to be recognized that these do not seem to be among the most pressing issues of the Working Group. That much can be also gathered from the replies to the questionnaire. The only project I could identify dealing with gender and minority issues is one submitted by Korea in 2007 that conducted a Workshop on the Participation of Women and Ethnic Communities in the S&T Workforce and that led to several studies conducted within APEC member economies. Several respondents mentioned this project as a positive example and my own evaluation is that this was an important and useful project. Unfortunately the dissemination of its results has been poor and I could not find any follow-up on its results in policy discussions within the Working Group. This is hard to understand in the case of gender issues, given that all APEC documents stress the need to give proper attention to gender issues. In the case of minority issues several respondents indicated that this is not a very clear-cut issue and that minority issues have wholly different meanings in different socio-economic contexts. Thus, the notions of minority in the US or in Australia are quite different and so are the corresponding policy contexts.

### *Recommendations*

Below follows a list of concrete recommendations dealing with the issues reviewed:

1. Study the potential for collaboration with the Gender Focal Point Network to develop ways of enhancing the role of women in S&T activities in member economies. The SCE Chair can play a coordinating role in this regard.
2. Broaden the dissemination of the results of the recent “APEC Workshop on Participation of Women and Ethnic Communities in the S&T Workforce” (ISTWG 04/2007) so as to encourage follow-up research on this issue.

## **Strategic Planning and Best Practices**

### *Review of the issues*

This part of the assessment dealt mainly with three subjects, namely: relations with other APEC fora; relations with non-APEC institutions; and cross cutting issues. As for the first subject the questionnaire asked three questions about the degree of interaction with other APEC groups: knowledge of their activities; contacts with members of other APEC groups belonging to their own economy; contacts with members of other APEC groups. Answers were to be chosen either as Low, Medium, or High. Rather strikingly, not a single answer to any of the questions indicated a high degree of interaction (see Annex D). Verbal answers indicated, however, that many respondents agreed with the usefulness and importance of developing closer relations with some Working Groups coordinated by the SCE, especially the Human Resources Development Working Group and the Small and Medium Enterprises Working Group.

Given the limited degree of interaction with APEC groups, it is not surprising to notice that written comments and suggestions indicated a low degree of knowledge or interaction with non-APEC institutions as well.

In relation to cross cutting issues replies were consistent in identifying, in addition to Sustainable Development, Capacity Building as an important issue. Some mentioned also Climate Change as a potential cross cutting issue, although opinions were diverse. It is likely that the success and continuity of the projects overseen by the APEC Climate Center lead many to consider that this is already a well-established cross cutting issue.

### *Recommendations*

Below follows a list of concrete recommendations dealing with the issues reviewed:

1. Intensify the coordinating role of the SCE. To this end a closer and more systematic interaction between the Chair of the SCE and the WG Lead Shepherd will be helpful. Moreover, it is necessary that the SCE encourage and promote more effective channels of interaction among the Working Groups under its supervision. The current system, with a single and extremely short meeting of the SCE-COW, has proven so far to be insufficient.
2. Study the potential and modalities for collaborative activities with other Working Groups under the SCE, in particular those existing in the case of the Small and Medium Enterprises Working Group (SMEWG) and the Human Resources Development Working Group (HRDWG). A (short term) Task Force, reporting directly to the SOM, might be useful to this purpose. It would be most sensible for this Task Force not to limit its work to the case of the ISTWG but instead examine the potential for collaborative activities among all Working Groups.
3. Study ways of re-establishing activities on the cross cutting issue of Sustainable Development. Learning from the experience of the Ad Hoc Task Force on Sustainable Development (AHTFSD) it may be convenient to examine this activity in the context of collaboration with other Working Groups.
4. Discuss within the ISTWG, in articulation with the SCE Chair, the convenience of establishing Capacity Building as a new cross cutting issue.

5. Establish channels of communication between the ISTWG and the ASEAN Science and Technology Network (ASTNet) and explore possible avenues for cooperation and exchange of information.
6. Establish channels of communications between the ISTWG and the Directorate for Science, Technology and Industry of the Organization for Economic Co-Operation and Development (OECD) and explore possible avenues for cooperation and exchange of information.

