

PD-ABC-270

U N C L A S S I F I E D

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER

Sri Lanka
Technology Initiative for
the Private Sector
383-0108

December 31, 1990

U N C L A S S I F I E D

PD-ABC-200

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A A = Add
C = Change
D = Delete

Amendment Number

DOCUMENT CODE

3

COUNTRY/ENTITY SRI LANKA

3. PROJECT NUMBER
383-0108

4. BUREAU/OFFICE
ASIA/PRIVATE ENTERPRISE

5. PROJECT TITLE (maximum 40 characters)
TECHNOLOGY INITIATIVE FOR THE PRIVATE SECTOR

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)
MM DD YY
11 2 31 9 16

7. ESTIMATED DATE OF OBLIGATION
(Under "B" below, enter 1, 2, 3, or 4)
A. Initial FY 91 B. Quarter 2 C. Final FY 91

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY 91			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AD Appropriated Total	4,000	914	4,914	10,490	1,510	12,000
(Grant)	(4,000)	(914)	(4,914)	(10,490)	(1,510)	(12,000)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country				735	6,000	6,735
Other Donor(s)						
TOTALS	4,000	914	4,914	11,225	7,510	18,735

9. SCHEDULE OF AID FUNDING (\$000)

A. APPRO-PRATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) PSEE	730	3	4			2,460		4,000	
(2) ARDN	260	1	50			2,454		5,000	
(3) EHR	660	1	874					3,000	
(4)									
TOTALS						4,914		12,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)
840 830

11. SECONDARY PURPOSE CODE
750

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)
A. Code DEL INTR TNG
B. Amount 4,000 1,500 1,000

13. PROJECT PURPOSE (maximum 480 characters)

To increase international competitiveness of and employment in Sri Lankan private industry by improving its performance in choosing, acquiring and mastering technologies, with support from U.S. business and technology, and by facilitating removal of policy impediments.

14. SCHEDULED EVALUATIONS
Interim MM YY MM YY Final MM YY
05 9 13 11 0 9 16

15. SOURCE/ORIGIN OF GOODS AND SERVICES
 000 941 Local Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY

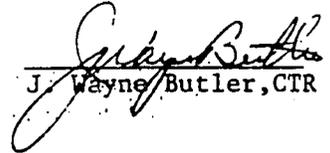
Signature 
Title Richard M. Brown
Mission Director

Date Signed MM DD YY
11 31 91

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MM DD YY

CONTROLLER'S CONCURRENCE:

I have reviewed and concur with the assessment of methods of implementation and financing procedures included in this Project Paper as well as the evaluation of the need for audit coverage.


J. Wayne Butler, CTR

PROJECT AUTHORIZATION

Name of Country: SRI LANKA

Name of Project: TECHNOLOGY
INITIATIVE FOR THE PRIVATE SECTOR

Number of Project: 383-0108

1. Pursuant to Sections 103, 105 and 106 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Technology Initiative for Private Sector Project for Sri Lanka (the "Cooperating Country") involving planned obligations of not to exceed Twelve Million United States Dollars (\$12,000,000) in grant funds over a five-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotments process, to help in financing foreign exchange and local currency costs for the Project. The planned life of the project is six years from the date of initial obligation.

2. The Project consists of technical assistance, training and procurement of commodities for private sector companies, primarily in export-oriented industries in the Cooperating Country, to increase their international competitiveness by improving their capability to choose, acquire and master technologies and thereby also generate additional employment opportunities.

3. The Project Agreement which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4. a. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the Project shall have their source and origin in the United States, except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

- 0'

Other

b. Prior to the date of execution of the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D., evidence that the Ministry of Industries, Science and Technology has been designated as the Cooperating Country's lead technical agency for the Project.

c. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish, in form and substance satisfactory to A.I.D., a statement of the name of the person holding or acting in the office designated in the Project Agreement as the authorized representative of the Cooperating Country and any additional authorized representatives, together with a specimen signature of each such person.

d. The Cooperating Country shall covenant that it will be the policy under the Project that all Project activities will be conducted without discrimination on the basis of sex, religious beliefs, age, ethnic or national origin.

Clearances: PSD:TPenner
PRJ: PBaldwin
PRJ: WJeffers
PRM: UErnst
PRM: DGarms
CTR:WButler
ENG: JPinney
AGR: GAnders
WID: DTsitsos



Signature: 
Richard M. Brown
Director

Date: December 31, 1990

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TECHNOLOGY INITIATIVE FOR THE PRIVATE SECTOR

(TIPS)

SRI LANKA

December 31, 1990

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ACRONYMS AND ABBREVIATIONS

AID	Agency for International Development
CDSS	Country Development Strategy Statement
EI	Entrepreneurs International
GSL	Government of Sri Lanka
IDP	Industrial Development Project
IDS	Industrial Development Statement
IESC	International Executive Service Corps
IPR	Intellectual Property Rights
NDB	National Development Bank
PACD	Project Assistance Completion Date
PIET	Partners In Technical Education and Training
R&D	Research and Development
Rs	Rupees
S&T	Science and Technology
SLBDC	Sri Lanka Business Development Corporation
SLTDC	Sri Lanka Trade Development Corporation
SME	Small and Medium Enterprise
SMI	Small and Medium Industry
TDF	Technology Development Fund
TTF	Technology Transfer Fund
TIPS	Technology Initiative for the Private Sector
VE	Volunteer Executive
VITA	Volunteers In Technical Assistance

1. PROJECT BACKGROUND AND RATIONALE

1.1. The Need and the Opportunities

Despite significant economic reforms implemented since 1977 and impressive income and employment growth through the early 1980s, remaining structural impediments and the effects of political strife have virtually halted the growth of incomes and contributed to high un- and underemployment since 1985. Unemployment is particularly high among youth, the age group most involved in recent political violence.

The gravity of the employment problem and sharp pressures on Government of Sri Lanka (GSL) budget resources have renewed the GSL's commitment to outward-looking, market-oriented, private sector-led economic policies. Implementation of these new reforms, slow at first, gained momentum during 1989 to the point that irrevocable changes are occurring in the structure of ownership and incentives across the economy. Since June, 1989, the Rupee has been devalued, privatization through public share offerings has begun, the first of four large state textile mills to be "commercialized" has been sold outright, management contracts are being let for state plantations, state control over the shipping industry has been eliminated, fertilizer subsidies have been removed, and a program to distribute state-owned land to private parties and to convert all leases of government land to fee simple land title has been announced. In 1990, further progress was made, primarily through continued privatization, the commercialization of other state owned enterprises, an overhaul of the tax system, and continued reduction of tariffs.

The response of the economy as it is increasingly exposed to domestic and international competition will depend on its ability to react to market signals and forces. Different sectors will respond at different rates. Agriculture, without fundamental structural change, may have reached a plateau in its ability to absorb additional labor and investment. Industry has the potential to respond more quickly and must grow, in the long term, to absorb a labor force that is already redundant on the agricultural land available in the country. There have been spectacular examples of industrial success (garments and the diamond cutting industry, for example). But there have been more cases of failure and lost opportunity.

The small size of Sri Lanka's domestic market means industry must necessarily target international markets. Success will require changes in both the policies that guide the behavior of industrial firms and the practices of the firms themselves as they transfer attention from the protected domestic markets of the past to the much more demanding markets of international trade. The ability to choose, adapt and master technology to become or remain competitive in these markets will be at a premium.

Constraints on the rapid development of Sri Lanka's export industry fall into two categories: "Macro" problems that have effects economy-wide and do not single out a particular industry (e.g., an overvalued exchange rate); and "micro" problems that are either specific to particular industries or subsector clusters, or that emerge at the level of the individual firm. While macro constraints are, for the most part, being addressed through broad reforms supported by a range of donor programs, micro-level barriers have been receiving less attention. Macro-level reforms frequently miss policies, regulations and procedures that undermine the competitive position of a particular industry or subsector clusters. Identifying and assessing such constraints typically requires an in-depth understanding of particular industries or market segments.

USAID performed several analyses to define the problem of private sector modernization in Sri Lanka, examine the conditions under which U.S. assistance might be effective, and identify the most efficient interventions. These analyses concluded:

1. Sri Lanka has reached a stage in the development of its industrial base sufficient to allow it to reach the status of "newly industrialized country" within the next decade.
2. Growth will most likely come from private sector industry, which increased its productivity by 15% during 1989 (whereas public sector industrial production declined by 21%).
3. The GSL policy framework will, if correctly implemented, provide a satisfactory environment for accelerated growth.
4. In order to achieve these levels of growth, the private productive sector first needs to attain a greater level of awareness of export market opportunities and requirements.
5. And secondly, the private sector needs to establish links with suppliers, markets and technologies which can sustain this growth.
6. The United States is particularly well placed to assist in the stimulation of awareness and the provision of technological support necessary for Sri Lanka's industrial modernization.

Deriving from these conclusions, a project entitled "Technology Initiative for the Private Sector" or "TIPS" has been developed to create an awareness that there are available technological options with which to achieve international competitiveness in industry.

The project will initially reduce the risks and costs of searching, acquiring and installing the needed technological innovation. TIPS is designed to be an uncomplicated mechanism which will :

- Generate demand for technology upgrading(*) from private firms in selected sectors by helping these firms diagnose their production and marketing problems and formulate requests for assistance to search for technological solutions;
- Improve access to information sources and provide temporary financial incentives to Sri Lankan firms to reduce their risk and help offset the costs of technology search and acquisition, especially through partnerships with U.S. businesses and through effective linkages between technology users and technology providers and brokers;
- Provide firms with a means to obtain low cost, rapid and reliable information on international technology, market conditions and potential foreign business partners to overcome their sense of geographic isolation.

The design of the TIPS project is based on the foregoing analyses and the demonstrated capability that the U.S. business community can supply the needed technology. The nature of the implementation mechanism to access the U.S. business community is a critically important aspect of this project. The International Executive Service Corps (IESC) has applied for assistance in the form of a cooperative grant to implement this program. IESC has a predominant capability to provide the operating linkage to enable the project to draw on these private sector resources.**

Competitiveness of industry requires more than new technology. The TIPS project will meet a necessary, though not sufficient, condition for modernization. Complementary conditions, such as adequate capital and credit facilities, continued open and competitive markets and the corresponding policy framework, as well as political security are also necessary.

* TECHNOLOGY is defined here as the technical and managerial knowledge, skills, equipment and processes used to develop, produce and market goods and services.

**USAID's need for support of the TIPS approach to Sri Lankan private industry was raised with IESC representatives in early 1989. Subsequent follow-up discussions in the course of IESC field visits resulted in submission by IESC of a draft application for a cooperative grant to USAID. The details contained in that application have been incorporated into this project paper.

1.2. Relationship to AID Policy

The Agency's current leadership has identified six principles to guide U.S. assistance to developing countries in the 1990's, with the first being "support for free markets and broad-based economic growth." The TIPS Project certainly supports that broad objective, aiming specifically at the industrial sector and its position in increasingly competitive and trans-national markets. While Sri Lanka remains a predominantly agricultural country, it is increasingly clear that future economic growth and employment will come most rapidly and effectively from the private industrial sector, provided local industries can sell their products in markets beyond the limited sphere of domestic demand, as well as compete at home with imported products. Being able to use technology productively is a key to international competitiveness, and the TIPS Project aims to help firms do just that.

A.I.D. has also articulated a Trade Development Policy (1986), which gives prominence to the development of links between U.S. and developing country private enterprise and strengthening of their mutual economic interests. The TDP paper notes a number of obstacles to improving LDC trade capabilities, among them the "lack of international marketing information, experience and networks." On this subject, the TDP paper says:

"Many firms in LDCs find it difficult to obtain the technical skills or knowledge needed to identify products appropriate for export. The lack of information is a particular problem when new export activities require a clear technical and managerial understanding of production possibilities, a firm grasp of present and future market conditions, and international marketing skills."

The TIPS Project seeks to help Sri Lankan firms overcome these problems, fitting nicely into the recommended strategy for "Trade Diversification and Technology Transfer," as described in the TDP paper:

"Where appropriate, Missions should direct program and project resources to encourage the transfer of technology, skills, and information required to overcome the limitations that threaten the comparative advantage of LDC exports or inhibit the emergence of new areas of comparative advantage in production. In this regard, A.I.D. programs should seek ways in which the capacity of indigenous firms can be increased in order to engage in, expand or diversify exports."

In its policy paper on Private Enterprise Development (rev. 1985), A.I.D. sets out conditions under which direct concessional assistance to private firms is justified and appropriate. Recognizing that such assistance is a form of subsidy -- and therefore a shelter from normal market forces that should guide resource allocations and investment decisions -- the PED policy paper restricts such assistance to instances in which "unusual

innovations or developmental risk" are present. Training and technical assistance are recognized in the paper as appropriate for such assistance:

"Concessional assistance is particularly useful when:

(a) Training and technical assistance has as its direct objective the improvement of competition in the industry.

(b) New technology is transferred to the country. In this case A.I.D. should take care that its use of concessionary finance is proportionate to the transfer of technology (not the normal commercial risk) and does not hurt the marketing of such new technology by the U.S. private sector through normal commercial channels."

The TIPS design, as described later in this paper, is fully consistent with these principles and requirements.

1.3. Relationship to CDSS and Mission Portfolio

USAID/Sri Lanka's development strategy has evolved over the past decade. Essentially, it moved from an emphasis on resource transfer, primarily aimed at raising food production for the local market, to an emphasis on improved resource management through market mechanisms. In sectoral terms, it has moved from an emphasis on the growth of agricultural production and incomes to a strategy of agricultural-development-led industrialization. That strategy implies continuing the promotion of higher incomes in agriculture in order to expand the domestic market for industrial products and to free up the resources needed for industrial development at all levels. But it requires that these efforts be complemented by initiatives to stimulate rapid employment generation in manufacturing, mining, and related services.

Given the small size of Sri Lanka's domestic markets and the consistently poor performance of its larger industrial enterprises - virtually all of them state-owned, typically slated for privatization and therefore likely to retrench possibly large numbers of employees - most of the growth in jobs will have to come from the growth of existing and the establishment of new small and medium size enterprises in the private sector. In an open-market environment, some of the growing or newly established enterprises will seek to exploit Sri Lanka's comparative advantages in competing in export markets. Others will compete with importers in serving local markets. In both cases, the market-based incentives, the free flow of information about opportunities and about the technology to respond to them, and the control and accountability guaranteed by open markets and an open society are critical to achieving and sustaining the changes necessary for income and employment growth.

USAID/Sri Lanka's private sector portfolio seeks to promote rapid employment growth in the industrial sector through improvements in

the policy environment and through specific interventions and initiatives to help private sector entrepreneurs and managers prosper in an open-market environment. As we see the government making progress in creating an effective open economy and moving toward rationalization of financial markets, knowledge - - of incentives, of technological options and of markets - - becomes paramount to reap and sustain the benefits that open markets promise. The TIPS project is designed to fill a critical gap, focusing on the transfer of technological knowledge and the application of technological skills.

The approach taken represents a deliberate departure from tradition: it emphasizes the creation and allocation of knowledge through market forces rather than through public institutional channels. It seeks to build a market for technology-related services from private (and possibly also public) sector providers through generic outreach and marketing activities, complemented by initial user-side subsidies for the acquisition of technological advice to the export industry.

Thus, the project supports the open markets theme of our strategy at two levels: first, by improving the access of firms in (selected) export sectors to technological knowhow, it enhances the competitiveness and export performance of Sri Lankan industry. Second, it contributes to the transformation of the "knowledge industry" in Sri Lanka, until now dominated by a few, typically rather ineffectual public-sector institutions, to a market-oriented system relying more on private sector providers of technological and related advice.

The project also bolsters the open society theme of USAID/Sri Lanka's strategy by contributing to a greater diversity of information on technological and economic issues. More information, widely spread in an open market context, is a key element in furthering democratic pluralism. At the same time, other activities related to the open society aspect will enhance the basis for the TIPS project: greater openness to alternative ideas and a more explicit competition of ideas will be critical to changing prevailing attitudes toward competition and toward the acquisition of the (technical) knowledge needed to compete more effectively.

The TIPS project is a key part of USAID's private sector thrust, and it complements other projects. For instance, the \$15 million Private Sector Policy Support project (383-0100) finances activities to improve private sector-government policy dialogue and also to strengthen the financial sector. The policy dialogue component strengthens private sector chambers and other organizations to conduct policy research, analysis, and dialogue with the government. Thus, it complements the TIPS project's needs

** Irma Adelman, "Industrialization and Poverty," Sri Lankan Association of Economists, 1989

for policy changes in the longer term. Another complementary project is the \$15 million Mahaweli Enterprise Development project (383-0090), which accelerates creation of private enterprise jobs ranging from microenterprises to large-scale ventures in the Mahaweli region. Some of these Mahaweli business firms may also benefit from technology transfer of TIPS. A third project which complements TIPS is the \$15 million Mahaweli Agriculture and Rural Development project (383-0086). This project increases agricultural productivity and net incomes of farmers in Mahaweli System B, some of whom may also benefit from the TIPS project. Also, the Commercialization of Agricultural Systems project (383-0111), planned for FY 1992, will develop and introduce technology specifically targeted toward high-income agriculture. Thus, the TIPS project, with its emphasis on technology transfer, is a key component of USAID activities to develop the private sector.

TIPS also complements the mission's new Natural Resources and Environmental Policy Project. Sri Lanka has recently launched new requirements for air, water and land pollution licenses and environmental impact assessments. These requirements will significantly affect the business environment of Sri Lanka as industries seek ways to meet new environmental standards. NAREPP is designed to help Sri Lanka develop the trained personnel and management institutions in the public and private sector to make these and other environmental laws and policies work. TIPS will support private sector initiatives to acquire and adopt technology that can meet Sri Lanka's environmental needs and standards, including needs for cost-effective processes and know-how to minimize air, water, and land pollution. In a larger sense TIPS helps create investments, jobs, and sustainable growth without which Sri Lanka's environment will continue to degrade from the significant impacts of poverty on land and water in rural and urban areas.

1.4. Relationship to GSL Priorities

The GSL Statement on Industrial Policy of 1987 gave high priority to private industrial development and continued the liberalization program, begun in 1977, to shift away from direct governmental management of the economy and towards reliance on market forces. The Industrial Policy Statement is the first time that a coherent strategy for the industrial sector has been presented. This Statement advocates an outward looking policy to compensate for the relatively small size and lack of purchasing power of the domestic market. The chief requirement for this strategy to succeed is the maintenance of an appropriate exchange rate. It also identified several policy measures as essential to success: (1) tariff reform to reduce protection of domestic industry and to encourage exporters; (2) revamping export incentives by consolidating fiscal incentives into a single instrument (e.g., a Transferable Tax Credit), bringing indirect exporters into the system of incentives and improving the system of export financing; (3) increasing the efficiency of parastatals by promoting privatization measures, such

as sale, closure and private sector management contracting; (4) an increased focus on the role of technology; and (5) improving the efficiency of the financial sector through reduced cost of intermediation, improved export and medium term financing, broader scope of capital markets, and new venture capital operations.

President Premadasa was elected in 1988 on the basis of a policy platform spelled out in the "Manifesto of Action for Investing in People - the New Vision". The ultimate vision is for Sri Lanka to reach the status of a Newly Industrialized Country during the next six years. This goal is a massive challenge to all industrialists, from the very small to the big. This Manifesto supports an outward looking economy with exports principally from the private sector being the engine of growth. Some interaction will also be between the export-oriented private sector and the firms simultaneously serving both the domestic and export markets.

These policy directions were further elaborated, on December 15, 1989, with publication of "A Strategy for Industrialization in Sri Lanka," issued by the Ministry of Industries (now the Ministry of Industries, Science and Technology). This Strategy provides an agenda for comprehensive reforms contemplated to encourage rapid export-led industrialization, as well as short term incentives to provide an initial impetus to investment. Under the new industrialization strategy, the Government will no longer establish or expand public manufacturing enterprises. On the contrary, the Government will encourage an open and competitive economy with a strong, dynamic private sector and a reduction of the public sector. This Strategy also calls for the Government to create an environment, in terms of physical and institutional infrastructure as well as of other facilities, conducive to rapid industrial expansion.

The Strategy for Industrialization sets forth 13 critical areas for emphasis. One of these is TECHNOLOGY FOR INDUSTRY. The Strategy describes that area as follows:

"With the promotion of a competitive environment in industry, the demand for technology will increase. Government will play a catalytic role in the transfer of relevant technology by assisting industries to identify, procure and absorb new technologies which will enhance Sri Lanka's comparative advantage. Acquisition of technology will be promoted by stimulating foreign investment.

A strategy for enhancing industrial technology will be worked out and implemented, generally on the lines recommended in the report by International Technology Management and Finance Inc's "Building the Base: A Proposed Action Plan for Industrial Technology Development in Sri Lanka" (September, 1988).

An effective technology information base will be built up, in order to assist domestic industry in the negotiation for and the acquisition of technology.

Every encouragement will be given for the promotion of Research & Development (R&D) and a closer relationship between R&D institutions and industry will be promoted.

The Industrial Development Board and R&D institutions will be required to play a lead role in providing technology support for small industries.

Foreign investment proposals in respect of minerals and mineral based industries and those utilizing local raw material will be encouraged, with a view to developing the industries and augmenting the knowledge concerning such industries."

The Technology Initiative for the Private Sector (TIPS) Project has been designed to address some of these GSL concerns.

TIPS will also be sensitive to the ways in which Sri Lanka's Strategy for Industrialization evolves within a new environmental framework and awareness. The proposed Action Plan of the GSL's Central Environmental Authority, within the Ministry of Environment and Parliamentary Affairs has suggested several needs to refine the industrialization strategy toward environmental as well as economic goals. Proposed recommendations include actions to ensure that pollution control is an integral component of all new manufacturing processes, that new technology transfers do not introduce new and harmful materials or waste products into the environment, and that incentives exist to foster environmentally sound practices and research and development.

1.5. Relationship to Other Donors

Other donors support development of Sri Lanka's industrial sector with a variety of projects. In the area of macroeconomic reform, the World Bank and the IMF are the main participants in helping Sri Lanka sustain a program to create a more open and competitive environment for industry, thus contributing to the need for and potential impact of the TIPS project. In the area of industrial finance, the World Bank and the Asian Development Bank jointly fund the Small and Medium Industry (SMI) and Industrial Development Project (IDP) series of projects through the banking system. The IDP III is also active in restructuring and strengthening the principal government industry RD&E support organizations, and the Sri Lanka Standards Institution. Assistance to improve vocational training has come from the World Bank and UNIDO/ILO, the Asian Development Bank, Germany, and SIDA. Export promotion programs, managed by the Export Development Board (EDB), are supported by the World Bank's IDP and a UNDP/UNIDO project in cooperation with the International Trade Center in Geneva, which furnishes specialized consultants through EBD to individual companies. These projects complement the TIPS project.

The two donor funded activities in Sri Lanka that have the most relevance to TIPS are the Technology Development Fund (TDF) and the Technology Transfer Fund (TTF), both financed under World Bank loans.

The TDF was approved as part of Industrial Development Project (IDP) III in the fall of 1988 to be administered by NDB. Due to uncertainty concerning the approval procedure the first grant was not approved by NDB until October 1989. The TDF (intended for the large scale sector and with a ceiling of \$30,000 per grant) has approved 34 grants for a total of \$426,000 during the first full year of operation, of which only one has been made to a government enterprise. Thirty one grants were made to regular customers of the NDB. The grants range from \$1,300 to \$30,000 with an average of \$12,000. The grants have been used to finance training abroad, foreign consultants, equipment for testing, quality assurance and laboratory equipment, as well as pilot or prototype efforts. No productive equipment has been authorized. Only two or three clients have had more than one grant. The availability of this facility has not been publicized, not even to the other banks for fear that the funds would be quickly exhausted. The managers of this fund believe that adequate promotional efforts would allow them to approve 12 grants per month with an average amount of \$12,000 for the foreseeable future (almost \$2 million per year). But, of course, they do not have funding in this magnitude available to them.

The TTF for SMEs (with a \$5,000 maximum) is part of SMI III. The NDB refinances SME project loans from seven commercial banks. It has a rediscount portfolio of 5000 projects. The TTF has only processed 30 grants since it began operation in June 1988 for a total of \$80,000. Funds were used for training abroad, foreign technical consultants, pilot production efforts, (a prototype 2 wheel tractor, a mechanism to weigh tea as it passes on a conveyor) and seminars. The TTF was widely publicized (newspaper ads, seminars and individual letters to 2000 of the 5000 firms that have project loans) but meaningful applications were rare. According to the manager, demand is not apparent because the firms cannot define their problem and they do not know where to go for information.

The principal difference between the two World Bank technology funds and the proposed TIPS project activities is that the TDF and TTF are relatively passive, while TIPS is built around a promotional base designed to raise entrepreneurial awareness.

- Although the National Development Bank has publicized the TTF, these are minor efforts compared with the scale of promotion such as is contemplated by TIPS. TIPS promotion efforts include industry surveys and short diagnostics by technical experts to help companies identify their technology needs and opportunities, low cost technology searches with the help of an office in the U.S. to identify alternate technology options, and assistance in preparing applications for Technology Grants.

- The TIPS Technology Grants staff will offer services to locate and secure foreign technical experts for the grantee, or arrange the grantee's visits to selected companies in the U.S. that may possess the needed technology.

- TIPS will, on demand, identify U.S. firms that offer a potential for business linkages with the Sri Lankan firm on a mutually advantageous basis.

- TIPS will follow up the Technology Grant with the grantee after completion to assist, if needed, in applying the knowledge gained.

Based on the project design experience it is believed that the promotion effort to generate demand within firms for technology search and acquisition is the key to overcome the complacency and isolation which prevails in the Sri Lankan private manufacturing sector.

2. PROJECT DESCRIPTION

2.1. Project Goal and Purpose

The goal of the project is to generate economic growth and employment by developing and sustaining Sri Lanka's market economy.

The purpose is to increase international competitiveness of and employment in Sri Lankan private industry by improving its performance in choosing, acquiring and mastering technologies, with support from U.S. business and technology, and by facilitating removal of policy impediments.

2.2. Project Approach

The key parameters of the project approach are:

- Project components are oriented to private sector development and should be kept as free as possible from rigidities of government administration. Procedures should be as similar as possible to those used by the private sector, but they must also be appropriate for government audit because of U.S. Government funding.

- Activities are to be demand driven. A client's matching contribution tests its commitment to institute the technological innovation. This sharing of risk assures the client's seriousness and justifies TIPS project management's acceding to clients' decisions regarding activities. Decisions concerning the selection of technology transfer agents (whether local or foreign) and content of individual assistance programs should be left to the applicants, as much as possible.

