

TECHNICAL TRAINING PROGRAM FOR THE PAPER INDUSTRY

(TC-96-01-33-8)

EXECUTIVE SUMMARY

EXECUTING AGENCY: Corporación Centro de Capacitación y Desarrollo Tecnológico para la Industria Papelera [Training and Technological Development Center for the Paper Industry] (CENPAPEL)

OBJECTIVES: The overall objective of the project is to make the Colombian pulp, paper and paperboard industry more competitive by instituting a new training system. Its specific objectives are to: (i) create a mechanism to determine the human resource development needs of the paper industry and evaluate those requirements systematically; (ii) close the gap between the demand for certain skills and the supply of high-quality education and training for the jobs in the industry; (iii) promote consistently high-quality training by designing and adapting standards of expertise; (iv) develop the capacity to implement ISO standards and processes to qualify for ISO 9000 and ISO 14000 certification; and (v) promote private-sector participation in and financing of the design and implementation of training.

COST AND FINANCING:	Modality:	grant
	CENPAPEL:	US\$ 976,500
	MIF:	US\$1,900,000
	Other donors:	<u>US\$3,191,250</u>
	Total:	US\$6,067,750

SPECIAL CONTRACTUAL CONDITIONS: Prior to the first disbursement of the Bank's contribution and within three months after signature of the agreement, CENPAPEL will submit to the Bank evidence that: (i) the project executing unit has been established and has become operational (see paragraph 4.2), and (ii) the resources required to make the local contribution to the project in the first year of its execution will be available on a timely basis (paragraph 5.1).

The project executing unit will meet the following contractual conditions, to the Bank's satisfaction, within the periods indicated, calculated from the date of the Agreement: (i) within four months, the consultants will be hired to evaluate needs, design the system of standards and certification of skills

and prepare the curriculum and new training program (paragraph 3.5); (ii) within four months, consultants will be hired to design the technical and managerial information system (paragraph 3.9); (iii) within 12 months, a consulting firm will be hired to conduct the external evaluations of the program (paragraph 7.2); and (iv) within the first 60 days of each successive calendar year, evidence will be submitted to the Bank annually that the resources needed to make the local contribution to the project for that year will be available on a timely basis.

I. COUNTRY AND PROJECT ELIGIBILITY

- 1.1 This project is eligible for MIF financing because it will allow the private sector to play a continuing leadership role in the definition and implementation of training and certification under the International Organization for Standardization (ISO) for the Colombian pulp and paper industry. The Colombian government has identified that industry as one of the production sectors with greatest growth potential. The project will provide resources to a semipublic manufacturers association representing all the enterprises in the sector, each of which is charged membership dues for the development of industrial standards, the provision of specialized training both to workers and enterprises and to trainers, and for technical assistance to explain to the enterprises the principles and the steps required to secure ISO 9000 and ISO 14000 certification. ^{1/} The program includes both training for new workers and retraining and improvement of the skills of present workers, thereby promoting career development.

II. FRAME OF REFERENCE

A. General framework

- 2.1 Though it does provide incentives, economic and trade liberalization in Colombia is also generating new challenges as competition mounts with access to external markets. Both government and business are becoming increasingly aware of domestic and international environmental problems. Not only is this environmental concern being incorporated into international standards (such as ISO 14000) and trade agreements, but investors and lenders are paying growing attention to environmental impact in decision making. Under the pressure of public opinion, most of the governments in the region are stepping up their commitments to environmental quality and the preservation of natural resources.
- 2.2 Maintenance of economic growth levels in the medium and long terms will depend on the continuity of reform, liberalization of the market, the training of human capital, improved efficiency and competitiveness of production, and the ability of enterprises to adopt environmental policies in their operations.

^{1/} ISO 9000 is a process developed by the International Organization for Standardization to provide guidance in the development and application of business management and administration practices. ISO 14000 covers the internationally recognized generic classification standards for environmental management.