### **Concluding remarks**

The essence of the inquiry of this assessment revolves around two questions. First, how is the ISTWG doing what it is doing? And second, is what it is doing relevant to this challenge and, more precisely, to its mandate? The preceding analysis points to rather negative answers to these basic questions. The second question is of course of the highest importance but the first is no less vital to the fulfillment of ECOTECH goals.

This assessment recognizes the value of many of the projects and activities of the Working Group but also identifies some disturbing problems. Foremost is the perception of lack of a clear strategy to achieve the core ECOTECH goals. The WG is seen as supervising a variety of projects that may have their own value and merit but that, however, fail to impress collectively as the manifestation of a well thought vision that would relate to the overarching principles of APEC and what they imply in the field of S&T cooperation. Probably related to this deficiency is the concentration of projects among a limited number of economies. This in turn is related to two other issues that this assessment identified, namely the very limited impact that ISTWG activities have in APEC economies, and the low degree of interest that these activities have been able to elicit in APEC economies of all levels of development.

The recommendations set forth in this assessment presuppose a belief in the capacity of the ISTWG to correct these problems. They are oriented primarily to three objectives. In the first place, strengthen the capacity of the ISTWG to develop a strategic vision of its activities. Second, enhance the analytical competence of the ISTWG that is needed for an adequate selection of projects to be sponsored. Third, provide means to the ISTWG to reach a wider audience in all APEC economies and to be in a position to attract relevant communities to cooperative endeavors in S&T.

If properly implemented, it is expected that a renewed ISTWG will be able to face afresh the hard challenges of establishing a meaningful APEC-wide cooperation in the area of S&T.

## Annex A: ISTWG ASSESSMENT QUESTIONNAIRE

*Note: use the password CONSULTANT to unlock the document*

### Section 1 Presentation

This questionnaire is being distributed for the sake of the preparation of the Independent Assessment of the Industrial Science and Technology Working Group (ISTWG) of APEC. The Independent Assessment is commissioned by the APEC Secretariat and is expected to help improve the operations of this APEC forum. Your cooperation will be greatly appreciated.

Please do not hesitate to address any inquiries about this questionnaire to the Consultant in charge of the Independent Assessment, Professor Neantro Saavedra-Rivano ([neantro@sk.tsukuba.ac.jp](mailto:neantro@sk.tsukuba.ac.jp)).

Answers to the questionnaire are to be sent to the above e-mail address by April 30, 2009.

### Section 2 Working Group Activities

#### 2.1. WG Meetings

2.1.1. On a scale of 1 to 5 please rank the following elements of WG meetings preparation and conduction

Agenda preparation	1
Documents dissemination	1
Meeting coordination	1
Post-meeting follow-up	1

2.1.2. Please explain your choices

2.1.3. Suggest measures to improve the usefulness and efficiency of WG meetings

#### 2.2. Policy formulation and implementation

2.2.1. Please provide answers to the questions below using the drop-down menus

How do you rate the reception of WG members contributions to policy formulation?	Excellent
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How do you rate the quality of intra-group consultations (including intersession periods)	Frequent
How do you consider the conditions of access to the SCE Chair?	Very fluid
How do you evaluate the role of the APEC Secretariat?	Excellent
Provide an overall evaluation, on a scale of 1 to 5, of the quality of policy formulation and implementation	1

2.2.2. Please explain your choices

2.2.3. Suggest measures to improve the quality of policy formulation and implementation

### 2.3 *Project management*

2.3.1. Provide rankings, on a scale of 1 to 5, of the roles of actors in the management of ISTWG projects

SCE Chair	1
APEC Secretariat	1
ISTWG Subgroups	1

2.3.2. Please explain your rankings

2.3.3. Suggest ways in which the management process could be improved

### 2.4 *Budgetary issues*

2.4.1. Answer the following questions by choosing the appropriate option from the drop-down menu

How familiar are you with the budgetary process of the ISTWG?	1
On a scale of 1 to 5 indicate the degree of commitment of your economy to provide monetary resources for the sake of projects and other WG activities	1
On a scale of 1 to 5 indicate the degree of commitment of your economy to provide personnel for the sake of projects and other WG activities	1