- The project does not contemplate institution building. It creates a temporary facility to manage the program for its six year life, to be phased out at project termination. While the project does not seek to develop the capabilities of local technical institutions or the consulting service industry directly, its intent to stimulate better and wider use of different sources of technological information by industry is likely to engender improvements on the supply side as well.

- Design Approach

Annex F describes the conceptual framework for the TIPS approach. From that model of technology transfer, two major aspects of project design emerge.

The most important aspect of designing a technology transfer program is acknowledging the difficulty of helping firms plan technological upgrading properly. If firms do not understand or cannot specify their needs, they will be unclear about expected results. The TIPS project will offer services to stimulate demand for technology change, help firms diagnose their needs, and help plan technology acquisition and installation. This aspect will be addressed by the TIPS Technology Promotion Program.

The second key aspect of a technology transfer program involves firms' willingness to change. When firms can envision clearly the benefits of technology change, they make decisions and act aggressively. Where this is not the case, firms need additional incentives to reduce the cost of technology acquisition. Business clients may be suspicious of the value of technological change and reluctant to invest in services that are not uniquely suited to their needs. The TIPS project will offer Technology Grants to reduce the costs of technology acquisition.

Thus, TIPS will package services to help clients develop a real understanding of their needs and will also provide financial incentives to search and install technological improvements. A sample of the services that firms might require include the following:

- General information about markets and industries
- Industry and product specific information
- Search networks to locate markets and technology
- Market and product feasibility research services
- Trade show participation and organization
- Business analysis and planning
- Needs analysis and business technology diagnostics

2.3. Project Components

This project will establish an "international bridge" between Sri Lankan manufacturers and U.S. sources of technology. It will include three components with a fourth component (Program Assistance for Policy Reform) to be authorized at a later date:

(a) The Technology Promotion Program will stimulate demand among Sri Lankan firms for technological change. TIPS will not be "reactive" - waiting for the firm to make the first move. Instead, it will be aggressive - establishing the idea in the mind of the entrepreneur that technology improvement is available and that its introduction will increase profits.

(b) The Technology Grants Program will lower the cost of searching for and selecting technological improvements to enhance the firm's production process. Soft and hard technologies will be eligible for this subsidy. (See Annex F for definitions.)

(c) The Regular (Standard) IESC Program will provide Volunteer Executives to continue IESC's six years of successful experience and to complement other TIPS project components by providing individual company technical assistance.

(d) Assistance to the GSL for Policy Reform (Future Component) to improve the business environment as it affects corporate decisions on technology, investment, expansion and trade.

Thus, TIPS will finance a broad spectrum of activities to help managers and entrepreneurs in export industries to articulate their technology needs, appraise the payoffs of better technology and devote more resources to technology upgrading and management. It will employ both temporary subsidies to lower the cost and risk of change and exploit the demonstration effect of successful endeavors. At the same time, TIPS will also work to lower barriers to better technology performance imposed by industry-specific government policies, regulations and procedures.

2.3.1. Technology Promotion Program

The Technology Promotion Program, managed by the implementing agency described in section 4, will stimulate demand for technical innovation and acquisition. This program will offer a variety of services needed for the planning phase of technology transfer:

- Industry Surveys

The Technology Promotion Program will conduct surveys of industries in which U.S. technological skills are readily available, that appear to have potential for technical improvements leading to export and employment increases. These industry surveys will generate interest and demand for technological upgrading. This program will be guided by market response to its promotion efforts and will direct its work accordingly.

While specific data on gender composition of the labor force of specific industries is not available, TIPS Technology Grants will collect and monitor company specific information and will draw on these data in the evaluation of the project.

These surveys will follow the approach which USAID used for the industry surveys which became a part of the TIPS design effort. Based on the experience of its staff and some educated guessing, the project implementation unit will select new sectors to explore for feasibility of technical change. It will collect data on industry structure, production and exports to help in the selection process. It might employ a local technical person to do a preliminary review of the sector. Once selected, it would design an industry survey similar to the three surveys performed as part of TIPS project development.

- Workshops

The program will sponsor workshops and seminars to spread the benefits of foreign technicians in Sri Lanka under TIPS auspices. Workshops will be scheduled to bring together representatives of firms in selected sectors to discuss technical trends, new process developments and market trends. A seminar would also provide a forum, for instance, to present options for environmental controls. Attendance at these workshops will include technical and management personnel from private sector firms, technical personnel of local S&T institutions, and local consulting firms.

- Diagnostic Studies

The activity will provide foreign technical experts (if possible, joined by local technical specialists) to perform short diagnostic studies for producers in selected sectors, to define firms' problems and propose solutions. These short term diagnostic studies will help firms understand possibilities for technological upgrading and assist in formulating plans for selection, acquisition and installation of enhancements. TIPS program will coordinate its operations with Sri Lanka Export Development Board programs.

- Industrial Information

This project component will provide technical information to enhance productivity. It will improve access, at low cost and with quick response time, to technical and market information available in the U.S. but, at this time, not readily accessible in Sri Lanka. This link between TIPS/Colombo and its U.S. window will take advantage of up-to-date communications technology. TIPS will encourage use of data on cost-effective technology for industrial pollution minimization to be developed under NAREPP in cooperation with GSL agencies.

TIPS U.S. office will respond to inquiries from the Sri Lanka office. It will not establish its own data base but will respond to

requests from TIPS clients by utilizing data sources maintained free of charge by others. It will also subscribe to commercial information services.

Some data sources are available in print, such as Thomas' Register and similar reference works. These documents will be provided to TIPS Colombo offices to reduce rudimentary inquiries to the U.S. office. Automated data retrieval services for technological information, such as VITA, the data center of the Georgia Institute of Technology, Control Data, Lockheed, the Smithsonian Scientific Information Exchange, will be engaged on a fee basis.

In Colombo, the 27 technical information repositories (see list included in annex G.1, technical analysis), such as CISIR, CITIS, NERD, The Rubber Research Institute, Coconut Information Center, the Export Development Board and the Sri Lanka Standards Institute, will be utilized. TIPS will encourage networking among these repositories and may assist in upgrading their capabilities by funding subscriptions to technical journals and other industry information. TIPS/Colombo will not build its own technical data base, other than a few often used reference works. It will rely on local information sources and will pay service fees to allow TIPS' client access. Alternately, it will refer clients to local data repositories if they are satisfactory.

The Technology Promotion Program will pay costs of subscriptions, user fees, transmission costs and upgrading of select local technical repositories. Once the information service gains recognition, TIPS will charge nominal fees.

- Local Technology Sources

The promotion effort will also establish linkages to local consulting and R&D institutes by inviting them to participate in project activities. They will be invited to join in workshops and seminars, and, more importantly, to participate in or perform diagnostic appraisals in concert with foreign consultants.

- Mass Media

The Technology Promotion Program will utilize mass media, in conjunction with existing promotional institutions, to stimulate appreciation for technological innovation.

- Policy Linkages

Sector studies will accumulate information on policy and regulatory constraints which impact specific sectors. This information will be passed to the TIPS Advisory Board so that it can be addressed in appropriate fora.

2.3.2. Technology Grants Program

The Technology Grants Program will provide funds on a cost-sharing basis to assist private firms choose, adapt and master technologies; use industrial information resources more effectively; develop new products and train personnel to operate new technologies. Annex. F provides a detailed explanation of the conceptual framework for the technology grants program. Annex. I describes the kinds of activities that will be financed by technology grants.

The grant application will require a plan for resolving a problem susceptible to technological change. The proposed action should be related to international market standards. Grant funds may be programmed to diagnose further the needs of the firm, to explore options for technological change and to facilitate adoption of the proposed change, including in-company training. The inputs for technological change should be balanced between hard technologies and complementary soft technologies.

While TIPS may target certain export sectors for promotion, grants will not be restricted to those sectors. Rather, they will be available to any applicant with a need for technological enhancement. Estimates of demand assume a liberal grant approval policy.

- Use of U.S. Consultants for Promotion Program

Subject to the concurrence of the Technology Grant client, the Promotion Unit may utilize a technical consultant who is employed under the Grant for a short period while that consultant is in Sri Lanka. In that event, the Promotion Unit will cover the cost of that consultant (fee plus per diem) for that period and utilize his services as needed.

- Eligible Applicants

Eligible applications will be privately owned manufacturing enterprises and engineering consultancy firms registered and operating in Sri Lanka (including the export free zones). Associations of private firms and associations of firms in a joint effort with research institutes are also eligible. However, applicants must provide some basis to support the assumption that they will be financially able to install the changes.

No applicant shall be discriminated against on the basis of sex, religious beliefs, age, ethnic or national origin.

- Ineligible items of expenditure

The Cooperative Agreement with the implementing entity under TIPS and all subgrants will include standard AID clauses that indicate various restrictions, rules and procedures governing AID assistance. In addition, however, there are special statutory

restrictions that might be an issue under TIPS and they have been addressed as indicated below.

AID Policy Determination No. 71 restricts AID assistance for palm oil, citrus and sugar products for export. No funds under TIPS will be utilized to assist firms in connection with export of palm oil, citrus or sugar products.

The so-called "Lautenberg Amendment" (currently Section 521(c) of the FY 91 Appropriations Act) prohibits AID from providing "direct" assistance relating to the manufacture for export of certain textile, apparel and leather items. When an intermediary is used, as under TIPS (i.e., IESC), to provide assistance, such assistance is considered indirect and therefore exempt from the restrictions of the Lautenberg Amendment unless (1) it is AID's intent to avoid the statute's effect by purposefully channeling assistance through an intermediary; or (2) AID has retained authority to approve or disapprove the projects funded by the intermediary and so long as (1) the intermediary exercises a sufficiently independent role in managing the aid so that it is more than a mere conduit for AID assistance and (2) the assistance is aimed at support of the private sector generally without prior knowledge of the ultimate beneficiaries.

The textile and apparel sector will not be targeted for assistance under TIPS; any assistance under TIPS to companies in this sector will be the result of unsolicited requests. Based on application of the criteria for exemption dated above, a determination has been made that the subgrants under TIPS are exempt from the Lautenberg Amendment restrictions.

The Bumpers Amendment (currently Section 521(b) of the FY 91 Appropriations Act) restricts AID assistance relating to the growth or production of any agricultural commodity for export which would compete with a similar commodity grown or produced in the U.S. The TIPS activities are not aimed at farmers; however, companies in the food processing industry may seek assistance under TIPS, although this sector is not currently a targetted industry under the Project. It is unlikely that random assistance to companies in the food processing industry would have a significant impact on U.S. exports of similar processed agricultural commodities; therefore, such assistance under TIPS would not be prohibited by the Bumpers Amendment.

To the extent the implementing entity is unclear regarding the application or interpretation of any U.S. law or AID rules and procedures to a particular request for assistance and/or regarding the eligibility of a grant applicant, such entity will be directed to refer such issues to USAID for clarification and interpretation.

- Grant Terms and Conditions

Grants will cover only activities which can be completed within 12 months. The maximum amount of any single grant shall be \$50,000, and the minimum, \$1,500. The grant shall normally be provided on a matching (50/50) basis for large scale firms and on a 67/33 basis for SMEs. The cut off point for the SMEs will be a level of annual sales turnover under \$8 million, which is the criteria used by IESC in its current operation in Sri Lanka.

An Approval Committee, described in section 4.1.1.(b), may reduce the large scale firm's contribution to 33% if the proposal includes linkages with SMEs. This reduction will be available to large scale applicants which will improve SME access to technology (e.g., training, seminars, technical and managerial advisory services), will upgrade technological capabilities of SMEs, or will promote greater specialization of production of SMEs (e.g., build supplier or subcontractor relationships).

TIPS will consider requests for services from firms not eligible for grant assistance if those firms are prepared to pay 100% of the cost of services.

- Check List

The following questions are provided as a check list to help in the staff review, before the application is submitted to the approval committee for their consideration.

- a) Has firm received assistance in diagnosing the perceived problem?
- b) Is the plan consistent with the purpose of TIPS?
- c) Is the firm's business plan submitted with the application, of which the technology being sought is part, reasonable in terms of goals, and proposed approach?
- d) Are the estimated costs reasonable?
- e) Can the requested services be arranged by TIPS in accordance with US laws and regulations?
- f) Can requested services be arranged by TIPS in accordance with Sri Lankan laws and regulations?
- g) Will the proposed innovation comply with U.S. laws and regulations and Sri Lankan laws and regulations?
- h) What are the key Sri Lankan policy, regulatory or procedural constraints that effect the proposed plan?

- i) Is the proposed technology upgrading compatible with and feasible within the constraints of existing infrastructure (energy, transport, communications), facilities and services?
- j) Does the firm have a reasonable expectation of securing financing to implement results of intended grant use? Does it have sufficient working capital to do what it intends?
- k) Does the firm have existing channels to foreign technology sources? Has it obtained and installed new technology from other sources during the past five years?
- l) Is the technology being sought suited to the scale of production being contemplated?
- m) Will the proposed change make a significant difference for the firm's productivity, production and export growth?
- n) Will the proposed activity cause significant environmental impacts? Can the impacts be mitigated? Is TIPS support of the activity appropriate to TIPS environmental enhancement policy?

Annex I provides a comprehensive description of the scope, terms and conditions of the Technology Grants Program. It gives complete instructions for preparation of the application as well as procedure for review, approval, execution and payment.

2.3.3. Regular (Standard) IESC Program

The Colombo office of IESC was established in 1984 for the purpose of transferring technical and management skills to Sri Lankan private firms by utilizing the services of retired U.S. volunteer executives to work for up to three months with requesting business organizations in Sri Lanka. IESC has also provided assistance to private Sri Lankan firms under its American Business Linkage Enterprise (ABLE) and Joint Venture Fund (JVF) activities. During the past six years of operation, IESC has brought 91 volunteer executives from the U.S. to Sri Lanka under this program. The requesting firm provides a contribution towards the costs of the volunteer. IESC covers the balance out of various sources of funds, some from AID Washington, some from USAID Colombo.

The TIPS project will fund the USAID Colombo share of the continuation of this program through 1996. Total funding required to carry this activity from the end of the present grant (and simultaneous exhaustion of the approved funding) in July 1991, to the end of TIPS in 1996, is \$1.2 million. This amount would provide funding to continue the program at the present level - 15 volunteers per year plus a small number of ABLE and JVF activities.

2.3.4. Programmatic Assistance for Policy Reform

As authorized by this document, the TIPS Project is dedicated to direct assistance to private-sector Sri Lankan firms in their efforts to improve their international competitiveness and technological edge. In analyzing the policy environment in which Sri Lankan industry operates, however, it has been evident that its less-than-optimal performance is due in part to policy-related constraints, and that efforts to promote policy reforms within the TIPS Project might contribute significantly to the success of the overall effort. This hypothesis has been strengthened by industry-specific analyses; in the gems/jewelry sector, for example, the regulatory regime governing import of raw materials, especially precious metals, imposes high costs and results in reduced productivity. The structure of business taxes and tariffs also contributes to these problems. Firms are acutely aware of the problems and anxious to see change in the underlying causes.

USAID is investigating the policy regimes that most directly affect business and technology and discussing with the GSL the most fruitful approach to improving the environment in which TIPS-assisted firms will operate. In a future Project amendment, anticipated for authorization later in 1991, USAID expects to authorize assistance to the GSL to promote appropriate policy reforms. The assistance would take the form of performance-based disbursement.

In its guidance to the Mission following review of the PID, AID/W required a Washington review of the policy agenda selected for this component prior to its authorization. USAID will prepare the necessary documentation for submission to AID/Washington as soon as the policy negotiations with the GSL reach a consensus on the outline of measures to be undertaken.

2.3.5. Contingency

Specific opportunities are likely to arise during the six year implementation stage of the TIPS activities, that will allow for small inputs to contribute to the project purpose. For example, there may be opportunities for TIPS to facilitate the upgrading of local S&T institutions' technical personnel and university faculty by financing intensive seminars, utilizing U.S. engineering, scientific or management faculty. The amount of \$300,000 has been set aside to allow for such opportunities, as well as to provide for unforeseen contingencies in other project components.

2.4 Special Issues Relevant to Project Design

2.4.1. Intellectual Property Rights

Sri Lanka's intellectual property rights (IPR) system is governed by the Code of Intellectual Property Act, effective January 1, 1980, and is based almost exclusively on model legislation for developing countries prepared, with U.S. support, by the World Intellectual Property Rights Organization (WIPO). The IPR system covers the full spectrum of property rights: trademarks, copyright, and patents, as well as industrial designs and unfair competition. An appraisal of the system, financed by USAID/Colombo in 1989, concluded that:

Sri Lanka has enacted well-balanced, comprehensive intellectual property legislation, and has established a relatively well-functioning patent and trademark registry. Although only a few members of the legal community possess sufficient awareness of intellectual property at the present, knowledge of the system is growing. In general, therefore, Sri Lanka's system of intellectual property protection should not create undue restraints on technology transfer.

Each year the Office of the U.S. Trade Representative (USTR) is required by section 1304 of the Omnibus Trade and Competitiveness Act to report on significant foreign barriers to and distortions of trade. Foreign trade barriers are classified into eight different categories. These are: import policies; standards, testing, labeling, and certification; government procurement; export subsidies; lack of intellectual property protection; service barriers; investment barriers; and other barriers. Of particular concern to AID, as it develops new programs, is the area of intellectual property rights. In the USTR's 1989 National Trade Estimate Report on Foreign Trade Barriers, Sri Lanka was not identified as a problematic country. Additionally, as discussed above, the USAID supported appraisal found the IPR system in place in Sri Lanka sufficient and functional.

The purpose of the TIPS project is to strengthen the private sector in Sri Lanka through its understanding and use of technology. During this project, it is expected that U.S. companies will be working with Sri Lankan companies in various forms, including: technical assistance, technical assessment, technology licensing, and technology development, which may result in patenting.

Prior to the commencement of any activities, the topic of intellectual property rights shall be discussed by the parties involved. The firms involved will be informed of the patent systems of the two countries and requested to come to a mutually agreed upon method of dealing with any licensing or intellectual property rights questions. It will be the responsibility of TIPS management to assure that such discussions occur. Where appropriate, licensing or patenting agreements shall be established by and between the private sector companies involved in the activity in question. In

the course of proposal review and selection, and technical assistance activities, it is likely that proprietary information will be available. It is the responsibility of TIPS management and its subcontractors to ensure that all business and confidential information is given full protection, in accordance with all applicable Sri Lankan and U.S. laws, regulations and administrative practices. Technological information acquired under this project may be proprietary to the client.

Appropriate language addressing IPR discussions and confidentiality issues shall be included in project implementation documents.

2.4.2. Demand Estimates for the TIPS Program

There is a lack of precision in the available data concerning the structure of Sri Lanka's manufacturing sector, resulting in a blurring of definitions concerning size groupings of firms. Various studies describe composition of the industrial sector in different ways, based on the use of different criteria. For example, Small and Medium scale enterprises (SMEs) are defined on the basis of different measurements.

The GSL SME definition measures assets: i.e., any firm with assets less than Rs.8 million, including land and buildings. (This will soon be raised to Rs.12 million.) Also, the Ministry of Industries has compiled a list of large scale enterprises based on annual sales turnover: i.e., in excess of Rs.2 million. The list (see below for sector breakdown) covers about 1,200 companies, but some companies with common ownership are listed as single enterprises. Each operating enterprise will be a potential applicant for TIPS Technology Grants Program.

The World Bank's Staff Appraisal Report for the third SME Project (November 1987) describes industry structure as follows:

"Currently, the manufacturing sector consists of 20 medium-to large-scale public manufacturing enterprises (PMEs) under the control of the Ministry of Industries and Scientific Affairs (MISA); about 50 corporations supervised by other line Ministries; about 400 large-scale registered private factories mainly in the Colombo area; 6,000 small and medium registered private factories; 25,000 dispersed small and cottage units concentrated in handicrafts and industrial services, and about 70,000 small informal agro-industrial units."

The universe of possible applicants for TIPS excludes Government owned enterprises. Research indicates that about 1,200 large scale private enterprises currently operate in Sri Lanka. (Of these firms, 650 are clients of the Sri Lanka National Development Bank.) The Ministry of Industries list of 1,188 large scale firms provides the following breakdown by sector:

Food, beverage and tobacco	103
Textile, garments, leather	190
Wood, cork and furniture	18
Paper, printing	42
Chemicals	56
Petroleum refining	4
Rubber products	37
Plastics	88
Pottery, china, glass	20
Non-metallic minerals	30
Iron/Steel - basic	9
Non-ferrous - basic	4
Fabricated metal products	68
Machinery, including electric	76
Transport equipment	18
Professional, scientific & control equip	9
Other nec.	19
Subtotal	<u>801</u>
Not classified yet	<u>487</u>
Total	1,188

The SME sector includes approximately 5,000 firms that might be clients of TIPS. These firms have obtained project loans from commercial banks, refinanced with the National Development Bank out of the World Bank's SME funds.

Two other estimates have been prepared of dormant demand for technology in the private sector. NDB officials believe they could generate about \$2 million per year in applications for assistance using World Bank funds. The Harrell Prefeasibility Study dated July 1990 estimates, based on two recent company surveys (one of 29 firms and the other of 60 firms), that demand for grants may be \$6 million, assuming a 50/50 matching formula.

It is estimated that the number of approved TIPS Technology Grant applications will run as shown in the following table. The average value of technology grants decreases over time as a result of increasing numbers of SME's in later years as well as increasing local contributions by firms.

Year 1	30 grants at \$27,000	=	\$ 810,000
2	60 grants at \$27,000	=	\$1,620,000
3	75 grants at \$22,000	=	\$1,650,000
4	75 grants at \$17,000	=	\$1,275,000
5	63 grants at \$15,000	=	\$ 945,000

Total	303 grants		\$6,300,000

2.4.3. Leveraging Follow-On Financial Resources

A variety of funding sources will be available to TIPS clients who have utilized the Technology Grant Program to select new technology in their production process and wish to acquire and install the technology. Several of these funding sources are supported by donor

assistance efforts. The TIPS implementing agent will build informal linkages between TIPS and these funding sources, and will refer TIPS clients to them.

Firms that seek such capital investment funds can consider the following sources:

- Foreign investors, especially from the U.S.
- Internally generated equity funds of the firm
- The Colombo capital securities market for new issuances
- The normal banking relationship of the firm
- The National Development Bank
- Development Finance Corporation of Ceylon
- Merchant Bank of Sri Lanka
- Venture Capital Funds

The TIPS Advisory Board, described in section 4.1.1.(a) below, will be an important vehicle for leveraging funds for follow-on investment because several financial institutions will be represented on the Board.

2.4.4. Non-Discrimination in Project Implementation

It will be a policy under the Project that all project activities will be conducted without discrimination on the basis of sex, religious beliefs, age and ethnic or national origin.

2.5 End-of-project status

The TIPS project seeks to improve the performance of Sri Lankan manufacturing enterprises in technology acquisition, adaptation and use. Two aspects describe the principal impact that the project aims for: accelerated productivity growth in the manufacturing enterprises that have participated in the program, and an active "trade" in technology advice and information.

The sought-after end-of-project status (EOPS) thus can be described in terms of actual gains in (total factor) productivity for the firms assisted, relative to a necessarily hypothetical "without" scenario, and in terms of industry behavior, increased awareness of the need for a continuous search for technological improvement, and increased allocation of resources to efforts to upgrade technology, including payments to providers of technological information. Project success, as defined by the expected end-of-project status, will also include a more varied and more active range of sources of technology advice. Within each of these broad categories, we have identified a series of indicators.

Project monitoring data will be maintained on all Technology Grants clients, both in terms of baseline data concerning their operations prior to the assistance and their subsequent performance. Means of verification may be difficult in light of the

deficiencies existing in sub-sector output and employment data but the evaluation plan provides for sample surveys to be performed if these deficiencies will not have been corrected by end of project.

- Productivity growth

1. Significantly higher productivity gains in companies that have received technology grants under the project. Ideally, we would want to measure these gains as total factor productivity, that is, total value added relative to the cost of labor inputs and capital services, but estimating the cost of capital may prove difficult. In that case, simpler proxies (such as labor productivity or capacity utilization) may be used. Value-added estimates as well as factor cost estimates should use border prices to eliminate the effects of price distortions. Finally, we are interested in incremental productivity growth, that is, the difference between what would have occurred without the project and that actually observed. Defining the reference case may prove difficult, since historical data are likely to be lacking and comparisons with firms in similar activities that did not receive any grants under the project would disregard any spillover effects.

Target: a minimum of 3 percentage points in the productivity growth rate per year over the "without" growth path, for example, 6 percent instead of 3 percent, measured from the time of first grant receipt to the end of the project.

2. Accelerated productivity growth in selected subsectors. Whether as a result of the intended targeting under the project, or as a result of "natural selection," some subsectors are likely to emerge as recipients of intensive TIPS assistance. We would expect that overall productivity growth in those subsectors lies significantly above what would have been achieved without the project intervention.

Target: a minimum of 1.5 percentage points in the productivity growth rate per year over the "without" growth path, for example, 4.5 percent instead of 3 percent, measured from the time of first grant receipt to the end of the project.

3. Increased sales, investment and employment in firms receiving technology grants under the project. These indicators are important, but they require more in the way of assumptions about causality, that is, to link them to project interventions. Even so, better marketing technology and lower production costs as a result of increased productivity should result in an expansion of the activity levels of the firm. Questions about causality may be handled by varying assumptions about the "without" growth path.

Target: a minimum of a 10 percent increase in aggregate terms over the "without" scenario, for example, a sales volume equal to 110 percent of the hypothetical without case, measured as the total from the time the first grant was received.

Note that the first two sets of EOPS indicators subsume specific indicators outlined in the log frame, such as lower rejection rates, less down time, etc. The rationale for focusing on productivity is simply that unless these qualitative improvements are reflected in actual productivity gains, they remain abstract. We can use shifts in such qualitative indicators, however, to construct the "without" scenario.

- Technology search behavior.

1. A significant increase in the percentage of key managers in export industries who perceive the need for technological upgrading. As noted in the analysis, a baseline survey showed a high level of technological complacency among top-level managers in export industries. For the project to have been successful, the percentage of such managers who feel that their current technology does not require any special efforts to compete more effectively must decline significantly.

Target: An increase in the aggregate percentage of key managers who recognize the value and need for technology innovation from 40 percent to above 70 percent, with higher percentages among firms receiving technology grants.