B. The paper industry

- 2.3 The Colombian paper industry comprises 22 enterprises (six of them large, nine medium-sized, and seven small enterprises) operating 26 plants. Cali has 13 plants with 3,338 employees, accounting for 70% of the national output. The other 13 plants are in Medellín, the Pereira region, Bogota and Barranquilla.
- 2.4 The Colombian paper industry directly employs more than 7,900 individuals. The indirect employment generated is estimated at 35,000 workers in related areas such as in transportation, collection of paper for recycling, and forest planting, management and harvesting. It is also the basis for two major industries, graphics and packaging, and consumes large volumes of forest and chemical inputs.
- 2.5 The paper and paperboard industry accounted for 4.15% of industrial production in 1996 and 4.04% in 1997. Sector production grew 8.53% in 1995 but decreased 9.95% in 1996 and 0.37% in 1997. The industry is expected to recover in 1998 and to grow in 1999, 2000 and 2001 because installed capacity increased from 878,690 tons in 1996 to 968,590 tons in 1998, and is expected to reach 1,077,490 tons in 2000. This growth will require close to 1,000 trained new employees. The proposed project can make a significant contribution to meeting that need.
- 2.6 In 1996, the last year for which figures are available, production totaled 690,000 tons of paper and paperboard, 307,000 tons of pulp, and 364,000 tons of recycled paper. However, 315,000 tons of paper and paperboard, 74,000 tons of pulp and 54,000 tons of recycled paper still had to be imported that year. Apparent consumption of each of the three grew 12.8%, 18.1% and 16.7%, respectively. These consumption growth figures also account for the increase in production and in the demand for skilled labor.
- 2.7 With foreign and direct investment and exports, including products with higher value added, expected to grow, specialization in the industry is becoming increasingly necessary. A wide-ranging feasibility study conducted in 1994 under the supervision of the Colombian Association of Pulp, Paper and Paperboard Manufacturers (ACOTEPAC) found overwhelming demand on the part of both the private sector and the government for the creation of a training center for the paper industry.
- 2.8 After three years of discussions and efforts, Corporación Centro de Capacitación y Desarrollo Tecnológico para la Industria Papelera [Training and Technological Development Center for the Paper Industry] (CENAPEL) was established in July 1995 as a semipublic nonprofit institution, with a consortium of public and private institutions. The purpose of the center is to help the paper industry become more productive and improve the quality of its products so that it will can compete on foreign markets, as well as

to improve the qualifications of the work force of the enterprises through training, and to serve as a center for the development of sustainable environmental technology for the paper industry in the subregion, by offering its services to the neighboring countries of the Andean Pact and Central America.

- 2.9 The center's principal sources of support are the national government, through the Colombian Institute for Scientific and Technological Development (COLCIENCIAS) and its National Technology Center Program, under the National Law on Science and Technology, 2/ the National Learning Service (SENA), under Law 344 of 1996; the Institute for Industrial Development (IFI), the Royalties Fund, the Organization of American States (OAS), the governments of Canada and the Province of Quebec, each of the 22 enterprises (already in association) that constitute the country's paper industry, and the 25 enterprises in the countries of the Andean Pact and Central America (which will join the association in the near future), along with provincial and local government agencies. The fact that the entire paper industry is represented in CENPAPEL attests both to the need for the center and to the unanimous support for its establishment.
- 2.10 Since beginning operations in 1995, the center has made remarkable progress and has carried out significant activities in service to the industry, all of which have elevated it to a position of prestige in the sector. In the area of **training**, under its continuing education program it has conducted 25 short courses in the country and three abroad, attended by more than 1,000 employees of the member enterprises, and has launched a successful program of courses designed for individual enterprises. In **research**, it has carried out several projects on matters of interest to the industry: pollution control, the use of by-products, process optimization, and the use of new raw materials. In the area of **technical assistance**, it has acquired and installed a modern laboratory for the quality control of pulp, paper and paperboard, which will function in strict compliance with international standards. Under the heading of **information** the center has undertaken the establishment of an information center linked to international data bases. And with regard to **certification**, the center functions as the technical secretariat for the cellulose and paper area in the Colombian Technical Standards Institute (ICONTEC).