2.4.2. Explain your choices

2.4.3. Suggest ways to improve the efficiency and effectiveness of the budgetary process

### Section 3 Project Adequacy

#### 3.1. Consistency with ECOTECH core goals

3.1.1. On a scale of 1 to 5, how do you rate, on a general level, the consistency of ISTWG projects with the “core goals” stated in the “Framework for Strengthening Economic Cooperation and Development” (Manila, 1996)?

to attain sustainable growth and equitable development in the Asia-Pacific region	1
to reduce economic disparities among APEC economies	1
to improve the economic and social well-being of the people	1
to deepen the spirit of community in the Asia Pacific	1

3.1.2. Explain your rankings and provide suitable examples of projects

#### 3.2. Consistency with ECOTECH priorities

3.2.1. On a scale of 1 to 5, how do you rate, on a general level, the consistency of WG projects with the 10 ECOTECH priorities updated in the 2006 SCE Report on Economic and Technical Cooperation and endorsed by Ministers?

Developing human capital	1
Developing stable and efficient markets through structural reform	1
Strengthening economic infrastructure	1
Facilitating technology flows and harnessing technologies for the future	1
Safeguarding the quality of life through environmentally sound growth	1
Developing and strengthening the dynamism of small and medium enterprises	1
Integration into the global economy	1
Human security and counter-terrorism capacity building	1
Promoting the development of knowledge-based economies	1

Addressing social dimension of globalization.	1
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3.2.1. Explain your rankings and provide suitable examples of projects

3.3. *Contribution to WG goals*

3.3.1. On a scale of 1 to 5, how do you rate, on a general level, the contribution of WG projects to its goals as stated most recently in the 2009 Work Plan

Sustainable Development	1
Human Resource Capacity Building	1
International S&T Networks	1
Connecting Research and Innovation	1
Strengthening Technological Cooperation and Encouraging Best Practice in Strategic	1
Enhanced Policy Dialogue and Review	1

3.3.2. Explain your rankings and provide suitable examples of projects

#### **Section 4 Project Impact**

4.1. *Awareness of ISTWG projects*

4.1.1. Please answer the questions below by choosing the appropriate answer from the drop-down menu

Rate your own awareness of current projects involving your own economy	High
Rate your own awareness of projects executed during the last 5 years involving your own economy	High
Rate your own awareness of current projects	High
Rate your own awareness of projects executed during the last 5 years	High

4.1.2. Comment on your answers



#### 4.2. Sector-wise impact of ISTWG projects

4.2.1. Please provide, on a scale of 1 to 5, an assessment of the impact of ISTWG projects in your economy distinguishing different communities

S&T planners	1
Academic community	1
Business community	1
Overall impact	1

4.2.2. Explain your rankings and provide suitable examples of projects

4.2.3. Please rate, by choosing the appropriate answer from the drop-down menu, the interest shown by different communities on the projects and activities of the ISTWG

S&T planners	1
Academic community	1
Business community	1

4.2.4. Explain your rankings and provide suitable examples of projects

4.2.5. Provide your suggestions on ways to improve the visibility and impact of ISTWG projects

### Section 5 Strategic Planning and Best Practices

#### 5.1 Coordination with other APEC fora

5.1.1. Please answer the questions below by choosing the appropriate answer from the drop-down menu

Rate your own knowledge of the activities of other APEC fora	High
Rate your level of contacts with members of other APEC fora in your own economy	High
Rate your level of APEC-wide contacts with members of other APEC fora	High

5.1.2. Mention other APEC fora that you believe to be relevant to ISTWG activities

5.1.3. Explain your last answer

5.2. *Relations with non-APEC institutions*

5.2.1. Please describe your experience in terms of relations with other international organizations

5.2.2. Do you have any suggestions about relevant such organizations and the kind of interaction with them that might further ISTWG activities? Please explain

5.3 *Outreach*

5.3.1. Describe your knowledge of and experience of contacts in your own economy with small and medium enterprises (SME) relevant to the activities of the ISTWG. Do you have any suggestions about this kind of contacts?