2. A significant increase in the allocation of resources by export industries to technology search, development and adaptation. For the project to be successful in institutionalizing a continuous process of technology upgrading, resources devoted to this task need to be increased on a sustainable basis. Relevant resources include staff time as well as direct outlays.

Target: An increase in total resource allocation (in real rupees) for technology search and development by 50 percent in selected subsectors (same as above, item 2 under Productivity), and by 100 percent in companies having received grants.

- Increased diversity and use of technology sources

1. A significant increase in the familiarity with and use of technological advice on the part of key managers. The preliminary analysis during project development suggested that many key managers in export industries are familiar with only a few sources of technological information and advice, and are using even fewer. Since the project is designed to develop a market for technological advice for sustained technology upgrading, better knowledge of potential providers and greater use of their services represent appropriate indicators of desired impact.

Target: A doubling of the recognition percentage for sources of technology advice, and an average increase in usage of 25 percent.

2. Establishment of coventures (including joint ventures, sourcing, subcontracting, etc.) with U.S. businesses. The project design reflects our conviction that closer collaboration with American business will not only benefit Sri Lankan exporters in terms of improved access to technology, but will also create additional business opportunities for U.S.-based investors. Out of the roughly 300 technology grant recipients, we would expect that some establish formal coventures with U.S. businesses.

Target: Twenty formal coventures established with U.S. investors or business participation.

By the end of the project most of the firms which will have received project assistance should have developed an internal capacity to manage technological changes and to avail themselves of information channels to undertake further technological improvements. These firms should have been weaned away from the subsidy programs embodied in TIPS. Ultimately, the firms should be willing to pay market prices for technological information, engineering services, market exposure feasibility studies and the many other business services embodied under the TIPS project.

The criteria for grant approval may be modified during the life of the project, to require an increase in the firm's contributions and reduce the subsidy elements, as conditions warrant. The degree to which these cash contributions by the firm can be increased without reducing the demand for the TIPS services will be an indicator of the degree of success of the project.

In the event difficulties should arise in accurately measuring the project's performance against the above described targets the monitoring data will be used to measure against the following additional criteria:

- 150 Technology grant clients will have invested in new technology and installed that technology in their production process;

- The average production increase for all Technology Grants clients shall be no less than 10% within 12 months of the final date of the Technology Grant expenditure;

- 75 regular VE clients will achieve an average of 10% production increase within 12 months of program end.

3. COST ESTIMATE AND FINANCIAL PLAN

This financial plan is predicated upon implementation being performed by IESC, a non-governmental organization, who has applied to USAID for assistance in carrying out its program under a Cooperative Agreement with USAID. For implementation details, please see the next section.

The following tables are presented on an obligations, or commitments, basis because funds must be fully available in one year to be expended, or disbursed, in the following year. For example, when Technology Grants are committed, they will be disbursed over a one year period. The only exception to this presentation is Table 3-2 (Projected Expenditures by Fiscal Year) which has been adjusted to show a lag in disbursements after commitments.

3.1. Summary Cost Estimate and Financial Plan

Total project costs are estimated at \$23,735,000, comprised of \$17,000,000 in AID project funds and \$6,735,000 equivalent in contributions from Sri Lankan private sector companies. AID's contribution amounts to 72 percent of total costs, and the Sri Lankan contribution amounts to 28 per cent, which exceeds the required 25 percent minimum contribution. A breakdown of estimated costs by project component is given below. Information on project cost estimating bases is given in Annex H.

Table 3-1: Summary Cost Estimate and Financial Plan (\$000)

Source Component	AID Project	Private Sector	Total
Technology Promotion Program	\$4,000	-	\$4,000
Technology Grants Program	6,300	\$6,270	12,570
Regular IESC Program	1,200	465	1,665
Evaluation & Audit	200		200
Contingency	300		300
Programmatic Assist. For Policy Reform	5,000*		5,000
Total	\$17,000	\$6,735	23,735

*Please note that the \$5.0 million component for Programmatic Assistance for Policy Reform is not being authorized at this time.

3.2. Project Obligations and Expenditures by Fiscal Year

Table 3-2: Projected Expenditures by Project Year (\$000)

Project Year	AID	Private Sector	Total
1	\$4,000*	\$ 300	\$4,300
2	4,800*	1,100	5,900
3	2,800	1,400	4,200
4	2,400	1,800	4,200
5	2,100	1,700	3,800
6	900	435	1,335
Total	\$17,000	\$6,735	\$23,735

* Assumes authorization and obligation of policy reform component and satisfactory introduction of policy changes by end of Project Year 1.

An important consideration for project budgeting is to avoid a situation where the implementing agent is required to reject good applications for technology grants due to restricted funding availability. If, however, demand exceeds expectations, then consideration will be given to obtaining authorization for an increase in funding levels.

3.3. Methods of Implementation & Financing

Proposed implementation and financing procedures are:

METHODS OF IMPLEMENTATION AND FINANCING

Item	Method of Implementation	Method of Financing	Approximat Amount (000)
Technical Assistance, Training & Commodities	Cooperative Agreement	Direct Payment	\$11,500
Evaluation & Audit	Direct AID Contract, Buy-in to Centrally Funded Project, or PSC	Direct Payment	200
Contingency	Direct AID Contract	Direct Payment	300
Programmatic Assistance For Policy Reform	Performance based Disbursement	Direct Payment	5,000
Total			----- \$17,000

3.4 Payment Procedures

AID will enter into a Cooperative Agreement with IESC which will provide for reimbursement of IESC expenses and sub-grants. The preferred method of payment will be by the USAID controller in Colombo against monthly vouchers. For local currency expenditures, IESC's Colombo office will make payments from its local currency account which is fed by client contributions and dollar transfers from IESC headquarters converted to local currency.

IESC will disburse grant funds for payment of the project's share of costs, or a portion thereof, in either of the following ways:

- 1 - reimbursement based on the client's documentation of the expenditures, or
- 2 - in an advance payment when procedure (1) would pose a hardship for the grantee.

The latter procedure will normally be used only for a portion of the grant, not to exceed 50%. When the latter procedure is used, IESC will obtain satisfactory assurance of performance and subsequent documentation of expenditures from the grantee. Failure to provide such documentation will make the firm liable for repayment of the advance. TIPS clients will pay their required share in rupees, regardless of the allocation of grant costs between dollars and rupees.

3.5. Audit Needs

A sum of \$200,000 is provided for evaluation and audit during the life of the project and is considered to be adequate. The perceived audit coverage needs and costs involved are for future financial and compliance audits of IESC, the project implementor. Two non-federal audits to be defined over the life of the project have been estimated.

3.6 Implementation Assessment

Except for monies budgeted for audit and evaluation, all monies budgeted for the project will be committed through the IESC Cooperative Agreement for implementation by IESC. Annex J provides details of IESC's unique abilities to implement the project as designed. The Technology Grants component of the project is similar to a current World Bank program which has been more successful with the larger scale Sri Lankan companies than with medium and small businesses. IESC's implementation of this component is expected to be successful as a result of a more active approach (as opposed to the World Bank's passive approach) to promoting demand for these funds. IESC's capability to implement the promotion program and regular IESC activity indicates that the totality of the effort will be successful. Further review of additional materials including a study of IESC made by the Center for Business and Government Studies, Columbia University, Graduate School of Business (December 1985); external evaluation of TIS/Dominican

Republic conducted by William Fisher, for the InterAmericas Group; internal IESC evaluation of TIS/Dominican Republic; and brief evaluation (internal) of the JVFF, TIS pilot programs in the Dominican Republic and Belize (the only TIS programs that have been completed) provides confidence that IESC has the capabilities to implement this project as designed. These source materials are available in the USAID/Sri Lanka Controller Office for review. Implementation of audit and evaluation activities will be done through AID Direct Contracts.

4. IMPLEMENTATION PLAN

In light of the project's design parameters (described in Section 2.2, above), a determination has been made to accept the application of the International Executive Service Corps (IESC) to be the implementing agency. The project will have an Advisory Board (composed of representatives from USAID, the GSL, and the private sector) that will bring a broad range of technical, entrepreneurial, policy and financial expertise to bear on questions of overall project strategy. The Board will not intervene directly in individual TIPS operating decisions, but will advise the implementing agent.

4.1 Implementation Agency and Responsibilities

The implementing agency is the International Executive Service Corps, (IESC). Established in 1964 as a non-profit corporation under the inspiration of David Rockefeller, IESC fields retired volunteer experts to provide technical assistance to companies in developing countries. IESC headquarters is located at Stamford, CT, and it has offices in 25 countries. It has enjoyed a special, continuing relationship with AID since its incorporation, when AID started providing core grants. It is capable of accessing the U.S. private manufacturing sector, both directly and through its network of 12,000 volunteer executives. Moreover, IESC has undertaken intensive and comprehensive programs for AID in other countries (Eastern Europe, Egypt, Morocco, etc.) and has performed well. See section 4.3 below for the rationale for selection of IESC based upon a waiver of competition.

IESC's Colombo office was established in 1984 and has provided 91 retired executives to work with Sri Lankan companies. To carry out the technology initiative project components, IESC will create a special project management section, described below. It will call upon its network of retired volunteer executives for use both in Sri Lanka and in the U.S. to access technology sources and assist Sri Lankan firms in their quest for information and search for technology options. But TIPS will need additional resources well beyond these capabilities. IESC will need to develop subcontracting relationships with others, including active U.S. firms, technical,

business and marketing service firms, technical and academic institutions, technical information suppliers and similar organizations to secure the required services for TIPS. To implement the regular IESC project component, IESC will rely on its normal organization and operating procedures.

4.1.1. Technology Initiatives Project Components

(a) TIPS Advisory Board

Advice on the overall project direction will be provided by the TIPS Advisory Board, which will include representatives from the following organizations:

Government of Sri Lanka:

Ministry of Industries, Science and Technology and other institutions selected by them.
Export Development Board

USAID

Others:

Members to be determined, will be selected from financial institutions such as National Development Bank, business organizations such as Ceylon Chamber of Commerce and private business representatives nominated by the Industrialization Commission.

IESC Country Director and IESC Project Manager, will serve as ex-officio member and Secretary, respectively.

The Board will bring a broad range of expertise to bear on questions of overall project strategy, such as:

- whether sectors chosen (or under consideration) for promotion are appropriate in terms of economic/financial and environmental viability, opportunities for technological upgrading and prospects for international competitiveness;
- whether the project is generally on track toward achieving its objectives; whether activities undertaken have been effective in producing intended results;
- whether policy constraints are impeding technical change in selected industries and, if so, how they can be addressed.

The Board shall also perform the following functions:

- advising on policies and recommending guidelines and criteria by which TIPS project components should be implemented;
- reviewing and commenting on the TIPS annual work plan;

- monitoring awards and rejections of Technology Grants on a quarterly basis to ensure adherence to project requirements and policies;
- assessing the effectiveness of the implementing agent's efforts to involve local technical resources in the work of foreign experts working in Sri Lanka under TIPS.

(b) IESC TIPS Project Management Section

As proposed in the IESC draft application to USAID, dated November 1990, IESC/Colombo will establish a new section to manage day-to-day operations of the technology initiatives components. This section will comprise the following:

- Project Manager

The key person will be the Project Manager, who will manage the project implementation units described below. IESC will recruit the Project Manager for full time assignment. The Project Manager will be a highly qualified engineer with industrial management experience. S/he will report to the IESC Country Director, who in turn, reports to IESC's Regional Vice President at Stamford, CT.

- Promotion Unit

The Promotion Unit will carry out the Technology Promotion Program, described in Section 2.3.1 above. Located in Colombo, it will be responsible for creating demand among private sector Sri Lankan firms for project services in technological upgrading and problem solving. It will provide: industry studies, diagnostic studies, technological and market information, workshops, and assistance in applying for Technology Grants. It will utilize all avenues of the mass media to generate a public awareness of the benefits and opportunities offered by technology to enhance productivity. The Unit will include two local professional and one clerical staff.

The Promotion Unit will also operate the technology and market information service. It will network with Sri Lankan repositories for clients' use, and, in return, it may provide these repositories with additional data, reference works and subscriptions to periodicals from abroad. This information service will be complemented by the U.S. office which will subscribe to technical information services to respond quickly and effectively to Sri Lanka client requests.

- Grants Unit and Grant Approval Committee

The Grants Unit will assist potential clients in the preparation of their applications and will review, recommend approval, and manage the Technology Grants Program intended to reduce firms' costs of technological searches and upgrading. When the project is operating in full swing, the unit will be preparing an average of

1.5 grants per week for approval. Three professionals and one secretary should be able to manage and follow-up that level of effort.

The Grant Approval Committee will approve, or decline, applications for Technology Grants. The Committee will comprise: IESC Country Director, Project Manager, Chief of the Grants Unit, and Chief of the Promotion Unit. Criteria for grant approval are given in Annex I.

The procedures for bringing technical consultants to Sri Lanka and for sending Sri Lankan businessmen abroad will be structured to adhere to the principle of simplicity to the maximum extent practicable, within the laws and regulations of the U.S. and Sri Lankan Governments. For example, business persons who travel to the U.S. under the EI program should secure their own business visas rather than sponsorship visas. Tax exempt status will be sought for all TIPS expenditures for expatriates who provide services under the TIPS program.

Technology grants will not be forced to fit the IESC Volunteer Executive (VE) program. In many instances it will be more cost-effective to hire active short term technical experts for multiple two to three week assignments spaced over a six month time period, than to arrange a standard three month VE program.

- Monitoring, Evaluation and Controller Staffs

The Colombo office will also have a small Monitoring and Evaluation Staff to maintain a continuous record of activities so that impact of operations can be measured. Since the Project Manager will be responsible for managing a substantial amount of money, a Controller/Audit Unit will also be required.

- U.S. Office

A U.S. office, located at IESC headquarters, Stamford, CT, will operate as the Colombo office's window to the U.S. It will provide quick response to requests for: (a) market and technology information and (b) U. S. technical personnel. It will draw on the resources of IESC in the U.S., and its staff will receive guidance from IESC's Trade and Investment Service. This office will also support the Colombo office's contacts with the Entrepreneurs International Program and AID's Office of International Training.

4.1.2. Regular IESC Program

The regular IESC Volunteer Executives Program is an important component of this project. It will continue to operate, as it has in the past, managed by the IESC Country Director. It will have its own budget and continue to follow its own selection criteria and operating procedures. No additional staff is required for this project component.

The organizational structure of IESC's Colombo operation, including both the technology initiatives and regular programs, is described in the chart on the page immediately following.

4.2. Implementation Schedule

4.2.1. Schedule

Event	Date	Responsible
Project Authorized	12/90	USAID
Project Agreement Signed	1/91	USAID & GSL/
Conditions Precedent Met	2/91	GSL
PIO/T Signed	2/91	USAID & GSL
Cooperative Agreement Signed	2/91	USAID & IESC
Project Manager Mobilized	3/91	IESC
New Staff for Colombo Mobilized	5/91	IESC
Promotion Unit Starts	6/91	IESC
Grant Unit Makes First Grant	8/91	IESC
Mid-Term Evaluation	6/93	USAID, GSL & IESC
Final Evaluation	10/96	USAID, GSL & IESC
Project Assistance Completion Date	12/96	

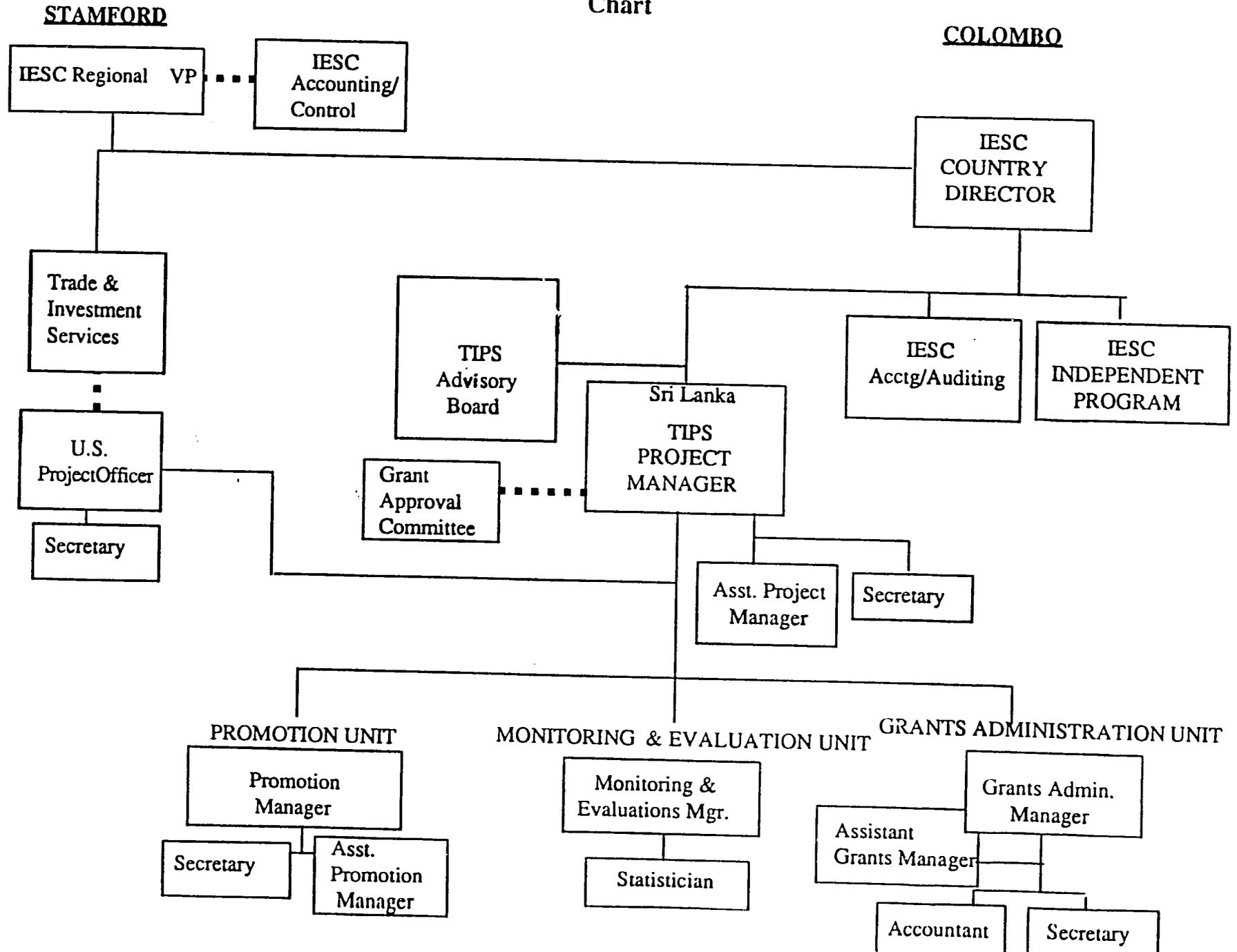
4.2.2. Fast Start Actions

This project is designed for a fast start. The Promotion Unit can schedule one seminar immediately after project start-up to publicize the initiation of the TIPS program, encourage firms to apply for Technology Grants and explain to local technical consultants and S&T institutions how they can participate in serving private firms which receive Technology Grants.

Initially the Promotion Unit would follow-up the three industry surveys (ceramics, light industry and gems/jewelry) performed during project design. An outline of possible actions is given below. Also, one additional sector study should be selected from: tea machinery, rubber products and food processing. The Promotion Unit should be able to pursue at least three new sectors during the first three years of project implementation, depending on the flow of applications for Technology Grants. That level of activity probably will decrease during the latter years if the project is successful in creating awareness of the benefits of technological enhancement.

TIPS/IESC

Organization Chart



Follow-up actions for the three selected sectors are:

- Light Engineering

Because this sector is broad and complex, a sub-sector analysis should be performed to choose the areas and firms likely to enter export markets. A broadly based industrial consultant should be engaged for three to six months to develop the sub-sector analysis and assist companies prepare grant applications. The first companies should be well known members of industry associations so that they can broadcast the benefits of technological change. This would develop "good press" to stimulate other grant applications.

- Gems/Jewelry

At project commencement, the project manager should send a letter explaining the purpose of the grants to 30 of the larger gem and jewelry companies. The letter can invite each recipient to set up individual appointments with a technical consultant who will be in Sri Lanka for about four weeks. These appointments, due to the proprietary nature of the sector, should always be held on a one-on-one basis. A discussion of specific problems facing the company should be followed by preliminary suggestions of possible grant assistance. It should be possible to do two interviews per day so that the interviewer can report salient facts to the project manager. As part of the promotion scheme it might also be helpful for firm owners to attend major U.S. gem and jewelry shows. A further promotion scheme might be the establishment of a library for the gem/jewelry sector.

- Ceramic Industry

This sector should be approached on a one to one basis at project startup. In the large scale segment, a four to five week consultancy by a technical expert should allow sufficient time to develop the following illustrative grant applications, after privatization of public sector companies:

- Technology development and business plan for a wall tile factory, expansion of floor tile capacity, and business plan for an export marketing company focused on the United States and the E.C.C.;

- Technology review for production of Terra Cotta pottery and roofing tiles, export marketing program;

- Product design, master mold making, training, and export marketing program for high quality artware; and

- Kaolin and feldspar beneficiation technology, and stoneware tableware design and manufacturing technology.

For the SME segment, contact with several companies exporting small volumes of low end artware will provide the necessary guidance on what they need. An opportunity to upgrade the quality of goods produced and to enlarge the scale of operations is available at these companies.

For the cottage scale industry, the TIPS project manager can establish contact with the Sri Lankan Ceramic Society to identify the more progressive art/potteries. There are several consultants in this organization and they can provide introductory contacts. Several small projects might be formulated in this manner. Once started, this segment could become self perpetuating in terms of continuing small projects tailored to the various sections of the country. A typical project could include:

- Gathering a selection of marketable products from the U.S. and E.C.C.;
- Providing design guidance to individual companies;
- Visiting the Los Angeles or New York Merchandise Trade Center and also small scale potteries; and
- Evaluating the best technology for the scale of operations in the local factory.

Other Startup Actions:

Other actions required to set up the TIPS Colombo operation during year one are:

- set up technology information access service; network the repositories of technical information as called for in the Project Description, (section 2.3, above)
- set up the Grants Administration Unit; make sub-contracting arrangements with other suppliers of technical experts;
- set up the Monitoring and Evaluation Unit as described in section 5, below; and
- set up the U.S. office.

4.3. Procurement Plan

4.3.1. Contracting Mode

- Cooperative Agreement

After execution of the Project Grant Agreement with the Government of Sri Lanka, USAID will issue a PIO/T for a Cooperative Agreement between USAID and IESC, designating IESC as the implementing agent

for TIPS. The agreement, following AID Handbook 13 procedures, will cover the following project components:

- The Regular IESC Program for the period August 1, 1991, to the end of the TIPS project (1996), with a line item budget of \$1,200,000.
- The Technology Promotion Program, including operations of both the Colombo and U.S. offices, covering the six year period of the project, with a line item budget of \$4,000,000. This budget will also cover the management costs of the Grants Unit, the Monitoring and Controller staffs.
- The Technology Grants Fund to provide matching contributions to private Sri Lankan firms for technology acquisition efforts, in the amount of \$6,300,000 for the life of the project.

The Cooperative Agreement will provide IESC with authority to manage the project components in an efficient manner. For example, IESC may find it more efficient to contract with a local bank or accounting firm to administer the disbursement and accounting of the Technology Grants Fund than to staff up to perform that function. Likewise, the preparations and pre-departure orientation for company officials who will avail themselves of the EI program may be performed by designated agents.

IESC has proposed to subcontract with Partners in International Education and Training (PIET) to schedule and arrange the U.S. EI programs for approved Technology Grant recipients, as described below in section 4.3. This subcontract will be based on the standard subcontract form which has been worked out between AID/W's Office of International Training and PIET. The subcontract will cover all PIET activities related to EI programming. PIET will advise IESC of training costs and develop a system whereby these costs will be paid by IESC. All AID Handbook 10 requirements and other AID regulations will be followed under this subcontract. IESC will issue non-funded PIO/P's for record keeping purposes only. Sri Lankan clients will secure U.S. visas (V-2 business) from the U.S. Consul.

IESC has also proposed to subcontract with consulting firms, academic institutions and public organizations to locate technical experts when IESC Volunteer Executives are not used.

- Technology Grants

The Technology Grants Program will finance services provided in the U.S., services of U.S. based consultants working primarily in the U.S. or Sri Lanka, Sri Lankan based consultants working world wide and training of Sri Lankans in the U.S or Sri Lanka. Grant funds can also be used by the grantees for travel world wide.

Grant funds are not intended to finance major capital acquisitions. A maximum amount of \$5,000 per Technology Grant will be permitted for related commodity purchases, and the recipient will use IESC approved procurement procedures.

Technology Grants to Sri Lankan businesses under the IESC Cooperative Agreement will be subject to requirements of AID Handbook 13, Chapter 6, Section 6H and Chapter 4, Appendix 4D. Among the rules imposed by these standard provisions are those dealing with source, origin, and nationality, commodity eligibility, and competition in the procurement of goods and services. Payment procedures are described in section 3.4.

4.3.2. Waiver Justification

A waiver of competition will be sought for award of the Cooperative Agreement to IESC, based upon its predominant capability. The waiver justification is attached as Annex J.

4.3.3. Training Plan

This project will foster training in practical, technology related activities. People will learn informally and formally, on-the-job and off-the-job. Some will learn from experts who provide technical assistance; others will learn by visiting U.S. trade shows and plants.

TIPS will facilitate the establishment of training programs within the firms that apply for Technology Grants by including technical assistance in the grant approval. Other TIPS training activities will include seminars and workshops for industry sub-sectors as and when foreign technical consultants are in Sri Lanka, and visits to manufacturing operations in the U.S. and enroute.

- The Entrepreneurs International Program

AID's Entrepreneurs International (EI) Program will be a particularly effective tool to help carry out the project purpose. Under the EI program an AID contractor, PIET, will program short visits for Sri Lankan business personnel to visit U.S. firms. These visits will generally run for three to four weeks. They are a low cost initial effort to expose Sri Lankans to U.S. industrial processing techniques, and the application of both soft and hard technologies in the production process. Cost of such visits, excluding international airfare (U.S. internal travel and per diem, as well as programing costs) is in the range of \$6,000 per one month visit.

The Entrepreneurs International program will be a component of the regular TIPS Grant program in terms of review and approval procedures. A firm may request a grant only to fund a portion of the cost of an EI arranged visit, or it may include an EI-arranged

visit as part of a multi-activity grant package. In the case of the stand-alone EI activity, the request would be processed under the normal Technology Grant approval mechanism.