5.3.2. Describe your knowledge of and experience of contacts in your own economy with the academic community relevant to the activities of the ISTWG. Do you have any suggestions about this kind of contacts?

5.3.3. Describe your knowledge of and experience of contacts in your own economy with other stakeholders relevant to the activities of the ISTWG. Do you have any suggestions about this kind of contacts?

5.3.4. Provide examples of such contacts (not necessarily in your own economy) that might serve as models for future ISTWG activities

5.4 *Funding sources*

5.4.1. Describe your knowledge of and experience of contacts with funding organizations (national or international, public or private)

5.4.2. Do you have any suggestions about ways to increase external funding to ISTWG projects and activities?

5.5 *Identification of cross cutting issues*

5.5.1. Provide your suggestions about cross cutting issues you believe are important to the ISTWG and explain the rationale underlying them

5.5.2. In the particular case of Sustainable Development, please rank, on a scale of 1 to 5, the contributions of the following actors to its deployment as a cross cutting issue

SCE Chair	1
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APEC Secretariat	1
Ad Hoc Task Force on Sustainable Development	1
ISTWG Subgroups	1
Other APEC Fora	1

5.5.3. Please explain your rankings

5.5.4. Please provide suggestions about handling this particular cross cutting issue

## **Section 6 Special Issues**

### *6.1 Gender issues*

6.1.1. On a scale of 1 to 5 provide rankings for the contributions of the following actors to the APEC goal of increasing women's participation in S&T activities

SCE Chair	1
APEC Secretariat	1
ISTWG Subgroups	1

6.1.2. Please explain your rankings

6.1.3. List any projects that you believe are good models as a contribution to this APEC goal

6.1.4. Provide suggestions about ways of better achieving this goal

### *6.2 Minorities*

6.2.1. On a scale of 1 to 5 provide rankings for the contributions of the following actors to the APEC goal of increasing the participation of minorities in S&T activities

SCE Chair	1
APEC Secretariat	1
ISTWG Subgroups	1

6.2.2. Please explain your rankings

6.2.3. List any projects that you believe are good models as a contribution to this APEC goal

6.2.4. Provide suggestions about ways of better achieving this goal

### **Section 7 Your Favorite Project**

7.1. Among the ISTWG projects you are aware of, single out one you believe to be most successful in terms of furthering ECOTECH goals. Explain your selection.

7.2. On a scale of 1 to 5 provide grades for this project in the following categories

Positive impact	1
Lasting effect	1
Project execution	1
International recognition	1
Contribution to APEC ECOTECH goals (see sub-section 3.1)	1

7.3. Explain your grades

### **Section 8 You and Your Institution**

8.1. Your name, position, affiliation, and other contact data

8.2. Your professional background, including discipline and degree

8.3. APEC experience (how long and in what condition)

8.4. ISTWG participation (for how long, both for you and your institution)

8.5. WG meetings attendance (yourself, your institution, your economy)

8.6. Project involvement (you or your institution, and type of participation)

### **Section 9 Further Comments**

Any further comments or suggestions that you believe might be useful to this evaluation are warmly welcome. Please use the space below to that purpose.