The EI program for market orientation or technology reconnaissance trips is but one of a number of tools to provide the required services to the client firm. It is likely that at least one and perhaps two EI programs would be included in any comprehensive package of assistance approved for a large firm.

The Promotion Unit will use the EI program to experiment with techniques to reach special segments of industry. A special promotion effort could utilize the EI program as an initial grant to SMEs, to advance the project purpose. In the case of Technology Grants to small enterprises that provide only for visits to the U.S. in conjunction with the EI program, the firm's contribution will be only the cost of the international airfare, irrespective of the percentage of contribution that this would represent to the total grant. All other EI program costs will be met from the grant.

5. MONITORING AND EVALUATION PLAN

5.1. Monitoring Plan

The IESC Evaluation and Monitoring Unit (see organization chart, Section 4.1.) will track all project components. It will maintain statistical and qualitative information on all services provided. It will maintain appropriate controls and information systems to track the Grant disbursements and client contribution, and document program activity results and follow-up requirements. It will also support the USAID mid and final evaluations.

To facilitate project reporting requirements and in preparation for the scheduled evaluations, IESC will monitor client performance after the completion of the Technology Grant, including investment and installation of new technologies, employment, production and export performance changes, quality improvements and, to the extent possible, profitability changes. Base line data on companies that apply for Technology Grants will be collected to measure actual changes. In designing the structure of the data collection, attention should be given to the EOPS targets (section 2.5, above) so that the data will enable the evaluations to perform meaningful measurements. USAID Program Office should be consulted in designing the data collection.

Data collected should be disaggregated by size of firm as well as gender of ownership, management and employment. These data may indicate how the technological change affects sex segregation in employment opportunities. The Monitoring Unit will also monitor foreign and U.S. business opportunities created as a result of the project. Also, the Monitoring Unit will be watchful for opportunities to include female researchers from local R&D

institutions and other professional occupations in project activities.

This unit will also track the promotion/diagnostic activities to record the number of firms and the product lines that are reached through that effort, as well as the impact of the promotion/diagnostic activity on those firms.

The unit will prepare quarterly reports for submission to the TIPS Advisory Board, and USAID will receive these reports as a member of the Board. The reports will describe project activities and progress.

Within USAID/Sri Lanka, responsibility for project monitoring will be with the Office of Private Sector Development. This project will require about 40 percent of the time of one USDH and the full time of a professional Sri Lankan, with experience in engineering and business. In carrying out these responsibilities, the project officer will be supported by other USAID staff for special expertise as required.

5.2. Evaluation Arrangements

The TIPS project has reserved \$100,000 to fund the mid term and final evaluations.

5.2.1. Mid-Term Evaluation

The mid term evaluation should test the underlying assumptions of the project, measure the actual level of activity against the projected level, and determine the actual impact on the Sri Lankan private manufacturing sector. The mid term evaluation should be so structured as to be useful for project management to introduce adjustments that would improve the cost/benefit ratio of the project during its remaining life.

For example, TIPS is projected to run for six years from its initiation in early 1991. The criteria that are set forth in sections 2 and 4, and Annex I of this document for approval of grants, particularly the ratio of Grant to client contribution, are designed to meet the prevailing conditions of the Sri Lankan manufacturing sector at the inception of the project. However, some of the firms which will receive assistance in the first years of the project may develop an internal capacity to manage technological changes and to avail themselves of information channels to undertake further technological improvements. Such firms should be weaned away from the significant subsidy programs embodied in TIPS.

The mid-term evaluation will assess demand for technology grants in terms of TIPS clients' responses to increases in the ratio of client share and project the degree to which Sri Lankan industry can proceed along the path of fully funding these services by the year 1996-1997.

5.2.2. Final Evaluation

The final evaluation will assess the degree to which the project has succeeded in meeting its goal and purpose efficiently and effectively as measured by the expected project outputs. The final evaluation will use the base line data which will be gathered by the IESC monitoring unit from individual firms, including information on impact of technological improvements to increase sales, reduce operating expenses, and strengthen profits.

As part of the final evaluation, a sample survey will be conducted of a segment of Sri Lankan industry to determine the impact of this project by comparing the differences, if any, between companies that availed themselves of TIPS services and those that did not, in terms of meeting the targets set for end of project status. This survey will also examine the effect of technological change on the status of women in the work force.

This evaluation will measure the effectiveness of mid-course corrections in project direction resulting from the mid-term evaluation. It will offer an historical perspective and be designed to be of utility to others who may be seeking ways to approach the same development problems. This project should provide "lessons learned" for others to apply. This final evaluation is timed to start shortly before the PACD so that AID can determine, in sufficient time, whether a follow on project is warranted and, if so, how best to structure it. The final test, of course, will be the market place, a harsh judge of performance.

6. SUMMARIES OF ANALYSES

6.1 Summary of Technical Analysis

Sri Lanka's manufacturing sector, excluding textiles and garments, is the target group for TIPS. This sector accounted for 20% of national exports in 1989. Section 2.4.3 above, analyses the structure of the manufacturing sector, suggesting that the 1300 large private sector firms and the top 5000 SME's will be the primary focus for TIPS.

To obtain a better understanding of their technology needs, and to design an effective intervention mechanism, three sub-sectors, (light engineering, gems and jewelry, and ceramics) were selected for sector surveys during the TIPS project design phase. These three sub-sectors account for 6% of national exports. The three sector surveys disclose varying degrees of readiness among private firms to pursue the search for technological improvement.

A segment, (say six firms) from each sub-sector is ready to pursue immediately the kinds of searches that the TIPS technology grant program is intended to serve as soon as the program is in place. While additional promotion measures aimed at each sector can be

expected to yield additional applicants, it is believed that the positive experience of the first set of applicants will, of itself, generate additional demand for TIPS Technology Grants from their competitors.

The findings of the sector surveys provided data to structure the terms and conditions of the Technology Grants and also offered guidance on the nature and design of the promotion/ diagnostic/ information components of the project. See Annex G.1 for a more detailed description of the findings of the three sector surveys. Copies of the full sector surveys are available at USAID Colombo, Office of Private Sector Development.

6.2 Summary of Economic Analysis

The TIPS project purpose is to increase the international competitiveness of private sector Sri Lankan industry by improving the performance of firms, primarily in export oriented industries, in choosing, acquiring and mastering technologies and by encouraging foreign (including U.S.) investment for technology transfer, thereby generating additional employment opportunities.

It is well recognized that a suitable policy framework, allowing market forces to allocate resources, is essential to the growth of the exporting industries. There is increasing evidence that the necessary policy framework for achievement of the project purpose is well on track.

But past experience in developing nations indicates that there are also non-price constraints which impede the growth of the export sector. At a minimum, these constraints act to delay the responsiveness of firms to the price incentive structure. The TIPS project is intended to facilitate the acquisition, by Sri Lankan private firms, of one critical ingredient (competitive technology) needed to respond to international market opportunities.

The "economic considerations" section of the Project Identification Document for this project poses two critical questions:

a) Do the expected economic returns warrant subsidies to firms in selected (export) industries to finance part of the acquisition of technology-related advice?

b) Is the mode of the proposed intervention the most appropriate in terms of impact and contribution to overall resource management efficiency?

In light of the two surveys of managers of industry (one of 60 firms and another of 29 firms) and of three industry surveys (ceramics, light engineering, gems and jewelry) conducted during the course of the design effort for this project, these questions can now be answered with greater confidence. As the discussion in Annex G.2. indicates, success in any one of these sectors will more than justify the cost of the TIPS program.

The results of these industry sector surveys bring to mind the project's potential return on its investment by reduction of so called X-inefficiency, (i.e. increasing the efficiency with which manufacturing enterprises use their core technology as embodied in their core capital stock.)

The TIPS project allows for the utilization of its resources for product adaptation and commercialization of available R&D. There are a few public institutions in Sri Lanka (such as CISIR, the Arthur Clarke Institute and several universities) that have some capability to perform such work. Sri Lankan firms will be able to avail themselves of services from these institutions with TIPS funding if the firm which obtains a grant is persuaded that the local institution is competent to provide the services. But the overwhelming amount of resources under the project are destined to facilitate the transfer, installation and mastery of known and readily available technologies which, because of Sri Lanka's remoteness and isolation, have not found their way into its private industrial sector.

Thus, the answer to the first question posed, (Do the expected economic returns warrant subsidies.) is clearly in the affirmative, based on the potential gains to be derived. It cannot be claimed that the TIPS approach, in and of itself, will bring about the desired increases in technological competitiveness for Sri Lankan industry. Other facilities (credit and capital, political stability, a neutral price structure, etc.) are required to be in place as well. Technology is a necessary but not sufficient condition for manufacturing production and export growth. Other constraints may act against the installation and utilization of the technologies which TIPS will make available to the firms.

But TIPS will be a facilitator to make it possible for the industry to respond faster than it would otherwise, if it is allowed to respond and is willing to do so. It is structured in a manner to be consistent with previous efforts that have shown some success.

What sort of return on investment may be expected? As is characteristic of the entire R&D field, not all experiments will yield positive results. The successes must be sufficient to pay for the failures. Likewise, not every TIPS Technology Grant will lead to installation and utilization of the technology being sought.

It would be helpful to attempt to measure the spillover effect that might be attributable to project activities on the non-TIPS assisted firms in the same manufacturing sectors that had been selected to be promoted by TIPS. If disaggregated production and export data can be obtained for manufacturing sub-sectors that are targeted for TIPS promotion, the sectoral production and export growth will also be monitored during the period of project implementation. At present, no verifiable benchmarks for such a spillover effect suggest themselves but the data, if available, may offer some insight into the dynamics of the process of technological enhancement via the marketplace.

6.3. Financial Analysis

The economic analysis, (See Annex G.2.) argues that, based on the experience of other similar activities in other developing countries, there is reasonable expectation that the proposed project investment will be cost-effective in achieving certain desired productivity gains, quality improvements and export earnings increases by the manufacturing sector.

The analysis of demand for Technology Grants (section 2.4.), as well as the results of the technology surveys for the three sectors (see Annex G.1. Technical Analysis) indicate that there is some demand for Technology Grants among the Sri Lankan manufacturing sector and that an effective technology promotion effort will stimulate that demand to a level where it is likely that manufacturers will continue to seek technological enhancements even after the TIPS subsidy program is terminated.

Section 3, (Cost Estimate and Financial Plan) describes the relationship of various project inputs. This section will deal with the relationship of project inputs to project outputs.

The logical framework anticipates that 303 Technology Grants and 75 IESC Volunteer Executive programs will be requested to cover the following types of activities in the quantities indicated below:

Diagnostic/technical assistance consultancies	300
Trade show participation	100
Reconnaissance trips	100
Business linkage consultations	250
Technology Searches	650
Coventure RD&E activities	25
In-company training programs	75

Additional services will be financed under the Technology Promotion Program component.

While these activities may be called "outputs", the true output of the project will be the number of activities that lead to new investments by the firm, or result in the incorporation of soft technology into the firm's production process. True output will be measured after the fact by the impact TIPS will have on the behavior of the firm, the quality improvements, cost reductions, production increases, new job creation, market responsiveness, additional export earnings, improved management and profitability. It is projected that 50% of the TIPS Technology Grant clients will undertake new investment within 24 months of the date of the Grant Approval Letter; 75% of TIPS clients will introduce some technological innovation in their production process within 24 months of the date of their TIPS service. A monitoring system will allow the implementing agent to track performance of TIPS clients.

6.4. Summary of Social Soundness Analysis

The proposed project fits well into the GSL's current efforts to increase private industry production of non-traditional export products, create off-farm employment, and promote economic development in urban areas, including secondary towns and cities of Sri Lanka.

A recent AID-financed analysis of Sri Lankan programs in human resource development, particularly those aimed at vocational education, highlighted the problems of low productivity on the job. The report recommended a substantial redirection of technical training toward private in-house on-the-job training of the workforce by employers to increase productivity. The TIPS technical grants program should be well-positioned to implement the study's recommendations.

Assistance to the ceramics and gem/jewelry sectors could have particular benefits for women. Since women constitute a majority of their work forces, they would benefit from upgraded technology and skill levels and improved quality control that make Sri Lankan products more competitive and increase value added. As part of the monitoring and evaluation system, the TIPS Project will track the participation of women in TIPS programs.

The primary beneficiaries of the project will be the private sector firms that receive grant assistance and technical support aimed at technological improvement. Technological change in private firms may cause labor redundancies in some cases, but sectors will be chosen for TIPS by their export and employment potential and the vast majority of the Technology Grants are expected to add to employment through the addition of new product lines and expanded markets.

By encouraging the flow and use of technological information, and increasing the private sector's ability to apply technology effectively, the project will expand the economic choices available to industry. Analysis suggests that the proposed interventions hold the potential for a high return on the investment made by A.I.D. and its private sector partners, especially when social and economic multiplier effects are considered.

6.5. Summary of Environmental Analysis

While not a pollution abatement technology program, TIPS can contribute toward technological innovations that ensure that industries operate with cost-effective pollution controls where appropriate. Environmental considerations have been integrated into TIPS grant approval criteria to ensure that risks of stimulating environmentally adverse technological impacts are minimized, relying on GSL requirements for pollution licenses and environmental impact assessments. These GSL requirements will be bolstered by institution-building components of the USAID/Sri Lanka's Natural Resources and Environmental Policy Project (NAREPP).

7. CONDITIONS AND COVENANTS

7.1 Conditions Precedent

a) Prior to the date of execution of the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D., evidence that the Ministry of Industries, Science and Technology has been designated as the authorized representative and signatory for the Cooperating Country for the Project Agreement.

b) Prior to any disbursement, or the issuance any commitment documents under the Project Agreement, the Cooperating Country shall furnish, in form and substance satisfactory to A.I.D., a statement of the name of the person holding or acting in the office designated in the Project Agreement as the authorized representative of the Cooperating Country and any additional authorized representatives, together with a specimen signature of each such person.

7.2 Covenants

The Cooperating Country shall covenant that it will be the policy under the Project that all project activities will be conducted without discrimination on the basis of sex, religious beliefs, age, ethnic or national origin.

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SUBJECT: TECHNOLOGY INITIATIVE FOR THE PRIVATE SECTOR
 (TIPS) - 383-0108: PROJECT COMMITTEE MEETING

SUMMARY: THE PROJECT COMMITTEE (PC), CHAIRED BY ANE/PD DEPUTY DIRECTOR NACHTRIEB, REVIEWED SUBJECT PID ON APRIL 5. MISSION IS COMMENDED FOR A WELL PREPARED PID THAT DESCRIBES THE CONSTRAINTS AND OPPORTUNITIES FOR MOVING FROM A DOMESTIC-ORIENTED TO AN EXPORT-ORIENTED INDUSTRIAL SECTOR CAPABLE OF PROVIDING GREATER EMPLOYMENT AND INCOME OPPORTUNITIES TO A GROWING POPULATION. REVIEW CONCLUDED THAT PROJECT FIT WELL WITH BUREAU'S OPEN MARKET/OPEN SOCIETY OBJECTIVES AND THAT PROJECT IS AN APPROPRIATE STEP FOR SRI LANKA AS IT MOVES INTO THE 1990S. PARTICIPATION OF STEVE HADLEY WAS MUCH APPRECIATED AND VERY USEFUL IN CLARIFYING CONCERNS AND DISCUSSING ISSUES THAT WERE RAISED. AA/ANE HEREBY APPROVES THE PID AND DELEGATES AUTHORITY TO APPROVE THE PP TO THE MISSION DIRECTOR SUBJECT TO AID/W APPROVAL OF POLICY REFORM AGENDA AND SUBJECT TO THE FOLLOWING GUIDANCE.

1. GOAL AND PURPOSE STATEMENTS: THE PID NOTES THAT

RAPID EMPLOYMENT GENERATION IS THE GOAL OF THE MISSION'S PRIVATE SECTOR PROGRAM. AS THIS PROJECT INTENDS TO FOCUS ON STRENGTHENING FIRMS/INDUSTRIES WITH GREATEST EMPLOYMENT POTENTIAL, SUGGEST THE LINKAGE TO EMPLOYMENT GENERATION BE SHOWN IN PROJECT PURPOSE STATEMENT.

2. INTELLECTUAL PROPERTY RIGHTS: THE PID STATES THAT SRI LANKA'S SYSTEM OF INTELLECTUAL PROPERTY RIGHTS IS WELL-BALANCED AND COMPREHENSIVE. GIVEN THAT THE PROJECT WILL FACILITATE THE TRANSFER OF TECHNOLOGY FROM THE U.S., MISSION MUST ALSO ASSURE THAT APPROPRIATE DISCUSSIONS OF PROPERTY RIGHTS OCCUR BETWEEN U.S. AND SRI LANKAN FIRMS IN CASES WHERE PROJECT GRANTS FINANCE DIRECT CONTACTS OR TRANSACTIONS BETWEEN THEM. PP SHOULD DESCRIBE HOW MISSION WILL ACCOMPLISH THIS. ONE SUGGESTION IS TO INCLUDE LANGUAGE IN THE COOPERATIVE AGREEMENT WITH THE LOCAL NGO ADMINISTERING THE TECHNOLOGY GRANTS COMPONENT WHICH WOULD REQUIRE THE NGO TO ASSURE SUCH DISCUSSIONS TAKE PLACE.

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3. POLICY REFORMS AND PERFORMANCE-BASED DISBURSEMENT: FOR PERFORMANCE-BASED DISBURSEMENT TO WORK, A CLEAR AGENDA OF REFORMS IS NECESSARY WITH A COST OR DOLLAR VALUE ASSOCIATED WITH THE REFORMS. THERE MUST BE SUFFICIENT INTEREST ON THE PART OF THE GSL AND INDUSTRY TO IDENTIFY AND IMPLEMENT THE NEEDED REFORMS. BECAUSE OF THE AGENCY'S LIMITED EXPERIENCE WITH POLICY-BASED PERFORMANCE DISBURSEMENT, PRIOR TO AUTHORIZATION OF THE PROJECT, OR OF THE POLICY COMPONENT, MISSION SHOULD SUBMIT TO AID/W FOR REVIEW A POLICY PAPER DESCRIBING THE OVERALL INDUSTRIAL EXPORT ENVIRONMENT, CHANGES THAT HAVE TAKEN PLACE SINCE PID APPROVAL REGARDING INDUSTRIAL EXPORTS IN GENERAL AND SPECIFICALLY WITHIN THE INDUSTRIES TO BE ASSISTED, AND THE PROPOSED REFORM AGENDA WITH ASSOCIATED DOLLAR AMOUNTS FOR THE INITIAL INDUSTRIES TO BE ASSISTED. WITH AID/W ADVANCE APPROVAL, MISSION COULD AUTHORIZE THE PROJECT FOR THE AMOUNT OF THE APPROVED REFORM PACKAGE(S) PLUS THE OTHER COMPONENTS OF THE PROJECT NOT RELATED TO THE PERFORMANCE-BASED DISBURSEMENT. ALTERNATIVELY, MISSION MAY PROCEED WITH PROJECT AUTHORIZATION WITHOUT THIS COMPONENT AND ADD IT LATER AFTER AID/W APPROVAL. IF THE INITIAL AGENDA IS, AS PLANNED IN THE PID, ONLY PARTIAL, I.E., FOR ONLY AN INITIAL TRANCHE OF DISBURSEMENT, THE PROJECT COULD BE AMENDED THEREAFTER TO INCLUDE REFORMS IN OTHER INDUSTRIES. FURTHER, SINCE THERE CAN BE NO ASSURANCES OF AID/W APPROVAL OF THE INITIAL REFORM AGENDA, MISSION SHOULD BE CAREFUL IN DISCUSSIONS WITH GSL ON THIS

SUBJECT NOT TO PREJUDICE AID/W APPROVAL ACTIONS.

PC DISCUSSED PROJECT'S LIKELY IMPACT IF NEEDED REFORMS ARE NOT IMPLEMENTED AND WHETHER DOLS 5 MILLION PLANNED FOR THE PERFORMANCE-BASED DISBURSEMENT COMPONENT IS ADEQUATE TO EFFECT REFORMS IN FIVE INDUSTRIES. CONCERN WAS EXPRESSED ABOUT THE POSSIBILITY OF MACRO-ECONOMIC POLICY CHANGES THAT COULD NEGATIVELY IMPACT EXPORT INDUSTRIES AND PROJECT PERFORMANCE. REVIEW CONCLUDED THAT ALTHOUGH THE OTHER COMPONENTS OF THE PROJECT COULD BE CARRIED OUT WITHOUT THE NECESSARY INDUSTRY SPECIFIC REFORMS, PROJECT SHOULD BE FLEXIBLE ENOUGH SO THAT IF REFORMS IN A PARTICULAR INDUSTRY ARE NOT AGREED UPON AND IMPLEMENTED, THE PROJECT COULD MOVE EASILY INTO A NEW INDUSTRY OR SECTOR WHERE ITS IMPACT WOULD BE MAXIMIZED. THIS WOULD BE A JUDGMENT FOR THE MISSION TO MAKE, BASED ON AN ASSESSMENT OF OPTIMAL IMPACT AT THE TIME. LIKEWISE, PROJECT SHOULD ALLOW FLEXIBILITY SO THAT IF UNANTICIPATED MACRO-ECONOMIC POLICY CHANGES LIMIT EXPORT INDUSTRIES ACROSS THE BOARD, RESOURCES COULD BE SHIFTED TO PROVIDE ADDITIONAL ASSISTANCE TO INDUSTRY

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ASSOCIATIONS OR SIMILAR ORGANIZATIONS TO RE-ESTABLISH A FAVORABLE POLICY ENVIRONMENT OR TO ACTIVITIES SUCH AS INDUSTRIAL ENGINEERING AND MANAGEMENT TRAINING THAT WOULD AID SRI LANKA'S ABILITY TO EXPORT IN THE FUTURE WHEN MACRO ECONOMIC POLICIES ARE MORE CONDUCTIVE TO EXPORTING. IN THE ALTERNATIVE, MISSION COULD CONSIDER DEOBLIGATION.

WE UNDERSTAND THAT INDUSTRY ASSOCIATIONS ARE ALREADY BEING ASSISTED THROUGH A POLICY SUPPORT UNIT (PSU) UNDER THE PRIVATE SECTOR POLICY SUPPORT PROJECT AND THAT THE PSU IS EXPECTED TO FACILITATE DEVELOPMENT OF REFORM AGENDAS UNDER TIPS. MISSION SHOULD EXPLORE POSSIBLE FURTHER LINKAGES BETWEEN THE TWO PROJECTS. PP DEVELOPMENT AND DECISIONS REGARDING WHAT INDUSTRIES TO ASSIST SHOULD ALSO INCLUDE AN ANALYSIS OF THE LIKELY REFORMS AND BENEFITS THAT WILL ACCRUE AS A RESULT OF OUR ASSISTANCE. MISSION MAY FIND THAT AN AVERAGE OF DOLS 1 MILLION PER INDUSTRY IS NOT SUFFICIENT TO EFFECT THE NECESSARY REFORMS. AN ALTERNATIVE USE OF THESE FUNDS WOULD BE TO STRENGTHEN THE CAPACITY OF CONSTITUENCY GROUPS TO PARTICIPATE IN POLICY DIALOGUE AND REFORMS. PP DESIGN SHOULD REMAIN FLEXIBLE REGARDING THE COST OR VALUE OF REFORMS UNTIL THE APPROPRIATE REFORM AGENDA IS ESTABLISHED AND AGREED UPON WITH THE GSL. IN THIS REGARD, MISSION MAY ALSO WISH TO CONSIDER POSSIBILITY OF REFORMS THAT CROSS INDUSTRIAL SECTORS IN PLACE OF OR IN ADDITION TO THOSE SPECIFIC TO PARTICULAR INDUSTRIES.

4. CHOICE OF TECHNOLOGY: PC WAS UNCLEAR AS TO WHY MISSION CHOSE TO PROVIDE ASSISTANCE IN SELECTION OF TECHNOLOGY RATHER THAN SOME OTHER ELEMENT OF THE PRODUCT AND MARKET DEVELOPMENT PROCESS THAT LEADS TO PRODUCTION. PC DISCUSSED, FOR EXAMPLE, THE BENEFITS OF ESTABLISHING A FOR-PROFIT VENTURE CAPITAL FIRM OR EXPORT PROMOTION INSTITUTION THAT COULD ASSUME THE RESPONSIBILITY FOR MATCHING UP U.S. AND SRI LANKAN FIRMS, TECHNOLOGIES AND MARKETS AND, IN THE CASE OF A VENTURE CAPITAL INSTITUTION, ASSUME SOME OF THE FINANCIAL RISK. SEVERAL MODELS WERE DISCUSSED INCLUDING AN INSTITUTION IN LATIN AMERICA (CINDE) THAT HAS BEEN VERY SUCCESSFUL. PC RECOMMENDS MISSION LOOK CLOSELY AT THE WHOLE PRODUCTION AND MARKETING PROCESS AND INCLUDE IN THE PP A DISCUSSION OF WHY THE CHOSEN ELEMENT(S) OF THAT PROCESS ARE THE MOST APPROPRIATE FOR PROJECT ASSISTANCE. GIVEN THAT MISSION IS ALREADY PROVIDING ASSISTANCE TO A VENTURE CAPITAL ORGANIZATION UNDER THE PRIVATE SECTOR POLICY SUPPORT PROJECT, PP DEVELOPMENT COULD EXPLORE POSSIBLE LINKAGES BETWEEN THAT PROJECT AND TIPS. IN ANY EVENT, IT WILL BE CRITICAL TO ASSURE THAT FIRMS OBTAINING TIPS SUPPORT TO EXPLORE TECHNOLOGICAL OPTIONS HAVE ACCESS TO FINANCIAL RESOURCES TO FUND SUBSEQUENT CAPITAL INVESTMENTS. PP DESIGN SHOULD INVESTIGATE ALTERNATIVE ARRANGEMENTS TO ASSURE THIS WILL BE THE CASE.

5. SELECTING INDUSTRIES: PID PROPOSES SELECTION OF

FIVE INDUSTRIES TO BE ASSISTED BY THE PROJECT BUT DOES NOT BUILD A CASE FOR SELECTING INDUSTRIES AS OPPOSED TO FREEING UP THE ECONOMY TO ALLOW MARKET FORCES TO FOLLOW SRI LANKA'S COMPARATIVE ADVANTAGE. WHILE MISSION IS ENCOURAGED TO FOLLOW AN APPROACH MORE CONSISTENT WITH MARKET AND FREE TRADE PRINCIPLES, IF SELECTING INDUSTRIES IS FELT TO BE THE MOST APPROPRIATE FOR MEETING PROJECT OBJECTIVES, PP SHOULD CLEARLY DEMONSTRATE WHY THIS IS SO. PC WAS ALSO CONCERNED THAT INDUSTRIES SELECTED CONFORM TO PROJECT OBJECTIVES ENCOURAGING EQUITABLE GROWTH OF EMPLOYMENT AND EXPORTS. DISCUSSION NOTED THAT CRITERIA FOR SELECTING INDUSTRIES INCLUDE EMPLOYMENT AND EXPORT POTENTIAL. LANGUAGE PREVENTING DISCRIMINATION AGAINST MINORITY GROUPS WILL BE CONTAINED IN THE PROJECT AGREEMENT AND IN THE COOPERATIVE AGREEMENT WITH THE NGO RESPONSIBLE FOR ADMINISTERING THE GRANTS PROGRAM. PP DESIGN SHOULD ENSURE THAT INDUSTRY SELECTIONS ARE MADE WITH A CLEAR

UNDERSTANDING OF THE GENDER COMPOSITION OF THE LABOR FORCE (INCLUDING OWNERS AND EMPLOYEES OF ENTERPRISES) THAT WILL BE AFFECTED AND THE TECHNICAL, MANAGERIAL AND ORGANIZATIONAL TRAINING NEEDS OF MEN AND WOMEN. PROJECT IMPACT ON EMPLOYMENT GENERATION AND QUOTE TECHNICAL UNQUOTE UPGRADING FOR MEN AND WOMEN CAN THEN BE MONITORED AGAINST BASELINE DATA THROUGHOUT PROJECT IMPLEMENTATION.

6. ENVIRONMENT: BUREAU'S ENVIRONMENTAL COORDINATOR AGREES PROJECT MEETS CRITERIA FOR CATEGORICAL EXCLUSION SINCE MISSION DOES NOT HAVE DIRECT CONTROL OVER DETAILED IMPLEMENTATION OF PROJECT ACTIVITIES. HOWEVER, PROJECTS AIMED AT ENHANCING CAPABILITIES IN ACQUIRING AND ADAPTING MANUFACTURING PROCESSES AND PRODUCTION EQUIPMENT HAVE POTENTIAL TO CAUSE NEGATIVE ENVIRONMENTAL AND HUMAN HEALTH IMPACTS. THEREFORE, AS A MATTER OF POLICY, MISSION SHOULD ENSURE PROJECT ACTIVITIES CONTRIBUTE TO ENVIRONMENTAL SOUNDNESS, COMPLY WITH SRI

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LANKA'S ENVIRONMENTAL REGULATIONS AND BUILD HOST COUNTRY CAPABILITY FOR INDUSTRIAL POLLUTION ASSESSMENT AND CONTROL. CONCERN WAS ALSO EXPRESSED THAT PROJECT MISSES AN OPPORTUNITY TO ADDRESS INDUSTRIAL POLLUTION PREVENTION, PROCESS MODIFICATION AND IN-PROCESS CONTROLS THAT OFTEN IMPROVE PRODUCTION EFFICIENCY AND PROFITABILITY WHILE REDUCING INDUSTRIAL POLLUTION. PC RECOMMENDS MISSION PROVIDE PROJECT FUNDING FOR TECHNICAL ASSISTANCE TO: A) CHARACTERIZE EMISSIONS FROM INDUSTRIAL PROCESSES; B) RECOMMEND PRACTICABLE IN-PLANT CONTROLS; C) IDENTIFY ADDITIONAL TREATMENT METHODS; AND D) RECOMMEND ENVIRONMENTAL MONITORING PROGRAMS. PC AGREED THIS TECHNICAL ASSISTANCE SHOULD BE PART OF PHASE I QUOTE TECHNOLOGY AUDITS UNQUOTE OF EACH INDUSTRY. ALSO, SINCE PRIVATE COMPANIES WILL NEED ASSISTANCE TO COMPLY WITH ENVIRONMENTAL REGULATIONS, THE POLLUTION CONTROL INDUSTRY SHOULD BE CONSIDERED FOR TIPS ASSISTANCE. PC RECOMMENDS MISSION ENVIRONMENTAL OFFICER BE ADDED TO PROJECT DESIGN TEAM AND ANE/PD/FNV OFFERED ASSISTANCE ON THE INDUSTRIAL POLLUTION ASSESSMENT AND CONTROL COMPONENT OF THE PROJECT.

7. BASELINE DATA AND EVALUATION: THE DRAFT LOG FRAME IDENTIFIES GOOD MEASURES FOR END OF PROJECT STATUS. SO THAT THESE CAN BE REPORTED ON, THE PP SHOULD ASSURE THAT SUFFICIENT RESOURCES ARE ALLOTTED TO ALLOW BASELINE DATA TO BE COLLECTED WHEN INDUSTRIES AND FIRMS ARE FIRST IDENTIFIED FOR INTERVENTIONS. THE PP SHOULD IDENTIFY AT WHAT POINT IT WOULD BE TIMELY TO COLLECT THIS

DATA--PERHAPS SOME SPECIFIC DATA SHOULD BE COLLECTED FOR EACH FIRM RECEIVING A GRANT AND SOME GENERAL DATA SHOULD BE COLLECTED FOR THE TARGETTED INDUSTRIES. FUNDS SHOULD BE INCLUDED IN THE BUDGET FOR EVALUATION PURPOSES.

8. U.S. TECHNOLOGICAL CAPABILITY: PC DISCUSSED THE IMPORTANCE OF ASSURING THAT PROJECT'S CHOSEN INDUSTRIAL SECTORS ARE ONES FOR WHICH U.S. TECHNOLOGICAL SKILLS ARE READILY AVAILABLE. MISSION IS REQUESTED TO ADD THIS CONSIDERATION TO THE CRITERIA FOR SELECTING INDUSTRIES.

9. CLARIFICATION OF TERMS: PP SHOULD DEFINE TERMS SUCH AS PRIVATE OWNERSHIP (WE ASSUME THIS MEANS MORE THAN 50 PERCENT PRIVATE OWNERSHIP AND MINIMAL GOVERNMENT CONTROL) AND WHO IS ELIGIBLE FOR ASSISTANCE (FOR EXAMPLE, WHAT ABOUT FOREIGN-OWNED PRIVATE FIRMS?). WILL THERE BE A SIZE LIMITATION ON ENTERPRISES TO BE ASSISTED. IT WOULD ALSO BE USEFUL TO DEFINE SMALL, MEDIUM AND LARGE ENTERPRISES.

10. OTHER GUIDANCE NOT SPECIFICALLY DISCUSSED AT PC:

A. PROPOSAL REVIEW PROCEDURES: PC RECOGNIZED THE IMPORTANCE OF AN EXPEDITIOUS PROCEDURE FOR PROCESSING GRANT PROPOSALS. THE NATURE OF THIS PROCEDURE, FORMAL VS. INFORMAL, AND THE DEPTH OF TECHNICAL REVIEW WILL DEPEND ON THE TYPE OF ACTIVITY PROPOSED. THE PROCEDURE DEVELOPED SHOULD CONSIDER THE NATURE OF THE ACTIVITY,

THE NEED TO RESPOND QUICKLY TO THE PRIVATE SECTOR, AND SUPPORT THE DEVELOPMENT OF THE PRIVATE SECTOR'S RISK TAKING ABILITIES. THE PP DESIGN TEAM SHOULD CAREFULLY ADDRESS THIS ISSUE AND CLEARLY IDENTIFY THE RESPONSIBILITIES OF THE NGO IN THIS AREA.

B. DEMAND FOR RESEARCH, DEVELOPMENT AND ENGINEERING (RDE): THE PID ASSUMES THAT ENCOURAGING A FIRM TO SEEK RDE THAT IS RESPONSIVE TO THE FIRM'S NEEDS WILL STIMULATE THE NECESSARY SUPPLY. IT IS LIKELY THAT EXISTING RDES NO LONGER CAN SUPPLY THE NECESSARY SERVICES AND WOULD NEED TECHNICAL ASSISTANCE THEMSELVES. ALTHOUGH EXTERNAL SOURCES OF TECHNOLOGY ARE EXPECTED TO BE USED TO A LARGE EXTENT, MISSION SHOULD EXAMINE DURING PP DEVELOPMENT (IF IT HAS NOT ALREADY DONE SO) THE ABILITY OF SRI LANKAN RDE INSTITUTIONS TO RESPOND TO DEMAND.

C. TECHNOLOGY MASTERY AND ACQUISITION: CONSIDERABLE EVIDENCE SUGGESTS THAT SUCCESSFUL EXPORTERS FROM THE

QUOTE FOUR TIGERS UNQUOTE HAVE ACQUIRED SIGNIFICANT AMOUNTS OF TECHNOLOGICAL KNOW HOW, PARTICULARLY WITH RESPECT TO PRODUCTION METHODS AND FACTORY OPERATIONS BY FIRST HAND AND REPEATED EXPOSURE TO FACTORY OPERATIONS OF OTHER SUCCESSFUL PRODUCERS. THIS AVENUE FOR TECHNOLOGY ACQUISITION AND MASTERY WILL BE THE MAIN THRUST OF THE PROJECT'S ENTREPRENEURS INTERNATIONAL PROGRAM AND SHOULD BE INCLUDED AND ENCOURAGED AS A FUNDABLE ACTIVITY FOR TECHNOLOGY GRANTS. BAKER

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RESPONSE TO PID APPROVAL CABLE

1 - Project Goal and Purpose Statements:

Changed as requested.

2 - Intellectual Property Rights:

AID/W approved language was incorporated in PP.

3 - A: Performance Based Disbursement:

Project component deferred.

B: Link to Policy Reform:

Recommended flexibility to shift to more productive sectors was incorporated in PP. Linkage to Policy Support Unit was made by placing Ceylon Chamber on TIPS Advisory Board.

4 - Choice of Technology:

A: The PP describes the rationale behind selecting technology as the most effective intervention technique.

B: Follow-on financing for technology acquisition is not guaranteed but facilitated by participation of financial institutions on the TIPS Advisory Board.

5 - Selecting Industries:

AID/W proposals incorporated in PP in selecting industries in the Technology Promotion Component.

6 - Environment:

PP encourages use of Technology Grants for search for environmentally sound technology.

7 - Baseline data and evaluation;

PP incorporates AID/W recommendations.

8 - U.S. Technological Capability:

Criteria is included but selection will be market driven.

9 - Clarification of Terms:

Definitions provided in PP.

10 - Other:

A: Grant Approval Procedure

AID/W concerns accommodated in PP.

B: Examination of Sri Lankan RD&E institutions:

The PP incorporates a mechanism to upgrade the capabilities of local technical institutions and private technical consulting firms without departing from its demand driven focus.

C: Focus on exposure to factory operations:

This was incorporated as a component of the Technology Grant. Entrepreneurs International is identified as an important tool for such factory exposure visits.

LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>! generation of economic growth and employment by developing and sustaining Sri Lanka's market economy</p>	<p>! * increased value of industrial exports to \$300 million by 1996</p> <p>! * increased total employment in export industry</p> <p>! * industry comprising an increased and growing share of total GDP, total exports and total employment</p> <p>! * increased total factor productivity in industry</p> <p>! * manufactured production output to increase by 50% from 1989 levels</p>	<p>! * macro level national accts data</p> <p>! * industry data for target industries</p> <p>! * record of policy changes affecting production and export performance</p>	<p>! * progress in macroeconomic reform continues</p> <p>! * political disturbances continue to abate</p> <p>! * regional competitors do not unduly subsidize export industry</p> <p>! * protectionism in major consuming countries does not increase</p>
<p>! Increased international competitiveness of, and employment in Sri Lankan private industry by improving its performance in choosing, acquiring and mastering technologies, with support from U.S. business and technology, and by facilitating removal of policy impediments</p>	<p>(End of Project Status)</p> <p>! Productivity Growth :</p> <p>! * TIPS clients avg. productivity growth will exceed 3% over avg. non TIPS clients during project life</p> <p>! * TIPS priority sub sectors will enjoy productivity growth in excess of 1.5% over other manufacturing sub sectors during project life</p> <p>! * TIPS clients will have aggregate growth of sales, investment and employment exceeding 10% over non TIPS clients during project life</p> <p>! Technology Search Behavior:</p> <p>! * Increase in aggregate percentage of key managers who recognize need/value of technology innovation from baseline data of 40% to 70% by end of project</p> <p>! * TIPS clients will increase resource allocation for tech search/development by 100%; sub sectors selected above will show increase of 50%</p> <p>! Increased Diversity and use of Tech Sources:</p> <p>! * Increased key manager recognition of sources of tech advice by 100%; increased avg. usage by 25%</p> <p>! * 20 formal coventures established with US investors or business participation</p>	<p>! * project monitoring data</p> <p>! * sample survey during evaluation</p>	<p>! * progress in macroeconomic reform continues</p> <p>! * political disturbances continue to abate</p> <p>! * regional competitors do not unduly subsidize export industry</p> <p>! * credit available for new technology investment</p>
(continued)			

LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p>(End of Project Status) contd.,</p> <ul style="list-style-type: none"> • 150 TG clients invest in new technology and install • average production increase for all TG clients 10% within 12 months of final date of TG expenditure • 75 regular VE clients achieve average 10% production increase within 12 months of program end • export growth for sub sector of focus is 30% after 3 years from start of promotion <p>Other indicators of improved performance:</p> <ul style="list-style-type: none"> • lower rejection rates • less down time • more consistent quality/reliability of output • higher capacity utilization • increased sales and (economic) profitability • new/improved processes successfully adopted • improved image in buyers minds <p>Indicators of improved capability:</p> <ul style="list-style-type: none"> • firms select/modify processes on a planned, systematic basis • firms conduct RD&E on a planned systematic basis • firms conduct training programs based on training needs assessments and plans and use in-house or external training resources effectively • firms use industrial information more often and more effectively • firms obtain R&D services from increasingly diverse sources, including private sector sources <p>Other:</p> <ul style="list-style-type: none"> • identified industry-specific regulatory, procedural or policy constraints are removed 		

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PRELIMINARY LOGFRAME

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
! * 303 technology grants ! approved ! * 650 industrial ! information requests ! processed ! * 200 company diagnostics ! performed ! * 25 seminars held with ! 25 participants each ! * 100 trade show ! participations ! * 100 company orientation ! tours ! * 75 regular VE programs	project monitoring data	! project monitoring data! ! sample survey during ! evaluation	! * private sector responds ! to TIPS grant incentives ! * GOSL policy changes for ! free & open markets ! continues ! * security situation ! improves ! * credit/capital for ! follow-on investment ! is made available ! at reasonable terms
! (AID budget - \$000) ! ! I Technology grants 6,300 ! M Promotion/Info 4,000 ! P Regular IESC 1,200 ! U Eval/Audit 300 ! T Contingency 200 ! S TG client Contrib 6,270	project monitoring data	project monitoring data	! * private sector responds ! to TIPS grants incentives ! * GOSL policy changes for ! free & open markets ! continues ! * security situation ! improves ! * credit/capital for ! follow-on investment is ! made available at ! reasonable terms

TECHNOLOGY INITIATIVE FOR THE PRIVATE SECTOR
PROJECT NO. 393-0108

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FAA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FY 1990 Appropriations Act Sec. 569(b).
 Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully? No

2. FAA Sec. 481(h); FY 1990 Appropriations Act Sec. 569(b). (These provisions apply to assistance of any kind provide by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, narcotics education and awareness, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of N/A

illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government): (a) Does the country have in place a bilateral narcotics agreement with the United States, or a multilateral narcotics agreement? and (b) Has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (1) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals agreed to in a bilateral narcotics agreement with the United States or in a multilateral agreement, to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, to prevent and punish drug profit laundering in the country, and to prevent and punish bribery and other forms of public corruption which facilitate production or shipment of illicit drugs or discourage prosecution of such acts, or that (2) the vital national interests of the United States require the provision of such assistance?

3. 1986 Drug Act Sec. 2013.
(This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major

N/A

illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec. 481(h), has the President submitted a report to Congress listing such country as one: (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

4. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies; (b) the debt is not denied or contested by such government; or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity?
- No

5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?
- No

6. FAA Sec. 620(a), 620(f), 620D; FY 1990 Appropriations Act Secs. 512, 548.
Is recipient country a Communist country? No
If so, has the President: (a) determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism, or (b) removed a country from applicable restrictions on assistance to Communist countries upon a determination and report to Congress that such action is important to the national interest of the United States? Will assistance be provided either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, South Yemen, Iran or Syria? No
Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan? No
7. FAA Sec. 620(j). Has the country permitted or failed to take adequate measures to prevent the damage or destruction, by mob action, of U.S. property? No
8. FAA Sec. 620(l). Has the country failed to enter into an investment guaranty agreement with OPIC? No
9. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec.5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made? No

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10. FAA Sec. 620(q); FY 1990 Appropriations Act Sec. 518 (Brooke Amendment). (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under FAA? (a) No
(b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1990 Appropriations Act appropriates funds? (b) No
11. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percent of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.) N/A
12. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No
13. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.) Sri Lanka is in arrears; however, this has been taken into account by the Administrator at time of approval of Agency OYB.
14. FAA Sec. 620A. Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has No

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committed an act of international terrorism, or otherwise supports international terrorism?

15. FY 1990 Appropriations Act Sec. 564.
Has the country been determined by the President to: (a) grant sanctuary from prosecution to any individual or group which has committed an act of international terrorism, or (b) otherwise support international terrorism, unless the President has waived this restriction on grounds of national security or for humanitarian reasons?
(a) No
(b) No
16. ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?
No
17. FAA Secs. 666(b). Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?
No
18. FAA Secs. 669, 670. Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)
No
19. FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985,
No

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exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device?

- 20. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on September 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the "Taking into Consideration" memo.)

Sri Lanka was not represented at the meeting and entered a written reservation subsequently.

- 21. FY 1990 Appropriations Act Sec. 513. Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance?

- 22. FY 1990 Appropriations Act Sec. 539. Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin?

Yes

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

- a. FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy?

No

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b. FY 1990 Appropriations Act Sec. 535.
Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

No

2. Economic Support Fund Country Criteria

a. FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest?

N/A

b. FY 1990 Appropriations Act Sec. 569(d). Has this country met its drug eradication targets or otherwise taken significant steps to halt illicit drug production or trafficking?

N/A

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5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This Section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP-TO-DATE? Yes.

HAS STANDARD ITEM CHECKLIST
BEEN REVIEWED FOR THIS PROJECT? Yes.

A: GENERAL CRITERIA FOR PROJECT

1. FY 1990 Appropriations Act Sec. 523; FAA Sec. 634A. If money is be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified? Notification to Congress was made in the FY 91 Congressional Presentation.
2. FAA Sec. 611(a). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? (a) Yes
(b) Yes
Such information is provided in the Project Paper.
3. FAA Sec. 611(a)(2). If legislative action is required within recipient country with respect to an obligation in excess of \$500,000, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance? No such action is required.
4. FAA Sec. 611(b); FY 1990 Appropriations Act Sec. 501. If project is for for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) N/A

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5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively? N/A
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. Project seeks to marry Sri Lankan technology needs with areas in which the U.S. has superior technological capability; therefore, it is appropriate for project to be bilateral although Project will take into account other donor activities in same area.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. (a) Project is aimed at enhancing capability of local export-oriented industries to incorporate technology; by doing so it is expected that Sri Lankan exports will become more competitive in world trade; (b) Project activities will help private Sri Lankan companies to obtain better awareness of importance of technology and thereby become more innovative and competitive; (c) No significant impact; (d) Project activities will be available to a wide group of industries and companies within such industries and therefore should enhance internal and external competitive environment; (e) Project activities

- are specifically aimed at encouraging Sri Lankan companies to adopt technology in their productive processes and thereby improve their efficiency and competitiveness; and (f) no significant impact
8. FAA Sec. 6C1(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
- Project contemplates focus on industrial sectors in which private U.S. firms have technological capability.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.
- Recipients of grant funds will share in costs of activities being financed; recipient contributions will cover local currency costs; the US owns no excess Sri Lankan rupees.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and if so, what arrangements have been made for its release?
- No
11. FY 1990 Appropriations Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?
- Although assistance is generally aimed at export industries, surveys of industrial sectors will determine those sectors most appropriate for support. The grant approval process will take into account all U.S. statutory requirements.
12. FY 1990 Appropriations Act Sec. 547. Will the assistance (except for programs in Caribbean Basin Initiative countries
- Since the assistance

under U.S. Tariff Schedule "Section 807", which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

under this Project is provided through an intermediary and AID has no approval rights over specific grants, a determination has been made that this provision does not apply to assistance under this Project. However, the textile and apparel industries are not targeted for assistance under the Project. Periodic project evaluations will permit the Mission to review the level of our assistance to the textile and apparel sectors.

13. FAA Sec. 119(q)(4)-(6) & (10). Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?
- (a) No, although Project activities will be required to be environmentally sound.
 (b) No
 (c) No
 (d) No
14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?
- N/A
15. FY 1990 Appropriations Act, Title II, under heading "Agency for International Development." If assistance is to be made to a United States PVO (other than a
- N/A

cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?

16. FY 1990 Appropriations Act Sec. 537.
If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? N/A
17. FY 1990 Appropriations Act Sec. 514.
If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures? N/A
18. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).
The aggregate value of the Project Agreement is less than \$25 million; therefore, this requirement is inapplicable.
19. Trade Act Sec. 5164 (as interpreted by conference report), amending Metric Conversion Act of 1975 Sec. 2. Does the project use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric and are components, sub-
To the extent practical, metric measurements will be used in all procurements, grants and other activities under the Project.
No bulk purchases are contemplated. All commodity procurements will use metric measurements, to extent practical

semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

and AID will also use such measurements throughout the Project.

20. FY 1990 Appropriations Act, Title II under heading "Women in Development." Will assistance be designed so that the percentage of women participants will be demonstrably increased?

No specific actions are targeted at increasing percentage of women participants; however, data will be generated under the Project concerning gender characteristics of industries assisted so that this issue can be reviewed and evaluated during the course of the Project.

21. FY 1990 Appropriations Act Sec. 592(a). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies, has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

No local currency will be generated under the Project.

Will such local currencies, or an equivalent amount of local currencies,

be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FY 1990 Appropriations Act Sec. 546.
(as interpreted by conference report).
If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities:
(1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity;
or (2) in support of research that is intended primarily to benefit U.S. producers?

Some assistance may be provided for the food processing industry for export; such assistance is not expected to cause substantial injury to US exporters of similar processed agricultural commodities.

- b. FAA Sec. 107. Is special emphasis on use of appropriate technology (defined as relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small business, and small incomes of the poor)?
- A purpose of the Project is to help Sri Lankan businesses to identify and adopt appropriate technology.
- c. FAA Sec. 281(b). Describe extent to which the activity recognizes the particular needs, desires and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental processes essential to self-government.
- Project activities contemplate utilization of local firms for technology assistance and will seek to stimulate the further development of indigenous technological skills and knowledge.
- d. FAA Sec. 101(a). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?
- Yes, by encouraging local businesses, primarily in export-oriented industries to adopt technologies that enable them to be more competitive and productive.
- e. FAA Secs. 102(b), 111, 113, 281(a). Describe the extent to which activity will: (1) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (2) support the self-help efforts of developing countries; (3) promote the partici-
- (1) Project activities are aimed at assisting any eligible Sri Lankan company to adopt and utilize appropriate technology; enhanced efficiency and competitiveness which is expected to result therefrom should create increased employment opportunities; (2) Project activities are not addressed to this issue; (3) Project will assist companies in export-oriented industries become more competitive and will stimulate development of indigenous technical consulting capability; (4) no Project activities are

- pation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries.
- specifically targeted at women; however, data will be generated to assess involvement of women in Project activities; (5) since Project is focused on developing capabilities of Sri Lankan industry and developing linkages with U.S. technology, Project is not suitable for focus on regional cooperation.
- f. FAA Secs. 103, 103A, 104, 105, 106, 120-21; FY 1990 Appropriations Act, Title II, under heading "Sub-Saharan Africa, DA." Does the project fit the criteria for the source of funds (functional account) being used?
- Project is funded from ARDN and SDA accounts and Project activities will fit these sources of funds.
- g. FY 1990 Appropriations Act, Title II, under heading "Sub-Saharan Africa, DA." Have local currencies generated by the sale of imports or foreign exchange by the government of a country in Sub-Saharan Africa from funds appropriated under Sub-Saharan Africa, DA been deposited in a special account established by that government, and are these local currencies available only for use, in accordance with an agreement with the United States, for development activities which are consistent with the policy directions of Section 102 of the FAA and for necessary administrative requirements of the U.S. Government?
- N/A
- h. FAA Sec. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement been waived for a "relatively least developed" country)?
- Yes; cost-sharing by host-country grantees is expected to exceed 25 percent.
- i. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private
- Data will be generated to determine participants under the Project and impact

organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

of Project activities. Poor majority is expected to benefit by increase in employment opportunities generated by companies participating in the Project.

j. FY 1990 Appropriations Act, under heading "Population, DA," and Sec. 535. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

No

Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

No

Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

No

Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, information about access to, a broad range of family planning methods and services?

N/A

In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning?

N/A

Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

No

- k. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes
- l. FY 1990 Appropriations Act Sec. 579. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? A specific portion of Project funds has not been set aside for activities of such entities. The implementing entity will be advised to utilize such entities under the Project wherever practical.
- m. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase This project meets the criteria for categorical exclusion under Reg. 16 because AID will not have direct control over detailed implementation of Project activities. However, the Project criteria for assistance to industrial sectors will ensure activities being supported are environmentally sound.

production on lands already cleared or degraded; (6) conserve forested watersheds and rehabilitate those which have been deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (10) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (11) utilize the resources and abilities of all relevant U.S. government agencies?

- n. FAA Sec. 118(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project: (1) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land; and (2) take full account of the environmental impacts of the proposed activities on biological diversity? N/A
- o. FAA Sec. 118(c)(14). Will assistance be used for: (1) the procurement or (1) No

- use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? (2) No
- p. FAA Sec. 118(c)(15). Will assistance be used for: (1) activities which would result in the conversion of forest lands to the rearing of livestock; (2) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (3) the colonization of forest lands; or (4) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? (1) No
(2) No
(3) No
(4) No
- q. FY 1990 Appropriations Act Sec. 534(a). If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry? N/A
- r. FY 1990 Appropriations Act Sec. 534(b). If assistance relates to energy, will such assistance focus One of the technological improvements addressed under the Project may be

on improved energy efficiency, increased use of renewable energy resources, and national energy plans (such as least-cost energy plans) which include investment in end-use efficiency and renewable energy resources?