**Annex B: Average ratings of project adequacy**  
(Maximum rating is 5)

<b>Consistency with ECOTECH core goals</b>	
to attain sustainable growth and equitable development in the Asia-Pacific region	3.3
to reduce economic disparities among APEC economies	2.5
to improve the economic and social well-being of the people	2.9
to deepen the spirit of community in the Asia Pacific	3.6
<b>Consistency with ECOTECH priorities</b>	
Developing human capital	4.1
Developing stable and efficient markets through structural reform	1.9
Strengthening economic infrastructure	2.6
Facilitating technology flows and harnessing technologies for the future	4.0
Safeguarding the quality of life through environmentally sound growth	2.8
Developing and strengthening the dynamism of small and medium enterprises	2.5
Integration into the global economy	2.8
Human security and counter-terrorism capacity building	2.3
Promoting the development of knowledge-based economies	3.8
Addressing social dimension of globalization.	2.6
<b>Contribution to WG goals</b>	
Sustainable Development	3.5
Human Resource Capacity Building	4.1
International S&T Networks	3.9
Connecting Research and Innovation	3.6
Strengthening Technological Cooperation and Encouraging Best Practice in Strategic Planning	3.6
Enhanced Policy Dialogue and Review	2.6

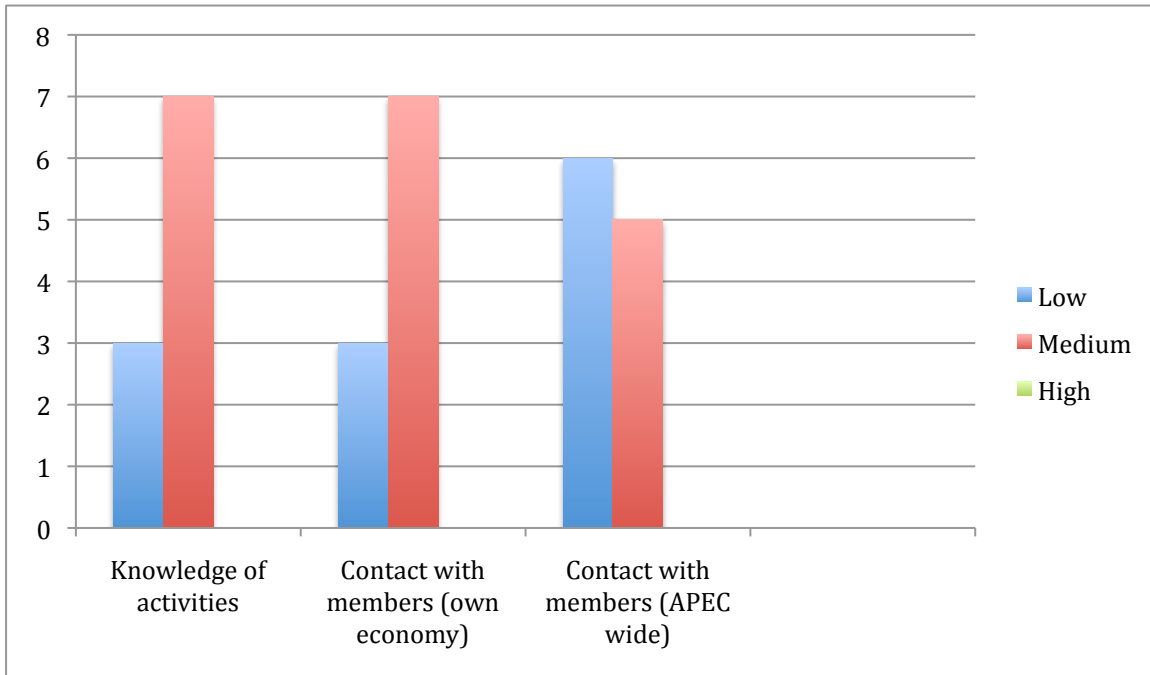
*Source:* processed from replies to the ISTWG Assessment Questionnaire by ten APEC member economies

**Annex C: Sector-wide impact of projects and interest in projects**  
(Maximum rating is 5)

<b>Sector-wide impact</b>	
S&T planners	2.7
Academic community	2.8
Business community	2.4
Overall impact	2.7
<b>Interest in projects</b>	
S&T planners	3.0
Academic community	2.6
Business community	2.2

*Source:* processed from replies to the ISTWG Assessment Questionnaire by ten APEC member economies

**Annex D: Degree of interaction of ISTWG members of other APEC groups**  
(Number of answers for a total of 10)



*Source:* processed from replies to the ISTWG Assessment Questionnaire by ten APEC member economies