Describe and give conclusions as to how such assistance will: (1) increase the energy expertise of A.I.D. staff, (2) help to develop analyses of energy-sector plans that employ end-use analysis actions to minimize emissions of greenhouse gases at least cost, (3) develop energy-sector and other techniques to identify cost-effective actions to minimize reliance on fossil fuels, (4) help to analyze fully environmental impacts (including impact on global warming), (5) improve efficiency in production, transmission, distribution, and use of energy, (6) assist in exploiting nonconventional renewable energy resources, including wind, solar, small-hydro, geo-thermal, and advanced biomass systems, (7) expand efforts to meet the energy needs of the rural poor, (8) encourage host countries to sponsor meetings with United States energy efficiency experts to discuss the use of least-cost planning techniques, (9) help to develop a cadre of United States experts capable of providing technical assistance to developing countries on energy issues, and (10) strengthen cooperation on energy issues with the Department of Energy, EPA, World Bank and Development Assistance Committee of the OECD.

FY 1990 Appropriations Act, Title II under heading "Sub-Saharan Africa, DA." (as interpreted by Conference report upon original enactment). If assistance will come from the Sub-Saharan Africa DA account, is it:

energy efficiency in production processes.

(1) No significant impact; (2) No significant impact; (3) Among the technology issues to be addressed by the Project for a particular grantee may be increased energy efficiency; (4) activities being supported under the Project will be required to be environmentally sound; (5) Project grants may support analysis of energy utilization in production and technology to make such utilization more cost-efficient; (6) Project activities are not specifically addressed to energy issues although energy utilization may be a technological issue addressed under a particular grant; (7) no significant impact; (8) no significant impact; (9) Project activities will utilize U.S. experts who may have advice on energy technology in the production process; and (10) no significant impact.

N/A

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(1) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (2) being provided in accordance with the policies contained in section 102 of the FAA; (3) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots - activities on behalf of long-term development in Sub-Saharan Africa; (4) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisting policy reforms, the need to protect vulnerable groups; (5) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to

provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

- t. International Development Act Sec. 711, FAA Sec. 463. If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (1) the world's oceans and atmosphere, (2) animal and plant species, and (3) parks and reserves; or describe how the exchange will promote: (4) natural resource management, (5) local conservation programs, (6) conservation training programs, (7) public commitment to conservation, (8) land and ecosystem management, and (9) regenerative approaches in farming, forestry, fishing and watershed management. N/A
- u. FY 1990 Appropriations Act Sec. 515. If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified? N/A
2. Development Assistance Project Criteria (Loans only)
- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest. N/A
- b. FAA Sec. 620(d). If assistance is for any productive enterprise which

- will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan or has the requirement to enter into such an agreement been waived by the President because of a national security interest? N/A
- c. FAA Sec. 122(b). Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities? N/A
3. Economic Support Fund Project Criteria
- a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA? N/A
- b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes? N/A
- c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A

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5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items, which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Procurements will be advertised in the U.S. in accordance with AID policy.
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him? Yes
3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? N/A
4. FAA Sec. 604(e). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A
5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.) It is expected that only U.S. and some local technical assistance will be financed by AID

6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? No
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? Yes; Yes
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? Such requirement will be included whenever AID financing is provided for such costs.
9. FY 1990 Appropriations Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? Such a clause will be included in all AID direct contracts.
10. FY 1990 Appropriations Act Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? No consulting services contracts are anticipated.

11. Trade Act Sec. 5164 (as interpreted by conference report), amending Metric Conversion Act of 1975 Sec. 2. Does the project use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate?
- To the maximum extent feasible, metric measurements will be used in the project.
12. FAA Secs. 612(b), 636(h): FY 1990 Appropriations Act Secs. 507, 509. Describe steps taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services.
- There is no U.S.-owned local currency available for this project.
13. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country, and, if so, what arrangements have been made for its release?
- No
14. FAA Sec. 601(e). Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
- Yes
- I. CONSTRUCTION
1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used?
- AID will not finance construction under this project.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?
- N/A

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress?
- N/A

C. OTHER RESTRICTIONS

1. FAA Sec. 122(b). If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?
- N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?
- N/A

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?
- AID's commingling requirements will be observed. No project of a Communist-bloc country is involved with the AID project.

4. Will arrangements preclude use of financing:

- a. FAA Sec. 104(f); FY 1990 Appropriations Act under heading "Population, DA," and Secs. 525, 535. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for

The Project Grant Agreement will provide that grant funds may only be used for permissible project activities; however,

any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion?

specific prohibitions addressing the listed exclusions will not be included in the Grant Agreement.

- b. FAA Sec. 483. To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?
- c. FAA Sec. 620(q). To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President?
- d. FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?
- e. FAA Sec. 662. For CIA activities?
- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?
- g. FY 1990 Appropriations Act Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel?
- h. FY 1990 Appropriations Act Sec. 505. To pay U.N. assessments, arrearages or dues?
- i. FY 1990 Appropriations Act Sec. 506. To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?

- j. FY 1990 Appropriations Act Sec. 510.
To finance the export of nuclear equipment, fuel, or technology?
- k. FY 1990 Appropriations Act Sec. 511. For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?
- l. FY 1990 Appropriations Act Sec. 516; State Authorization Sec. 109. To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?
5. FY 1990 Appropriations Act Sec. 574.
Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? Yes
6. FY 1990 Appropriations Act Sec. 582.
Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? No

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Annex F. Conceptual Framework

The purpose of TIPS is to increase international competitiveness of and employment in Sri Lankan private industry by improving its performance in choosing, acquiring and mastering technologies, with support from U.S. business and technology, and by facilitating removal of policy impediments.

The objective of technology transfer is change - the change of a production process, a product design, or a management system etc. Usually we can look toward successful technology change as a change in either a hard or soft technology system. These changes will be the result of some type of transaction that brings the technology to the Sri Lankan firm from a supplier that might be a foreign firm, a local university, or an equipment supplier. Local firms must be helped to determine what technology needs exist, how to search for the appropriate supplier, how to develop the appropriate transaction and finally to assist them in installing, adapting and maintaining the technology. To design such a technology appraisal and support program it is necessary to develop a functional definition of technology, and understand the process by which firms decide to acquire technology, search for alternative suppliers and structure the transfer transaction.

- Definitions and Planning Concepts

For ease of discussion, technologies* can be categorized as hard or soft. Hard technologies include equipment, production systems, formulas, etc. Soft technologies are embodied in management systems like planning models, marketing systems, inventory and quality controls, maintenance programs, training approaches and other systems not specifically related to a particular industrial process.

In traditional management theory the management of change is in fact the objective of management practice. Planning processes help the firm identify goals and specific strategies for achieving those goals which are associated with change - change in market share, change in profitability, change in product mix. Effective plans normally dictate how a firm is going to organize its technology and what new inputs are required. Effective organizing includes the ability to assemble work teams, train staff, and establish reporting and control structures. The controlling aspect of management includes the routine procedures, budgets, performance evaluations, quality control systems and other management practices necessary to help the organization achieve the plan target. A discussion of the practice of management in regard to planning, organizing, and controlling allows us to view the technology change process from the point of the Sri Lankan firm. The first problem in their basic process is their ability to plan and analyze needs

(*TECHNOLOGY is defined here as the technical and managerial knowledge, skills, equipment and processes used to develop, produce and market goods and services.)

and opportunities. As pointed out in recent surveys and case studies the technology change process is inhibited by an ability of the firm to identify opportunities and qualify the value of technology change. Additional problems arise from the firm's ability to organize itself to seek out technologies that it does require and install these technologies efficiently. Surprisingly, most larger companies are not primarily successful because of the technologies they can create themselves but the ability to find and assimilate other technologies. The Japanese automotive industry and Korean pharmaceutical firms are examples of how entire sectors have been built by knowing how to know what you need, find it and get it installed(adapted) efficiently into a new organization.

- Technology Change Process

The basic steps of the technology change process from the view of the firm can be described in four basic stages:

- A. IDENTIFY AND QUALIFY NEED/OPPORTUNITY
- B. SEARCH FOR SOURCES
- C. ACQUIRE AND INSTALL/ADAPT TECHNOLOGY
- D. MAINTAIN THE NEW TECHNOLOGY

The first part of the technology change process is associated with planning and the ability to "diagnose" a need or opportunity. Often this is called gap analysis - being able to identify and specify the gap that exists between an existing operating situation and where the firm could be if it changed something - bought a new piece of equipment, developed a new marketing plan, or introduced better skills management.

An equally difficult problem in technology transfer is understanding how to get the technology from one place to another. This involves a clear understanding of two issues - how technology is actually transferred and what type of transactions are used to organize the transfer.

Within multinational corporations or for a small firm operating alone in the international context there are only 8 mechanisms by which technology actually gets into a firm. The most important and often overlooked mechanism is recruitment; gaining technology by hiring a person with the expertise needed. Most business plans for setting up a new operation will focus on transferring technology by transferring personnel or hiring new staff and then supporting them with additional transfer mechanisms including the following:

- RECRUITING OR TRANSFERRING STAFF
- MANUALS AND DOCUMENTED PROCEDURES
- ACQUISITION AND LICENSING OF EQUIPMENT AND TOOLS
- TRAINING PROGRAMS (i.e. FORMAL, ON THE JOB TRAINING, SHORT TERM TRANSFERS TO EXISTING PLANTS AND OPERATIONS)
- GENERAL DOCUMENTS , MAGAZINES, CATALOGUES ETC
- ROUTINE EXCHANGES OF STAFF OR TECHNICAL VISITS
- ROUTINE COMMUNICATION AND BUSINESS DIALOGUES
- FORMAL LINKAGES TO OTHER BUSINESS ENTITIES

All technology gets transferred through one of the above mechanisms. The transactions that organize the mechanisms can vary dramatically. A large direct foreign investment will normally involve all of the different mechanisms to get a new venture started. In contrast, a licensing agreement often spells out very clearly which mechanisms will be used and exactly how much effort will be given to training or documents transfer, etc. In Sri Lanka, the major transaction leading to technology transfer will continue to be equipment sales, although there is some opportunity for expanding the types of joint ventures that involve smaller U.S. firms who would contribute used equipment and technology rather than capital. "Coventures" is a term that summarizes a variety of contractual arrangements that link firms in ways other than forming a third new entity in a joint venture. Licensed production, technical assistance agreements, and long term subcontracting arrangements are all examples of different coventure transactions that package technology transfer mechanisms.

It is easy to envisage how technology gets transferred through training programs and the procedures required to operate new systems. Naturally equipment and supplies embody technology. Often times the more valuable technology for the long run has to do with the ongoing access to information that comes from routine exchanges of staff, conference attendance and just simple daily telex traffic between different technology suppliers. These ongoing technology transfers that come in such small doses are the key to continuing improvement of large corporations. In Sri Lanka the technology installation and innovation process must capture the basic transfer mechanisms as well as the ongoing incremental change mechanisms.

- Sources of Technology - The Technology Suppliers

Holders of technology and their access channels can be categorized as follows:

- MANUFACTURING FIRMS (FOR THEIR OWN PROCESSES)
- CONSULTING FIRMS
- EQUIPMENT SUPPLIERS
- JOINT VENTURE PARTNERS
- LICENSING FIRMS
- MARKETING FIRMS
- UNIVERSITIES AND RESEARCH CENTERS
- PRIVATE VOLUNTEER ORGANIZATIONS WITH INDUSTRY EXPERTS
- ASSOCIATIONS AND STATE DEVELOPMENT AGENCIES
- GOVERNMENT AGENCIES.

In the Sri Lankan context the Harrell survey suggests that the major transaction will be equipment sales and that the mechanism for transfer will include the equipment transfer and associated procedures, manuals and training. Increasingly, there is the opportunity to link the Sri Lankan firm to small and medium sized U.S. firms for more extensive technology assistance than would be available through traditional equipment sales channels. These firms are not normally participants in international technology

transactions but certainly have the hard and soft technology systems and know how to install them to maintain the appropriate balance. The key to involving this type of technology supplier is the approach that can demonstrate reasonable self interest for all parties participating. For the U.S. firm, supplying know how and available equipment is low cost and may offer initial means for developing an international experience and operating base. However, the main players will still be the experienced technology suppliers including equipment sales and licensing firms.

- Constraints to Technology Transfer in Sri Lanka

In the earlier discussion we pointed out that the decision making steps of the firm must always begin with a qualified idea; an idea that is perceived in terms of costs and benefits to the firms and the degree of risk surrounding the tasks of locating, acquiring and installing the technology. We also argued that technology transfer success not only depends on getting the initial technology into the firm successfully but being able to continuously update and manage the utilization of the technology. The success then requires ongoing management.

There are a variety of constraints that inhibit the Sri Lankan firm and these have been described in earlier case studies and the prefeasibility study , SRI LANKA; FINANCING TECHNOLOGY TRANSFER. (prepared by ITM&F Inc. July 1990). This material complements other research programs carried out by IESC and the USAID project on Market and Technology Access(MTAP). The major obstacles include:

- Difficulties in identifying technology needs and planning the acquisition and application of technologies.(see A STRATEGY FOR INDUSTRIALIZATION IN SRI LANKA-Ministry of Industries, Dec 15 89)
- Difficulties in developing managerial systems (quality control, marketing research, subcontracting etc) that can allow a firm to administer and apply hard technologies. (See ITMFs study SRI LANKA; FINANCING TECHNOLOGY TRANSFER)
- Poor access to industry networks that can help supply information and contacts necessary for developing effective plans and alternatives for technology change.(See Ernst and Young-MARKET AND TECHNOLOGY ACCESS PROJECT, 1989)
- Limited availability of experts and assistance to assist in acquiring and installing technology. (See ITMF op. cit.)
- Limited managerial ability to locate and manage outside assistance in regard to search, acquisition and installation of technologies.

- Limited managerial ability to install and adapt technology or to manage ongoing productivity improvement.

In Sri Lanka the prevailing approach to technology transfer relies on the customers to use equipment suppliers and technical publications to identify sources of technology. It is intended that the intervention approach proposed for TIPS will improve international contact for Sri Lankan firms. However, dramatic changes are unlikely to be achieved in the near term and the project design should not anticipate such dramatic types of transactions as large scale joint ventures or significant direct foreign investment.

The approach to technology acquisition is ad hoc and driven by short term requirements to improve production costs or achieve marketing advantages through differentiation of products. Examples of the weakness in planning technology change are demonstrated in the Sri Lankan case studies of the rubber products industry and tea machinery manufacturing. The ceramics case makes a unique argument about the strong weaknesses associated with "marketing technology" by which the author refers to those technologies associated with product design and ability to understand sales channels. This, in fact, is another planning problem; the need for clear market research and market strategy development.

The overriding objectives of technology change for a firm will always be the opportunity to open or exploit a market or the ability to lower costs. These are the driving forces for the firm and the market development objective is probably more powerful than the cost reduction goal.

With regard to networks, the case studies also point out how technology planning and development take place. Within larger firms, technology changes are planned by exchanging ideas among divisions and creating special planning teams that can draw on information and ideas from other groups and outside information sources. The smaller firms in Sri Lanka do not have such linkages except in the cases where they have some link with outside firms or with outside information and ideas through university centers. Participation in trade shows and reviewing journals is a poor alternative to working with personalized and expert networks.

Annex G.1. Technical Analysis

Sri Lanka's manufacturing sector, excluding textiles and garments, is the target group for TIPS. This sector accounted for 20% of national exports in 1989. Section 2.4.3 above, analyses the structure of the manufacturing sector, suggesting that the 1300 large private sector firms and the top 5000 SME's will be the primary focus for TIPS.

To obtain a better understanding of their technology needs, and to design an effective intervention mechanism, three sub-sectors, (light engineering, gems and jewelry, ceramics) were selected for "technology surveys" during the TIPS project design phase. These three sub-sectors account for 6% of national exports. The three technology surveys disclose varying degrees of readiness among private firms to pursue the search for technological improvement.

A segment, (say six firms) from each sub-sector is ready to pursue immediately the kinds of searches that the TIPS technology grant program is intended to serve as soon as the program is in place. While additional promotion measures aimed at each sector can be expected to yield additional applicants, it is believed that the positive experience of the first set of applicants will, of itself, generate additional demand for TIPS Technology Grants from their competitors.

The findings of the technology surveys provided data to structure the terms and conditions of the Technology Grants and also offered guidance on the nature and design of the promotion/ diagnostic/ information components of the project.

Summary findings from the technology surveys of the three sector surveys follow:

A. Light Engineering Industry

A survey of the Light Engineering sector reveals, in general, that skill levels and product range/volumes are matched to current domestic market needs.

Export possibilities for the local manufacturers however, are quite small at present, due to overwhelming constraints, such as:

- a) Product volume capacities have to be enhanced by ten to one hundred fold to enter world markets at internationally competitive prices, even in potential niche markets;
- b) The local manufacturers' knowledge of world markets is very limited, with no adequate mechanism currently in place to obtain information flows at affordable costs;

- c) Present cost of money, both for working capital and for capital equipment purchases, prevents many businesses from rising above the day-to-day struggle to keep afloat, let alone to enhance operations for an export thrust.
- d) Skill levels in middle and lower management, industrial engineering and quality control, although barely adequate for domestic - bound factory outputs, are totally inadequate for entry into the export of product for world markets.

There are approximately 150 large companies in the light engineering sector, of which 4 were visited. From what was observed, all could use technological assistance to enhance day-to-day operations and improve present and potential export volumes. It is estimated that 20-30 companies in the large classification would desire assistance in the areas of productivity and quality improvement.

In the SME sector, (approximately 600 companies with potential demand for TIPS consideration), export sales were found to be very limited in nature, with several of the visited companies having occasionally exported to nearby markets such as the Maldives.

In the Light Engineering sector a great need for specialization was in evidence, for enhancement of both efficiency and quality. For example, half for the 18 companies visited made their own castings, perhaps once a week, because of a perceived lack of a supplier industry. With proper technological transfer from specific specialists, along with some inter-company cooperative motivation, feeder industries could be developed.

In the technology area, acquisition of skills of management, industrial engineering and quality control, and proper utilization of these skills, could be the trigger to lift many local companies from their collective malaise. Improvement and proper utilization of these skills would raise profits by an estimated 15% to 20% of sales billed, on average. Profit enhancement of this magnitude would allow repayment of bank loans, increase of plant capacities, and then entrance, with niche products, into the export markets.

Another export market that local companies can enter with relative ease is the supply of free trade zone operations with product, contract assembly of sub-assemblies, and services. Logical products would be packing materials, clothes hangers, wooden skids for shipments, repair services, and start up supplies of workbenches, chairs, etc.

This backward linkage with the free trade zones would improve quality of products locally made and prepare companies so involved to better understand world-class standards of performance, both in physical properties and in needed delivery responses and responsibilities.

It has been noted that at present a duty of at least 10% (5 + 5) is in place on all raw materials. Recognition is given to the fact that government revenues are acquired by this mechanism, but it would seem wiser to look to other avenues of revenue generation and put raw materials duties and attendant turnover taxes (not value added taxes) to zero. This would promote the utilization of better grade materials and enhance the breadth of local products produced. Also it would negate the need to post bonds for temporary import of raw materials for what exported product lines exist, and encourage exports.

A typical Technology Grant program in the light engineering sector would assist a medium size company of, say 80 employees, to train staff in lower managerial skills, plant layout, productivity improvements and would utilize hands-on industrial engineering and quality control theory and practice. A consultant with these skills would be assigned to the candidate company for up to three months at a total cost of about \$30,000. In addition, a candidate company employee and the consultant would visit a well organized and productive plant of similar nature located in Singapore, Hong Kong or another nearby country, at a cost of \$5,000 for seven days. Finally, and of great importance, the consultant would make a return trip after three to six months for one week. This would tend to encourage the client to make needed changes before the follow-up visit. This trip would cost an additional \$7,000. The total project cost would be \$42,000 of which the client would pay as much as 50%.

B. Gems and Jewelry Industry

a) Gems

Industry Structure: The industry is organized into about thirty large firms; seven also make jewelry. Hundreds of very small shops also operate.

Product: a) High value Corundum which after heat treating, done locally, becomes sapphire or ruby; b) Semi precious stones, particularly Topaz, which is cut in calibrate sizes.

Product Value: Exports in 1988 exceeded 2 Billion rupees.

Technology Needs: a) Ongoing improvement of cutting equipment, much of which is made locally; b) Improvement of heat treating furnaces; c) Better predictability of colors achieved by heat-treating. Research in b + c is being carried out by CISIR.

Other Problem Areas: a) Lack of working capital to buy expensive, high value rough; b) Lack of marketing expertise in developing key markets, exports to the US in 1988 were only 128 million rupees. In many case expense prohibits attendance at major gem shows, e.g. Tucson.

Linkages to other industries: a) Most important is linkage to the mining sector; b) Purchases of locally made machinery; c) Purchase of general supplies; d) Linkage to the export sector; e) Linkage to the Banking sector.

Future Potential: Existing technology is not far behind that of its major competitor: Thailand. Relatively small grants over the life of the project to CISIR for research and to individual firms of marketing assistance would yield good dividends if results are disseminated to industry.

Grants: Individual firms would be considered for two types of grants; a) Consulting help towards improved marketing. This might be done on a time-sharing basis where one consultant working for three months might work with five or six firms. Total cost: About \$30,000.- each for 3 visits; b) Annual grants to help with expenses for visits to Tucson. There one would see the latest equipment and make valuable contacts. Approximately \$6,000.- per trip for 5 firms per year for 4-6 years of which 30-50% would be paid by the recipient.

Annual grants for research to CISIR and other research centers yet to be established should be considered, especially the proposed gem research facility. Grants of \$30,000 p.a. to three institutions for six years.

Benefits: Increased competitiveness vis-a-is other countries, greater exports, a general upgrading even of small shops as production needs rise, especially in high value stones.

Generating Demand for grants: Since comparatively few firms might be suitable in the beginning individual interviews might be best by the consultants recommended above. Seminars might be used at a later date.

Measuring Effectiveness of Grants: Starting from a baseline one could measure annual increased in a) output per employee, or b) Use statistical sampling.

Government Policy: The hitherto restrictive measures especially on imports of rough Topaz, are being relaxed, albeit slowly.

b. Jewelry

Industry Structure: While there are 8,600 individual craftsman making gold jewelry only about ten establishments can be considered to be manufacturing jewelers in the industrial sense of the term.

Product: Primary handmade gold. Mass produced gold(Au) and silver(Ag) items are still in their infancy.

Export Value: In 1988 about 111 million Rupees, primarily to Germany and Japan.

Technology Needs:

- a) A proper infrastructure. This consists of (i) Assay Lab for Au + Ag, (ii) Refining facilities for Au+Ag, (iii) Alloying + melting facilities for Au+Ag, (iv) Rolling + Wiredrawing capabilities.
- b) Simple, but efficient lost wax casting technology;
- c) Better finishing technology including electroplating;
- d) Improved assembling techniques, especially soldering;
- e) Design + model making capabilities.

Other Problem Areas: a) Lack of marketing. At present German importers supply designs for the growing silver sector; b) Lack of working capital. Exporting in quantity will require large investments in gold + silver; c) Investment capital. To equip even a small shop decently can cost the best part of 1 million rupees.

Linkage of other industries: a) At least 50% of all casting equipment could be built by local machine shops. The same with polishing lathes, benches, etc; b) Local purchases of supplies; c) Linkage to the export + Banking sectors d) to the Gem sector.

Future Potential: Enormous. A small shop with 15 employees could make 2,000 rings per week with a gross revenue of \$3.5 mm at a gold cost of \$2.3 million. Modest grants for business planning, marketing, training of personnel in modern techniques could make this country the next Thailand for Jewelry supply.

Grants: Individual firms might require: a) A Consultant to develop a business + marketing plan. One month at cost of \$12,000 should be ample; b) A hands-on technical consultant to teach casting + finishing techniques. Two months at cost of \$22,000.- Both should make at least annual follow-up visits of one week (They could serve several clients); c) Visits to at least the major New York Jewelry show in July would cost \$6,000.- per person of which 30-50% would be paid by the recipient; d) There should be a grant for an information center for the gem and jewelry industry. It should have magazines, annual publications, books, videos, etc. Initial cost: \$20,000,

Annual cost \$3,000.- e) Two Consultants for teaching at the proposed infrastructure facility one for assaying + refining - 2 months at \$22,000; one for alloying etc -one month at \$12,000.-.

Benefits: A viable export industry; b) The Jewelry manufacturing companies would become customer for low value calibrated stones made by the gem sector; c) A potentially large user of locally made equipment.

Government Policy: It is essential for a competitive industry that there be no import duty on raw materials. Mechanisms to lease and/or license precious metals and manufacturers are well known and could prevent illegal use by requiring a strict accounting of metals used.

C. Ceramics Industry

In depth facility inspections have been completed at seven industrial scale factories, three cottage or craft scale factories, three ceramic mineral producing mines and mills and two technical centers. A number of industrial factories produce multiple product lines. Lanka Ceramics Limited at Piliyandala produces sanitaryware, food service ware and artware.

For the purposes of organization and structure, the ceramics industry can be classified as:

- A. Whiteware Producers
 - 1. Sanitaryware
 - 2. Floor & Wall tiles
 - 3. Artware
 - 4. Food service ware
 - 5. Porcelain Dinnerware
- B. Refractories Producers
- C. Mineral Mines and Mills
- D. Terra Cotta Pottery & Building Products

The Sri Lankan ceramic industry has only 15 industrial scale factories producing whiteware, refractory and glass container products. The brick, roof tile and terra cotta pottery segment of the industry has an estimated 200 small to medium sized factories. The cottage scale artware and tableware segment is probably served by hundreds of 5-20 man shops.

The estimated market for whiteware products in the U.S. for 1989 was \$3.3 billion at the manufacturing level.

Export performance for these sectors during the 1984-1988 period, according to the External Trade Statistics of Sri Lanka, as provided by the Sri Lanka Business Development Center:

Sanitaryware	-	Exports insignificant - products designed for local market only.
Floor & Wall tiles	-	Exports Rs. 130,000,000 average future growth is design appearance, performance and capacity limited.
Art Ware (decorative articles figurines etc.)	-	Exports growing vigorously. Success with technical and marketing arrangements with Japanese collaborations.
Foodservice ware (porous body-glazed surface)	-	Steep decline - loss of market. Product design is the major weakness. Lack of dependable marketing channels must be evaluated.
Porcelain Dinnerware (Impervious body-glazed surface)	-	Exports steady Rs. 98,000,000 average. Growth should be evident during 1989-1991, as capacity has been increased and productivity improved by major producers. A 50% expansion program is planned by Dankotuwa Porcelain by 1994.

The export potential for refractory products is limited and the industrial mineral mining sector operates on such a small scale that it cannot be considered competitive in the international market place. The kaolin deposits might be exploitable if the stated measures of 350,000 M.T. could be increased by 10 to 100 times.

Policy Constraints

1. Export Financing - Italian tile exporters to the U.S. have export subsidies that permit 180 day payment terms on open account. In order to buy into the U.S. market share Sri Lanka producers would need to offer similar terms for an introductory period of 3 years, if an export market of \$30,000,000 to \$50,000,000 per year is to be developed.
2. LNG and LPG prices controlled by a Governmental Agency are approximately 100% higher on a delivered basis than the cost of similar fuels in Japan. A mechanism to provide fuel services at world prices is essential to the growth of this industry.

3. The production of porcelain tableware, sanitaryware and wall/floor tile products requires a minimum of \$1 of investment per \$1 of annual sales excluding the cost of land-building-site development and working capital. At a total 21% interest rate capital costs are prohibitive. There is supposedly a 10% cap of interest rates for investment in facilities for export production of ceramic articles. Interest payment holidays for a 3 year start up period should be studied.

Likely Demand for TIPS Assistance

Two segments of the whiteware industry will benefit rapidly from technology transfer projects. These are the wall and floor tile and artware sectors. Two other sectors that may benefit from technology transfers are the sanitaryware sector and the terra cotta flower pot and roofing tile sector. A typical cross section of technology transfer services for each of these sectors should focus on:

- a) Adapting to internationally acceptable product specifications
- b) Designing both functional and decorative products meeting specifications in (a) above.
- c) Developing marketing and distribution strategies - co-ventures, joint ventures.
- d) Evaluating and selecting production technology.
- e) Rationalizing a scale of operations that is large enough to reach a point on the production cost curve to be competitive in the international market place.

The TIPS program should be structured into three phases for the ceramics sector.

- | | | |
|-----------|---|--------------------------------------|
| Phase I | - | Design - Specification segment |
| Phase II | - | Market - Production planning segment |
| Phase III | - | Scale of Enterprise segment |

For the ceramic tile and sanitaryware segments, the size of each grant to a firm is estimated to be:

- | | | |
|-----------|---|------------------------------------|
| Phase I | - | \$30,000 requiring 60 working days |
| Phase II | - | \$45,000 requiring 90 working days |
| Phase III | - | \$15,000 requiring 30 working days |

For artware and terra cotta products the project scope is much simpler. Combined grants to bring a consultant to serve 2 or 3 companies on a time-share basis could be managed concurrently.

Each grant is estimated to be:

Phase I	-	\$10,000	requiring 20 working days
Phase II	-	\$10,000	requiring 20 working days
Phase III	-	\$ 5,000	requiring 10 working days

For these segments U.S. and local technical consultants are recommended. There is an ample technical resource in the Sri Lanka Ceramic Society to accomplish the necessary evaluation and technology transfer with some inputs from the U.S. market.

For the tile and sanitaryware sectors, U.S. and Italian inputs are required for Phases I & II. Once these are completed perhaps 50% of Phase III can be locally managed.

The objective for the technological intervention in each candidate segment of the ceramic industry is to upgrade production capacity for export purposes only. There is a statistical information base from which to measure the success of TIPS. Success of any one of the industrial scale projects; tile, sanitaryware or terra cotta projects yielding increased export sales of \$5,000,000 to \$20,000,000 will more than justify the funds committed to this project. Successful completion of one successful \$25,000 artware project will employ a minimum of 200 people and generate a minimum of \$1,000,00 of export earnings.

The number and scope of the TIPS projects that might be expected to develop for the ceramics industry is largely dependent on how rapidly Lanka Ceramics Limited is privatized. There is a potential demand for a minimum of -

- 2 projects in the Sanitaryware sector
- 3 projects in the Ceramic Tile sector
- 1 project in the Food service ware sector
- 2 projects in the Industrial mineral sector

With regard to the SME enterprises, the only demand for technology grants, that can be foreseen at this time, are -

- 5 projects in the Artware sector
- 2 projects in the terra Cotta sector

Conversations with R. M. Tennekoon, Chairman of Lanka Tiles Ltd. suggests a keen, two fold interest in the TIPS program. One area of interest is in upgrading technology and strong thinking their export marketing activity to the U.S. and Europe, for their current floor tile product line. The second area is technology-engineering-business planning for a new wall tile factory.

-CERAMIC MINERAL SECTOR

The indigenous raw materials used for porcelain and semi-vitreous ceramic products is generally of acceptable quality. Some materials are imported to upgrade color and workability of the porcelain material system (Sri Lanka is +80% self sufficient in porcelain body materials). It is 100% self sufficient in body materials for semi-vitreous wares, and tile products.

The existing mineral base could support an export industry in table ware, ceramic wall and floor tiles several times the current production volumes.

The scale of mineral production is small, and in the case of kaolin, non competitive with producers in other parts of the world. They would benefit substantially from bleaching, flotation and high intensity magnetic separation technologies. Perhaps even develop an export business for pigment quality kaolin, if the 350,000 M.T. reserve could be increased by 10 to 100 fold. (The kaolin pigment/ceramic materials business is approaching a \$1,000,000,000 international business, centered in the U.S. and U.K.)

There is no evidence that mineral beneficiation process development is being conducted in any systematic way (that the operators are aware of). Some good analytical work has been done to quantify the nature of reserves and is used for selective mining purposes.

The Ceramic Research Center, a part of the Lanka Ceramic Ltd., organization is well staffed and equipped. A technical training center is under construction at the CRC to provide both staff and facilities for training technicians for industry. This project is funded by UNIDO. Whether a subsidiary of LCL can train competing private industry operatives effectively is subject to question?

Given the need to better understand the mineral systems used by the industry and the techniques available to beneficiate them, where they are deficient, the intended training program/technical capability of CRC/LCL could provide a high quality local base from which to develop the necessary material and processing skills.

Projects that could have local impact are:

- a) Graphite - characterize physical properties and design end products processes. Upgrade mineral purity. Develop binder technology for metallurgical uses.
- b) Zircon - determine the feasibility of producing pacifiers and refractories from Zircon concentrates.
- c) Kaolin - determine the feasibility of upgrading brightness, and reducing abrasion of reserves for potential uses as a white pigment/filler in non ceramic applications.

- d) Vein Quartz - determine the feasibility of producing semi-conductor quality silicon and metallurgical quality ferro-silicon. An ore base with purity of 99.90+% is required for semi-conductor quality silicon.
- e) Titanium dioxide minerals - Rutile & Ilmenite. The mineral base for a titanium pigment industry is available.
- f) Apatite - The mineral base for a phosphate chemical - fertilizer industry is available.

With the exception of the graphite and the semi-conductor projects which are specialty industries, there are large international markets for the end products noted, which are measured in hundreds of millions of U.S. dollars.

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INSTITUTIONALISED SOURCES OF TECHNICAL/INDUSTRIAL INFORMATION

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Sri Lanka Business Development Centre (SLBDC)	41/22, Sir Mohammed Macan Markar Mawatha Galle Face Court 2 Colombo 3.	Mrs. G. Abeydeera
Centre for Industrial Technology Information Services (CITIS)	45, St. Michael's Road Colombo 3.	Mr. Nanda Senanayake Project Manager
Ceylon Institute for Scientific and Industrial Research (CISIR)	363, Bauddhaloka Mawatha Colombo 7.	Miss. C.L.M. Nethsinghe
UNITED NATIONS INFORMATION CENTRE	202-204, Bauddhaloka Mawatha Colombo 7.	Mrs. Nimala De Fonseka
JETRO Colombo Office	13th Floor, Ceylinco House 69, Janadhipathi Mawatha Colombo 1.	Director
Korea Trade Office	Room 210, 2nd Floor Liberty Plaza 250, Duplication Road Colombo 3.	Yong Keun Hum Director (Rep)
Sri Lanka Standards Institute	76-11 Duminda Building Colombo 4.	Mrs. S.M. Wijewansa
Rubber Research Institute of Sri Lanka	Talawala Road Ratmalana	Dr. L.M.K. Tilekaratne
Coconut Information Centre (CRI)	Coconut Research Institute Baudirippuwa Estate Lunuwila.	Mr. M.J.C. Perera Project Leader
National Engineering Research & Development Centre [NERD]	2P-17B, IDB Industrial Estate Ekala, Ja-Ela.	Chairman

National Resources Energy & Services Authority of Sri Lanka (NARESA)	47/5, Maitland Place Colombo 7.	Director Information
National Building Research Organisation (NBRO)	99/1, Jawatte Road Colombo 5.	Mrs. Srma De Soyza Librarian
Trade Information Service	Sri Lanka Export Development Board Ramada Renaissance Building 115, Sir Chittampalam Gardiner Mw. Colombo 2.	Mr. Shantha De Silva
Ceylon Chamber of Commerce	No. 50, Nawam Mawatha Colombo 2.	Mr. M.C. Atton Asst. Secretary
Dept. of Registry of Patents & Trademarks	267, Union Place Colombo 2.	Mr. N.E. Ratnajeeva
Institute of Engineers (Sri Lanka)	120/15, Wijerama Mawatha Colombo 7.	Mr. D.D.S. Jayawardene
Tea Research Institute	St. Coombs Estate Thalawakele.	Librarian
Sri Lanka National Design Centre	44 A, Dickmans Road Colombo 5.	Mrs. Chandramali Sarathchandra Librarian/Information Officer
Central Environmental Authority	New Town Colombo 10.	Librarian
Coconut Development Authority	Duke Street Colombo 1.	Chairman
CINTEC	Suite 2-210, BMICH Buddhaloka Mawatha Colombo 7.	Prof. V.K. Samaranayake Chairman
Federation of Chambers of Commerce & Industry	9, Dickmans Lane Colombo 5.	K.C. Vignarajah

Rice Research Station Board	Mahailuppallama.	Mr. Lionel Weerakoon
National Aquatic Resources Agency	Crow Island Mattakkuliya.	Director General
Agrarian Research & Training Institute	114, Wijerama Mawatha Colombo 7.	Mr. W. Ranasinghe Librarian
Water Resources Board	2, Gregory's Avenue Colombo 7.	Chairman
National Packaging Centre	Sri Lanka Export Development Ramada Renaissance Building 115, Sir Chittampalam A. Gardiner Mawatha Colombo 2.	Mr.K.K.K. Wijesundera

6th September 1990.

Annex G.2. Economic Analysis

The TIPS project purpose is to increase the international competitiveness of private sector Sri Lankan industry by improving the performance of firms, primarily in export oriented industries, by choosing, acquiring and mastering technologies, thereby generating additional employment opportunities.

It is well recognized that a suitable policy framework, allowing market forces to allocate resources, is essential to the growth of the exporting industries. Numerous studies on the Sri Lankan economy during the last decade had concluded that major policy reform is needed to ensure "a system of neutrality of incentives between import substituting and exporting activity". There is increasing evidence that these policy reforms are well into implementation, the most recent action being the GSL reform of the import tariff structure. Thus, the necessary policy framework for achievement of the project purpose is well on track.

But past experience in developing nations indicates that there are also non-price constraints which impede the growth of the export sector. At a minimum, these constraints act to delay the responsiveness of firms to the price incentive structure. Ann O. Krueger, in her synthesis volume of NBER studies of foreign trade regimes of ten selected developing countries (1978, p.282) concludes that, "While it is true that an export promotion strategy would be extremely difficult, if not impossible to carry out without a fair degree of liberalization and a relatively realistic exchange rate, the converse is not the case. The mere absence of an import-substitution bias does not seem to provide the required export push."

The TIPS project is intended to facilitate the acquisition, by Sri Lankan private firms, of one critical ingredient (competitive technology) needed to respond to international market opportunities.

The "economic considerations" section of the Project Identification Document for this project poses two critical questions:

a) Do the expected economic returns warrant subsidies to firms in selected (export) industries to finance part of the acquisition of technology-related advice?

b) Is the mode of the proposed intervention the most appropriate in terms of impact and contribution to overall resource management efficiency?

In light of the two industry surveys (one of 60 firms and another of 29 firms) and of three industry surveys (ceramics, light engineering, gems and jewelry) conducted during the course of the design effort for this project, these questions can now be answered with greater confidence.

The industry survey of the light engineering sector, performed by an exceptionally qualified U.S. industrial engineering consultant found numerous instances of firms that could reduce production costs in the range of 15-20% of sales billed by introducing well known soft technologies (improved process flows, inventory management etc.) and modest amounts of balancing equipment leading to quality assurance required by international markets. Regrettably, many firms were convinced that their production methods were satisfactory and showed that they did not truly appreciate the opportunities to achieve these significant cost reductions and quality improvements. The reduction in protection from imports for these industries will put pressure on the firms to find ways to become more competitive. The TIPS project is intended to provide the firms with ready access to locate the options available to them to help themselves.

In ceramics, opportunities exist to participate in a vast international market for fine porcelain, sanitaryware and tile exist. Mineral materials are locally available in abundance, a large and willing work force is available and certain companies, which have used their initiative in acquiring outside technology, have demonstrated success in transferring and installing both hard and soft technology to effectively penetrate the international markets.

The markets that can be readily penetrated by Sri Lankan manufacturers are significant. The whiteware industry in the U.S. is a \$3.3 billion per year business with porcelain and sanitaryware representing over \$2.0 billion. The tile industry is a \$1 billion dollar business, with 52% of the goods supplied by imports. For Sri Lankan companies to participate in these markets their cost of production must be structurally priced to allow their finished products to be competitive. This can be accomplished by employing the best available technology at a sufficient scale of production and by designing the product functionally and stylistically to suit international demand. A long term commitment (minimum 3 years) to a marketing effort also must be made.

A 1% share of the whiteware market in the U.S. equates to \$20 million in export earnings. A 1% share of the tile market in the U.S. equates to \$10 million per year in export earnings. The long term benefits from such exports will multiply through the Sri Lankan economy.

In gems and jewelry the introduction of a rational lost wax casting process, to an industry that has a six hundred year heritage in Sri Lanka, has the prospect of generating large returns from relatively small scale capital investments. For example, at a capital expenditure of about 1 million rupees, a well equipped small shop could manufacture 10,000 rings per month weighing 5 grams each. The operation would require a considerable amount of working capital to pay for a permanent amount (\$7,500) of feed stock plus daily raw material needs (\$7,500) for 2.5 kilos of 14 karat gold. World market prices of such rings are generally based on a 35% premium

over the metal cost, while direct labor plus overhead for such an operation in Sri Lanka would be less than 5% of metal cost.

The required technology is well established and can be transferred to Sri Lanka quite easily, within a six month period. If Sri Lanka can resolve the twin problems of providing the industry with access to working capital at reasonable rates, and providing the industry with a source of gold at international prices, Sri Lanka could become a major world supplier of jewelry, rivaling that of Thailand.

Success in any one of these sectors will more than justify the cost of the TIPS program.

The results of these industry sector surveys bring to mind the projects potential return on its investment by reduction of so called X-inefficiency, (i.e. increasing the efficiency with which manufacturing enterprises use their core technology as embodied in their core capital stock.) In a similar analysis (1986) of the opportunities for technological improvement in Thailand, Dr. Robert Muscat wrote,

"Recent studies of technological change and application in some dynamic NIC sectors (e.g. in Korea and Brazil) have shown that a major source of actual incremental application and utilization of new technical knowledge and equipment at that level of industrial development, has been the steady accumulation of small improvements in the ability to utilize the technology in the five to ten years after its initial installation, combined with small adaptations and further improvements and changes through the adjustment of the initial equipment investment and/or the addition of small, peripheral new processes (and the minor capital expenditures required for the acquisition of the equipment involved)."

In agriculture, rate of return analysis has been applied to demonstrate the direct relationship between the application of R&D results of research into specific yield-affecting plant characteristics and the resulting productivity change. In industry also, there has been a great deal of analytical work on the relative contributions of technological change, capital formation and labor productivity, to growth in economic output. Muscat sums up the conclusions of these studies as follows:

"...developing countries are characterized by less technology-intensive product mixes, less developed S&T resources, and a growth pattern of exploiting opportunities for technology import and ratcheting up as industrially more advanced countries shed product lines as part of their own process of structural change. Under these conditions technological change in manufacturing is largely demand-driven. Technological needs are typically for adaptation and application, testing and other services. The most typical weakness appears to consist

of the poor linkages between the local formal S&T structures and the individual firms. The major sources of technological change are external."

The TIPS project allows for the utilization of its resources for product adaptation and commercialization of available R&D. There are a few public institutions in Sri Lanka (such as CISIR, the Arthur Clarke Institute and several universities) that have some capability to perform such work. Sri Lankan firms will be able to avail themselves of services from these institutions with TIPS funding if the firm which obtains a grant is persuaded that the local institution is competent to provide the services. But the overwhelming amount of resources under the project are destined to facilitate the transfer, installation and mastery of known and readily available technologies which, because of Sri Lanka's remoteness and isolation, have not found their way into its private industrial sector.

Thus, the answer to the first question posed, (Do the expected economic returns warrant subsidies....) is clearly in the affirmative, based on the potential gains to be derived. It cannot be claimed that the TIPS approach, in and of itself, will bring about the desired increases in technological competitiveness for Sri Lankan industry. Other facilities (credit and capital, political stability, a neutral price structure, etc) are required to be in place as well. Technology is a necessary but not sufficient condition for manufacturing production and export growth. Other constraints may act against the installation and utilization of the technologies which TIPS will make available to the firms.

But TIPS will be a facilitator to make it possible for the industry to respond faster than it would otherwise, if it is allowed to respond and is willing to do so. It is structured in a manner to be consistent with previous efforts that have shown some success.

TIPS is an uncomplicated mechanism to reach directly into local industry and provide them with resources that they claim is needed if they are to install available technology to become competitive. It provides a linking facility between private supplier and private demander. No other mechanism offering greater prospects for efficiency suggests itself to accomplish the intended goals.

What sort of return on investment may be expected? As is characteristic of the entire R&D field, not all experiments will yield positive results. The successes must be sufficient to pay for the failures. Likewise, not every TIPS Technology Grant will lead to installation and utilization of the technology being sought.

It would be helpful to attempt to measure the spillover effect that might be attributable to project activities on the non-TIPS assisted firms in the same manufacturing sectors that had been selected to be promoted by TIPS. If disaggregated production and export data can be obtained for manufacturing sub-sectors that are

targeted for TIPS promotion, production and export growth will also be monitored during the period of project implementation. At present, no verifiable benchmarks for such a spillover effect suggest themselves but the data, if available, may offer some insight into the dynamics of the process of technological enhancement via the marketplace.

SOCIAL SOUNDNESS ANALYSIS

Socio-Cultural Context: The proposed project fits well into the GSL's current efforts to increase private industry production of non-traditional export products, create off-farm employment, and promote economic development in urban areas, including secondary towns and cities of Sri Lanka.

All these efforts aim, in turn, to relieve unemployment and income stagnation, especially among youthful entrants to the workforce who can no longer be absorbed in agriculture. The 1989-90 President's Commission on Youth Unrest identified the lack of hope for economic improvement as a major source of violence and anti-government feeling among the young. These problems cross all socio-economic and ethnic boundaries, including university students and graduates as well as the unskilled and impoverished, and encompassing both the Tamil and Sinhalese ethnic communities.

A recent AID-financed analysis of Sri Lankan programs in human resource development, particularly those aimed at vocational education, highlighted the problems of low productivity on the job.** One reason for lack of international competitiveness, according to this study, is that while Sri Lankan wage rates are low, unit labor costs are not, because of low labor productivity. The report recommended a substantial redirection of technical training toward private in-house on-the-job training of the workforce by employers to increase productivity. This approach, the consultants found, is likely to have a greater impact on economic growth and additional job creation than training of the unemployed, which does not in itself create employment. The TIPS technical grants program should be well-positioned to implement the study's recommendations.

The project will not be limited to a particular region, but many industries have a regional dimension. Assistance to the gem/jewelry sector, for example, could help generate employment opportunities in the south-central region, since gem deposits and related cutting and jewelry manufacturing workshops are found disproportionately in the Ratnapura, Galle and Beruwela areas where youth unrest and unemployment have sometimes been problematic.

Assistance to the ceramics and gem/jewelry sectors could have particular benefits for women. Since women constitute a majority of their work forces, they would benefit from upgraded technology and skill levels and improved quality control that make Sri Lankan products more competitive and increase value added. Alternatively, redundancies created by technological improvements could have a greater impact on women, who tend to be represented mostly in the lower skilled categories of the work force. As part of the

**Creative Associates International, Inc, Assessment of Skills Development Programs in Sri Lanka; 22 October 1990

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the monitoring and evaluation system, the TIPS project will track the participation of women in TIPS programs and the impacts, whether positive or negative resulting therefrom.

Ethnic minorities, too, could benefit from assistance to selected industries. Trade in gems, for example, is dominated by Muslims, and the goldsmith craft is traditionally the domain of a particular caste of the Tamil community. While the project would not target any particular group, and while specific sectors are cited here only for illustrative purposes, the point is that the project could well contribute to the socio-economic betterment of disadvantaged groups.

Beneficiaries and Employment : The primary beneficiaries of the project will be the private sector firms that receive grant assistance and technical support aimed at technological improvement. As their enterprises grow and change, they should produce indirect benefits for their current and future employees along the lines described above.

Ultimately, total employment and incomes in industry will grow, regardless of differential benefits between industry employees, as industry becomes more competitive in international markets. While the restructuring and privatization of state-owned industry now taking place may result in a significant loss of (unproductive) industrial employment, TIPS focuses on the private side of industry that will need to pick up the slack. Technological change in private firms may cause labor redundancies in some cases, but sectors will be chosen for TIPS by their export and employment potential and the vast majority of the Technology Grants are expected to add to employment through the addition of new product lines and expanded markets.

Participation: Private firms will participate by initiating technology grant proposals and contributing a portion of the total cost of the activity financed by the grant. The local business community will also participate through its active role, with the GSL, on the TIPS Advisory Board, which will monitor TIPS activities, offer advice on implementation approaches and review policies, regulations and procedures affecting industry-specific technological choices and business development.

Socio-Cultural Feasibility: To succeed in competitive export markets, local industry leaders must reorient their horizons and improve their understanding of the standards and practices required by overseas buyers. In brief, they must shift from an inward to an outward mindset. They must ask questions like "How can we do this better? How can we manage available resources more efficiently? What technology changes - and management adjustments - are needed to make our products attractive in international markets? What technologies are available to help us, and where? How do we introduce them into our operations?" While these should be normal questions for business, surveys of Sri Lankan industries indicate that local private sector companies tend to seriously over-estimate

their technological competitiveness and under-estimate the need for change. Exposure to external market conditions, combined with incentives and guidance to undertake new technological practices, should help create a more innovative approach.

Impact: By encouraging the flow and use of technological information, and increasing the private sector's ability to apply technology effectively, the project will expand the economic choices available to industry. Analysis suggests that the proposed interventions hold the potential for a high return on the investment made by A.I.D. and its private sector partners, especially when social and economic multiplier effects are considered.

ENVIRONMENTAL ANALYSIS

Technology transfers for polluting industry: Sri Lanka's older, highly polluting plants - mostly public but also private - are estimated currently at about 250, and they are highly concentrated in the Western Province. About a thousand others, similarly concentrated, are moderate to low polluters. Private companies are potential sources of demand for TIPS assistance.

Cost-effective technology for potentially polluting industry is a critical environmental need in Sri Lanka. Pollution from food-processing and other agriculturally based industries, for example, will require technology that is easily obtained and maintained. Cost considerations will be critical; industry must often seek to comply with pollution standards for new pollution sources that are stiffer than those for older, dirtier plants. Innovative technology emphasizing recycling of materials can offer higher profits and lower pollution.

Environmentally-related demands for TIPS assistance: Demands can be expected to come in part from industries faced with pollution control needs under Sri Lanka's recent law and regulations requiring licenses for the discharge of air, water, or land pollution, and environmental impact assessments. The Natural Resources and Environmental Policy Project (NAREPP) of USAID/Sri Lanka is designed to help Sri Lanka establish the institutions and personnel that will establish and enforce environmental pollution control standards and practices affecting industry. However, NAREPP does not include a program for introducing available and innovative technology that will help achieve environmental objectives while maintaining or increasing productivity or profitability. The design of TIPS' technology promotion and technology grants programs will offer opportunities to address the need for environmental technology transfer within its larger program purpose.

Sources of environmental technology information: As part of its development of an industrial information network, TIPS will tap into data sources on cost-effective technologies for environmental management and pollution control to be developed by NARESA and/or other government agencies, as well as applicable data sources available in the United States. Its "proactive" approach can make known these sources of information to the private sector. In this way environmentally important technological innovations can be identified along with other technologies important to increased productivity and profits.

Minimizing environmental risks of technology transfer: TIPS' design has sought to minimize the risk that it will support the introduction of technology that will lead to adverse environmental

impacts. At the outset, its program is not directly connected to the deployment and production based on the identification and adaptation of new technology. However, several risks have been identified that have required design response.

For example, TIPS may provide support for enhancing the productivity and value of products from the gems and jewellery business in Sri Lanka. It is recognized that approximately half of the small gem pits, and many of the stream-bed mines that supply the Sri Lankan gem industry, lack required government permits. Their environmental impact from operation and reclamation failures has been locally significant. However, by adding value to the gemstones that are produced, and substantially increasing the value of mine output it is difficult to determine whether pressure for new mines will increase or decrease; technological innovations may make existing gem pits more productive, and longer-lived, but connection to mining is obscure and speculative. Assessment and management of the mining issue is, however, a subject within NAREPP.

Technology transfer programs directly affecting mining or beneficiation, or any other environmentally important activity, must be subject to the laws and regulations of Sri Lanka concerning pollution control and environmental impact assessment. Again the enforcement of these provisions is within the purview and program of NAREPP.

Some proposals for TIPS' support may be environmentally unsatisfactory. TIPS is designed to avoid support for technological transfers that are environmentally harmful. Projects must be economically, financially, and environmentally viable. TIPS' grant screening process will ensure that GSL environmental requirements are met and that grants fulfill TIPS' environmental goals. Proposals for technology to generate or use hazardous materials, heavy metals, other toxics for which Sri Lanka lacks disposal facilities or other standards or control procedures can be screened out under these criteria.

PROJECT COST ESTIMATING BASES

This annex outlines the project cost estimating bases for each component. The following tables are presented on an obligations, or commitments, basis because funds must be fully available in one year to be expended, or disbursed, in the following year. For example, when Technology Grants are committed, they will be disbursed over a one year period.

The following paragraphs describe estimates by component:

- Technology Promotion Program

Project management costs include the Colombo office project manager, estimated at \$200,000 annually, and office overhead of \$100,000 per year. The project's U.S. offices at IESC, Stamford, CT, will include a full time professional, estimated at \$50,000 per year, plus office overhead estimated at \$150,000 for the first three years and \$175,000 thereafter.

In Colombo, the promotion unit's direct operating costs are estimated at \$60,000 per year including salaries for two professionals and one clerical staff, transportation, communications, mass media and printing. Rent, utilities and other overhead is estimated at \$30,000 per year for years one to three, increased to \$35,000 for the last two years.

Follow up promotional efforts in the three sectors covered during project design will cost \$25,000 per sector, and an additional sector's promotion activity will cost \$55,000. In each of the second and third years, an additional sector survey (at \$55,000) is estimated.

The major portion of the information and search activities of the Promotion Unit will be covered by the U.S. office. However, for development of linkages to information sources in Sri Lanka and in the U.S., an amount of \$50,000 is included in the first and second year budgets. Years three to five are budgeted at \$33,333 each. Thus, total life of project information search costs are budgeted at \$200,000.

The Grants Unit will be preparing about 1.5 grants per week for approval. Three professionals and one secretary should be able to manage that level of effort. An amount of \$60,000 is budgeted per year to cover salaries, transportation and communications and incidental costs.

In addition, evaluation and monitoring staff is estimated at \$25,000 annually, the same as the controller and audit functions.

Table H-1 on the next page summarizes estimated costs of the Technology Promotion Program.

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TABLE H-1 : ESTIMATED COSTS OF TECHNOLOGY PROMOTION PROGRAM (\$000's).

	<u>Year 1</u>		<u>Year 2</u>		<u>Year 3</u>		<u>Year 4</u>		<u>Year 5</u>		<u>Total</u>	
	FX	LC	FX	LC								
Project Management												
Project Manager	200		200		200		200		200		1000	
Colombo Office		100		100		100		100		100		500
Stamford Staff	50		50		50		50		50		250	
Stamford Office	150		150		150		175		175		800	
Promotion Unit												
Direct Costs		60		60		60		60		60		300
Sector Audits	130		55		55		-		-		240	
Information	50		50		33		34		33		200	
Overhead		30		30		30		35		35		160
Grant Unit		60		60		60		60		60		300
Evaluation/Monitoring		25		25		25		25		25		125
Accounting/Audit		25		25		25		25		25		125
	----	----	----	----	----	----	----	----	----	----	-----	-----
Total :	580	300	505	300	488	300	459	305	458	305	2490	1510
	====	====	====	====	====	====	====	====	====	====	=====	=====

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- Technology Grants Program

Based on the findings of the three industry surveys, the average cost of an assistance package will be in the order of \$45,000 of which the client will be asked to pay one third to one half. Assuming the typical Grant will initially average 60% of total costs, then it will amount to \$27,000. If a decision is made to move down-scale to focus on the SMEs, the ratio of client contribution is likely to decline, and the magnitude of the assistance package for the SME will also decline. Moreover, the later years of the program will see the client contribution of the larger firms increase, as they become convinced of the cost-effectiveness of technology upgrading. That will allow the program to direct its focus downward towards smaller firms, with a likely reduction in the magnitude of the total assistance package.

Table H-2: Estimated Costs of Technology Grants (\$000):

Year	No. of Grants	Cost per Grant	Contributions by Project		Total Costs - Grants	
			Project	Grantee	Project	Grantee
1	30	\$45,000	\$27,000	\$18,000	\$ 810,000	\$ 540,000
2	60	45,000	27,000	18,000	1,620,000	1,080,000
3	75	40,000	22,000	18,000	1,650,000	1,350,000
4	75	40,000	17,000	23,000	1,275,000	1,725,000
5	63	40,000	15,000	25,000	945,000	1,575,000
Total: 303					\$6,300,000	\$6,270,000

- Regular (standard) IESC Program

The Regular IESC Program includes costs of the country director, volunteer executives, and a small amount for the ABLE program. The country director costs are estimated at \$51,000 the first year because some residual funds remain from the existing project, \$62,000 in the second year, and \$66,000, \$72,000, and \$77,000 respectively in the next three years.

Executive volunteer costs have been estimated from an "average" project which costs \$19,800 in Sri Lanka, comprised of \$12,800 in AID funds and \$7,000 local contribution. These amounts have been increased at 8 percent per year to allow for inflation. In addition, \$5,000 annually is estimated for the ABLE program.

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Table H-3: Estimated Costs of Regular IESC Program (\$000)

Year	AID Project		ABLE	Total	Private Sector	Total
	Direct.	VE Prog.				
1	\$ 51	-	-	\$ 51	-	\$ 51
2	62	\$179	\$5	246	\$ 98	344
3	66	207	5	278	113	391
4	72	224	5	301	122	423
5	77	242	5	324	132	456
Total	\$328	\$852	\$20	\$1,200	\$465	\$1,665

- Evaluation and Audit

Evaluation and audit have been estimated at a total of \$200,000, which is consistent with similar costs under current projects.

- Contingency

An additional amount of \$300,000 has been budgeted for special projects or contingency, estimated to be spent \$75,000 per year in the last four years.

Based on the foregoing activity projections, summary AID project funding requirements are (\$000):

Component	Year 1	Year 2	Year 3	Year 4	Year 5	Total
(1) Technol. Promot.	880	805	788	764	763	4,000
(2) Technol. Grants	810	1,620	1,650	1,275	945	6,300
(3) Regular IESC Prog.	51	246	278	301	324	1,200
(4) Eval. & Audit	-	50	50	50	50	200
(5) Conting.	-	75	75	75	75	300
(6) Policy* Reform	3,000	2,000	-	-	-	5,000
Total	4,741	4,796	2,841	2,465	2,157	17,000

*Subject to subsequent authorization

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ANNEX I:

Rules and Procedures Governing the Preparation and Review of Applications for Technology Grants.

1 - Eligible Applicants

Eligible applications will be privately owned manufacturing enterprises and engineering consultancy firms registered and operating in Sri Lanka (including the export free zones). Associations of private firms and associations of firms in a joint effort with research institutes are also eligible. However, applicants must provide some basis to support the assumption that they will be financially able to install the changes.

No applicant shall be discriminated against on the basis of sex, religious beliefs, age, ethnic or national origin.

2. Eligible Activities

Grant funds may pay for the following activities:

(a) Technical experts to analyze and implement:

i) cost reduction and quality improvement programs to increase production/sales volume; improve material handling, processing and tooling; or increase production efficiency and quality;

ii) choice of process or product technology to expand exports;

iii) setting up of Productivity Cells with specific work plans and with measurable achievements on projected yields and quality of production;

iv) shared R & D efforts to increase production efficiency;

v) projects for energy conservation, pollution control and industrial safety; and

vi) projects to improve packaging.

(b) Supervisor Training: Training and materials to develop and implement supervisor training in formal sessions and on the shop floor to improve their effectiveness.

(c) Design and Production Adaptation: Consultancy and small commodity expenditures to design production changes, including tooling and building prototypes for new product development.

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(d) Visits to plants in other countries to tap the strong capabilities among Sri Lanka manufacturers to adapt appropriate production practices.

(e) Workshops, seminars and firm level work by collaborators or institutions which see potential for expanding exports through technology improvement.

(f) Expenditures on:

i) acquiring design/process know-how;

ii) R & D, especially of a developmental nature to adapt products to export demand;

iii) prototype importation or local construction;

iv) product testing;

v) supply of sample & trial shipment; and

vi) test marketing

(g) Facilitating the adoption of new machinery, such as acquisition of soft technology or setting up in-company training programs.

(h) Commercializing the results of research by developing new products.

(i) Establishing in-company training programs.

(j) Exploring options for complying with environmental regulations.

The implementing agent will discuss intellectual property rights and confidentiality issues with both TIPS Grantees and other involved parties.

3 - Grant Terms and Conditions

Grants will cover only activities which can be completed within 12 months. The maximum amount of any single grant shall be \$50,000, and the minimum, \$1,500. The grant shall normally be provided on a matching (50/50) basis for large scale firms and on a 67/33 basis for SMEs. The cut off point for the SMEs will be a level of annual sales turnover under \$8 million, which is the criteria used by IESC in its current operation in Sri Lanka.

An Approval Committee, described in section 4.1.1.(b), may reduce the large scale firm's contribution to 33% if the proposal includes linkages with SMEs. This reduction will be available to large scale applicants which will improve SME access to technology (e.g., training, seminars, technical and managerial advisory services),

will upgrade technological capabilities of SMEs, or will promote greater specialization of production of SMEs (e.g., build supplier or subcontractor relationships).

TIPS will consider requests for services from firms not eligible for grant assistance if those firms are prepared to pay 100% of the cost of services.

- Use of U.S. Consultants for Promotion Program

Subject to the concurrence of the Technology Grant client, the Promotion Unit may utilize a technical consultant who is employed under the Grant for a short period while that consultant is in Sri Lanka. In that event, the Promotion Unit will cover the cost of that consultant (fee plus per diem) for that period and utilize his services as needed.

4 - Ineligible items of expenditure

The Cooperative Agreement with the implementing entity under TIPS and all subgrants will include standard AID clauses that indicate various restrictions, rules and procedures governing AID assistance. In addition, however, there are special statutory restrictions that might be an issue under TIPS and they have been addressed as indicated below.

AID Policy Determination No. 71 restricts AID assistance for palm oil, citrus and sugar products for export. No funds under TIPS will be utilized to assist firms in connection with export of palm oil, citrus or sugar products.

The so-called "Lautenberg Amendment" (currently Section 521(c) of the FY 91 Appropriations Act) prohibits AID from providing "direct" assistance relating to the manufacture for export of certain textile, apparel and leather items. When an intermediary is used, as under TIPS (i.e., IESC), to provide assistance, such assistance is considered indirect and therefore exempt from the restrictions of the Lautenberg Amendment unless (1) it is AID's intent to avoid the statute's effect by purposefully channeling assistance through an intermediary; or (2) AID has retained authority to approve or disapprove the projects funded by the intermediary and so long as (1) the intermediary exercises a sufficiently independent role in managing the aid so that it is more than a mere conduit for AID assistance and (2) the assistance is aimed at support of the private sector generally without prior knowledge of the ultimate beneficiaries.

The textile and apparel sector will not be targeted for assistance under TIPS; any assistance under TIPS to companies in this sector will be the result of unsolicited requests. Based on application of the criteria for exemption dated above, a determination has been made that the subgrants under TIPS are exempt from the Lautenberg Amendment restrictions.

The Bumpers Amendment (currently Section 521(b) of the FY 91 Appropriations Act) restricts AID assistance relating to the growth or production of any agricultural commodity for export which would compete with a similar commodity grown or produced in the U.S. The TIPS activities are not aimed at farmers; however, companies in the food processing industry may seek assistance under TIPS, although this sector is not currently a targetted industry under the Project. It is unlikely that random assistance to companies in the food processing industry would have a significant impact on U.S. exports of similar processed agricultural commodities; therefore, such assistance under TIPS would not be prohibited by the Bumpers Amendment.

To the extent the implementing entity is unclear regarding the application or interpretation of any U.S. law or AID rules and procedures to a particular request for assistance and/or regarding the eligibility of a grant applicant, such entity will be directed to refer such issues to USAID for clarification and interpretation.

5. Procedure for Application and Approval of Grants

All applications will be submitted in single copy to TIPS Project Manager, IESC, Address, Colombo and shall be date stamped upon receipt. Receipt of the application will be acknowledged within three days of delivery and will be acted upon (approve/disapprove or request clarification) within 30 days of receipt. The application should provide the following data:

- Name and address of applicant,
- details of project finance already approved or being considered,
- details of the present request for assistance from TIPS,
- cost details and quotations where applicable. In the case of consultancies the proposed Terms of Reference for the assignment should be given.
- monetary assistance sought and evidence of ability of applicant to contribute the balance amount,
- goals and benefits expected (please quantify wherever possible),
- time schedule for implementation,
- Applicant will certify that all information submitted in the application is correct.

6. Review of Applications

Review of each application will be made by the project technical staff to determine its completeness, whether it qualifies for approval under the project criteria and whether the U.S. has the capacity to offer the assistance being sought. A site visit to the firm by project staff is required for all grants.

It may not be possible to plan, in detail, all sequential actions needed to be taken by a firm to accomplish a technology transfer at

the time the firm initially applies for a grant. The approval may only cover those aspects that can be reasonably anticipated, and the firm may reapply subsequent to completion of the first stage grant. Second and subsequent requests for assistance from the same production facility will be reviewed by the Approval Committee on a case by case basis but it is the intent of the project to reduce the risk of technology installation by the firm to the level where it will be perceived to be profitable for the firm. If the Approval Committee is persuaded that the firm will proceed with the technology acquisition, notwithstanding the rejection of the grant application, it should not approve second or subsequent applications.

7 - Check List

The following questions are provided as a check list to help in the staff review, before the application is submitted to the approval committee for their consideration.

- a) Has firm received assistance in diagnosing the perceived problem?
- b) Is the plan consistent with the purpose of TIPS?
- c) Is the firm's business plan submitted with the application, of which the technology being sought is part, reasonable in terms of goals, and proposed approach?
- d) Are the estimated costs reasonable?
- e) Can the requested services be arranged by TIPS in accordance with US laws and regulations?
- f) Can requested services be arranged by TIPS in accordance with Sri Lankan laws and regulations?
- g) Will the proposed innovation comply with U.S. laws and regulations and Sri Lankan laws and regulations?
- h) What are the key Sri Lankan policy, regulatory or procedural constraints that effect the proposed plan.
- i) Is the proposed technology upgrading compatible with and feasible within the constraints of existing infrastructure (energy, transport, communications), facilities and services?
- j) Does the firm have a reasonable expectation of securing financing to implement results of intended grant use? Does it have sufficient working capital to do what it intends?

- k) Does the firm have existing channels to foreign technology sources? Has it obtained and installed new technology from other sources during the past five years?
- l) Is the technology being sought suited to the scale of production being contemplated?
- m) Will the proposed change make a significant difference for the firm's productivity, production and export growth?
- n) Will the proposed activity cause significant environmental impacts? Can the impacts be mitigated? Is TIPS support of the activity appropriate to TIPS environmental enhancement policy?

8. Payment Procedures

IESC will have the flexibility to advance a portion of the funds if reimbursement will pose a hardship for the grantee. In some instances IESC will have to make direct payments in dollars at the time services are performed (i.e., to U.S. consultants working either in the U.S. or Sri Lanka for grantee companies), rather than reimburse the grant recipient in rupees after the fact. TIPS clients will pay their required share in rupees, regardless of the allocation of grant costs between dollars and rupees.

APPROVAL LETTER FOR TECHNOLOGY GRANTS

TIPS STATIONERY

Dear -----,

It gives me great pleasure to inform you that your company's application to TIPS for a Technology Grant dated _____ has been approved. A copy of your application is attached to this approval letter and should be regarded as a permanent part of this letter.

1 - The specific expenditures authorized by this letter are as follows:

2 - The maximum ratio of reimbursement TIPS will pay, based on submission of actual receipts for expenditures incurred is _____ rupees for each 100 rupees expended by you for approved costs.

3 - The total amount to be reimbursed to you will not exceed _____ under this approval letter.

4 - This approval is given on the basis of the statements contained in your application. If any statement contained in your application is later found to be false or inaccurate, this approval shall be null and void.

5 - Attached to this letter is a guide describing the restrictions which apply to the eligibility for reimbursement of costs paid by your firm. However, those costs for approved activities which are ineligible for reimbursement under the Technology Grant may be included in the calculation of ratio of reimbursement (see paragraph 2, above) as representing your firm's matching contribution.

6 - This approval shall be valid for one year from the date of this letter. All activities must be completed and request for reimbursement must be submitted to this office no later than one year from the date of approval, at which time this approval shall be considered to have expired.

(date)

(authorized signature)

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ATTACHMENT TO IESC TECHNOLOGY GRANT APPROVAL LETTER

ILLUSTRATIVE TERMS AND CONDITIONS GOVERNING THE REIMBURSEMENT OF FUNDS EXPENDED UNDER APPROVED TECHNOLOGY GRANTS

1 - Source, origin and nationality of goods and services:

A - commodities purchased under the grant shall not exceed \$5,000 in total cost, including freight and insurance, and shall have been produced or grown in and be located at the time of purchase in Free World countries;

B - services performed under the grant shall be limited to providers based in the U.S. or Sri Lanka;

C - All goods and services shall be purchased at reasonable market rates.

2 - International travel shall be performed on U.S. carriers to the extent feasible, as provided in attachment A

3 - All charges to the approved project, including that portion to be reimbursed under the grant, shall be appropriately documented with receipts and other evidence of expenditures to sufficiently substantiate the charges. These receipts shall be provided for review and audit to IESC at the time reimbursement is requested.

4 - The ratio of grant contribution shall be as specified in the approval letter. However the grantee may choose to purchase a reduced price airfare ticket with the grantees own funds, in which case the full cost of business class international airfare may be calculated to satisfy the grantee contribution ratio irrespective of the actual cost of the ticket.

5 - If the costs incurred by the grantee and submitted for reimbursement under the grant are found to be ineligible for USAID financing, the grantee shall be allowed to submit any other incurred costs that qualify for reimbursement under the grant.

6 - Termination Procedures:

This agreement may be terminated, in whole or in part, by either party at any time upon 30 days written notice of termination. Upon receipt of and in accordance with a termination notice from IESC, the grantee shall take immediate action to cease all expenditures financed by this grant and to cancel all unliquidated obligations if possible. Further, upon receipt of notice of termination, the grantee shall not enter into any further obligations under this grant. Except as provided below, no further reimbursement shall be made after the effective date of termination. The grantee shall within 30 days of the effective date of termination repay to IESC all unexpended A.I.D. funds which are not otherwise obligated by a legally binding transaction applicable to this grant. Should the funds paid by IESC to the grantee prior

to the effective date of termination be insufficient to cover the grantee's obligations in a legally binding transaction, the grantee may submit to IESC within 90 days after the effective date of termination a written claim for such amounts. IESC shall determine the amount(s) to be paid to the grantee under such claim in accordance with the terms of this grant.

Attachment A

EXCERPT FROM AID TRAVEL REGULATIONS

(a) Omitted

(b) Omitted

(c) All air travel and shipments under this grant are required to be made on U.S. flag air carriers to the extent service by such carriers is available. A U.S. flag air carrier is defined as an air carrier which has a certificate of public convenience and necessity issued by the U.S. Civil Aeronautics Board authorizing operations between the United States and/or its territories and one or more foreign countries.

(d) Use of foreign air carrier service may be deemed necessary if a U.S. flag air carrier otherwise available cannot provide the foreign air transportation needed, or if use of such service will not accomplish the agency's mission. Travel and transportation on non-free world air carriers are not reimbursable under this grant.

(e) U.S. flag air carrier service is considered available even though:

(1) Comparable or a different kind of service can be provided at less cost by a foreign air carrier;

(2) Foreign air carrier service is preferred by or is more convenient for the agency or traveler; or

(3) Service by a foreign air carrier can be paid for in excess foreign currency, unless U.S. flag air carriers decline to accept excess or near excess foreign currencies for transportation payable only out of such monies.

(f) Except as provided in paragraph (b) of this section, U.S. flag air carrier service must be used for all Government-financed commercial foreign air travel if service provided by such carriers is available. In determining availability of a U.S. flag air carrier, the following scheduling principles should be followed unless their application results in the last or first leg of travel to or from the United States being performed by foreign air carrier:

(1) U.S. flag air carrier service available at point of origin should be used to destination or in the absence of direct or through service to the farthest interchange point on a usually traveled route;

(2) Where an origin or interchange point is not served by U.S. flag air carrier, foreign air carrier service should be used only to the nearest interchange point on a usually traveled route to connect with U.S. flag air carrier service; or

(3) Where a U.S. flag air carrier involuntarily reroutes the traveler via a foreign air carrier the foreign air carrier may be used notwithstanding the availability of alternative U.S. flag air carrier service.

(g) For travel between a gateway airport in the United States (the last U.S. airport from which the traveler's flight departs or the first U.S. airport at which the traveler's flight arrives) and a gateway airport abroad (that airport from which the traveler last embarks enroute to the U.S. or at which the traveler first debarks incident to travel from the U.S.), passenger service by U.S. flag air carrier will not be considered available:

(1) Where the gateway airport abroad is the traveler's origin or destination airport, and the use of U.S. flag air carrier service would extend the time in a travel status, including delay at origin and accelerated arrival at destination, by at least 24 hours more than travel by foreign air carrier:

(2) Where the gateway airport abroad is an interchange point, and the use of U.S. flag air carrier service would require the traveler to wait six hours or more to make connections at that point, or delayed departure from or accelerated arrival at the gateway airport in the U.S. would extend the time in a travel status by at least six hours more than travel by foreign air carrier.

(h) For travel between two points outside the U.S. the rules in paragraphs (d) through (f) of this section will be applicable, but passenger service by U.S. flag air carrier will not be considered to be reasonably available:

(1) If travel by foreign air carrier would eliminate two or more aircraft changes enroute;

(2) Where one of the two points abroad is the gateway airport (as defined in paragraph (g) of this section) enroute to or from the United States, if the use of a U.S. flag air carrier would extend the time in a travel status by at least six hours more than travel by foreign air carrier including accelerated arrival at the overseas destination or delayed departure from the overseas origin as well as delay at the gateway airport or other interchange point abroad; or

(3) Where the travel is not part of a trip to or from the United States, if the use of a U.S. flag air carrier would extend the time in a travel status by at least six hours more than travel by foreign air carrier including delay at origin, delay enroute and accelerated arrival at destination.

(i) When travel under either paragraph (g) or (h) of this section involves three hours or less between origin and destination by a foreign air carrier, U.S. flag air carrier service will not be considered available when it involves twice such travel time or more.

(j) Nothing in the above guidelines shall preclude and no penalty shall attend the use of a foreign air carrier which provides transportation under an air transport agreement between the United States and a foreign government, the terms of which are consistent with the international aviation policy goals set forth at 49 U.S.C. 1502(b) and provide reciprocal rights and benefits.

(k) Where U.S. Government funds are used to reimburse the grantee's use of other than U.S. flag air carriers for international transportation, the grantee will include a certification on vouchers involving such transportation which is essentially as follows:

"CERTIFICATION OF UNAVAILABILITY OF U.S. FLAG AIR CARRIERS. I hereby certify that the transportation service for personnel (and their personal effects) or property by certificated air carrier was unavailable for the following reason(s)." (State appropriate reason(s) as set forth above).

(1) International Travel

(1) As used herein, the term "international travel" means travel to all countries other than those within the home country of the traveler. Travel outside the United States includes travel to the U.S. Trust Territories of the Pacific Islands.

(2) The grantee will be reimbursed for travel and the reasonable cost of subsistence, post differentials and other allowances paid to employees in an international travel status in accordance with the grantee's established policies and practices which are uniformly applied to federally financed and other activities of the grantee. The standard for determining the reasonableness of reimbursement for overseas allowance is the Standardized Regulations (Government Civilians, Foreign Areas), published by the U.S. Department of State, as from time to time amended. The most current subsistence, post differentials, and other allowances may be obtained from the grant officer.

Technology Initiative for the Private Sector

Justification for Non-Competitive Assistance

AID Handbook 13 Section 2B requires competition to be used to the maximum practicable extent for the awards of grants or cooperative agreements. Section 2B3 lists approved criteria under which competition is not required. Section 2B4 requires the technical officer to certify in writing that the non-competitive award is based upon approved criteria.

Section 2B3c provides for a non-competitive assistance award where one recipient is considered to have exclusive or predominant capability, based upon experience, specialized facilities or technical competence.

This project requires that the implementing agent have the following capabilities to perform the required services:

1 - It must be highly regarded by leaders of the U.S. business community, be recognized to have access to U.S. manufacturing firms and other sources of technology and technical know how and be able to build business linkages with these firms for Sri Lankan firms that seek technology and possible coventure relationships;

2 - It must itself have a knowledge base in the technical areas where Sri Lankan industry needs technical improvements;

3 - It must have had extensive experience in providing technical assistance to private industry in developing countries, particularly Sri Lanka, and have a base onto which to build the services contemplated under this project within a short period of time.

During development of the project, USAID examined various institutions that would have the capability to implement this project. Institutions, such as U.S. universities, foundations, contractors and non-governmental organizations with capability in science, technology and industry were considered.

The International Executive Service Corps (IESC), established in 1964, provides retired U.S. volunteer executives to furnish technical assistance to private sector firms in developing countries. It is a non-profit organization that enjoys widespread recognition and support from the U.S. business community. It has experience gained through regular and special volunteer executive programs throughout the world and in Sri Lanka. It has specialized facilities for recruiting experts for overseas service among its pool of 12,000 retired U.S. business executives. This pool of former executives has been found to provide excellent access, through their long standing business relationships, to their former

employers, their competitors, traders and suppliers. It has technical competence of successfully providing a wide variety of technical assistance to the private sector for more than 25 years.

IESC has enjoyed a longstanding relationship with AID since it was established, and it has received AID financial support at both its headquarters and overseas offices. IESC transfers technology through technical assistance and has developed special programs to respond to AID needs in different countries. In Sri Lanka, IESC has operated for six years, has placed 91 volunteer executives to date and has earned a solid reputation for bringing technical change to the private sector. No other institution has a comparably widespread network of linkages with the U.S. business community and, at the same time, meets the other requirements described above.

In summary, IESC has the necessary linkage with the U.S. business community; it has a knowledge base of the required technical areas, and it has a long and successful record of service to the Sri Lanka private manufacturing sector in providing technical experts and other assistance. In reviewing the performance of other organizations operating in Sri Lanka we find no other organization that approaches the capabilities of IESC.

IESC is predominantly qualified to implement the TIPS Project. I recommend that the RCO enter into a non-competitive cooperative agreement based upon the justification above.



Talbot Penner, Chief
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