2/ The program for scientific research and technological development is being partly financed by the Bank by loan 875/OC-CO, approved in 1995. The paper sector has been identified by the government as one of the seven leading export sectors. CENPAPEL has been identified and selected by COLCIENCIAS as a competitive and productive sector technology center with high growth potential, and is therefore eligible for financing under the loan.

- 2.11 The proposed project will focus on the areas of training, information and certification, with special emphasis on the design and implementation of a training system and on institutional development of the center so that it can support the paper industry in the subregion in its efforts to compete in a globalizing economy.

III. THE PROJECT

A. Objectives

- 3.1 The overall objective of the project is to make the Colombian pulp, paper and paperboard industry more competitive by instituting a new training system. Its specific purposes are to: (i) create a mechanism to determine the human resource development needs of the paper industry and evaluate those requirements systematically; (ii) close the gap between the demand for certain skills and the supply of high-quality education and training for the jobs in the industry; (iii) promote consistently high-quality training by designing and adapting standards of expertise; (iv) develop the capacity to implement ISO standards and processes to qualify for ISO 9000 and ISO 14000 certification; and (v) promote private-sector participation in and financing of the design and implementation of training.

B. Description

1. Component I - Design and implementation of the training system

- 3.2 Under this component, the first activity will be to conduct a quantitative and qualitative **evaluation of the industry's human resource needs**. The information will be obtained through an exhaustive study on each enterprise to determine current staffing, the prospects for occupational mobility, and future staffing needs. This information will be fed into an information system that can compare the basic skills for a variety of positions and identify those most frequently needed in different occupations. Project personnel will thus be able to select and prepare materials for training and education that will qualify the participants in the program for a wider range of positions.
- 3.3 The second activity will be **preparation of a system of standards and certification of skills** consistent with international performance levels to rate newly hired workers and provide for the continual upgrading of the abilities of those already in service. The system will help determine whether a worker has the ability to perform the tasks required for the enterprise to qualify for the respective certification. Certification will consist of the establishment of a set of standards on the basis of which an

individual's ability and degree of expertise for the performance of his or her position or occupation will be determined. It should be noted that demonstrated ability to carry out a specific job will be the only qualification for certification regardless of the individual's previous experience or educational level. Many performance standards have been framed for the paper sector in Canada, France, Spain and the United States, and they will be examined and adapted for use in the Colombian industry. Environmental standards consistent with international regulations will be included. Implementation of the standards will guarantee quality when they are effectively and consistently applied throughout the Colombian paper industry. Adoption of the standards will endow those who have received the certification with a credential that is recognized everywhere in the region and make them occupationally mobile.

- 3.4 The third activity will be **preparation of a curriculum and design of the new training program**. Curricula, course content and hands on training in laboratories, a pilot plant, and on the job will be designed, and the teaching material of the program will be selected. In addition, CENPAPEL's new training program for 1999, 2000 and 2001 will be drawn up on the basis of the study of needs.
- 3.5 Consultants will be hired to work with CENPAPEL in carrying out the above three activities (see terms of reference in Annex III). The work will be coordinated by CENPAPEL staff and the technical committee. 3/
- 3.6 The last of the activities in this component is **implementation of the training system**. The project will thus cover the complete cycle of activities, with three years for testing of the system designed. The training will be imparted at the work place and in the classroom using new methods and materials. As part of the training program, experts will participate in intensive, short seminars and workshops on the latest innovations in their fields.
- 3.7 The participants will be charged **fees** based on market prices for the four training levels, which will generate income to cover the recurrent expenses of the training program. CENPAPEL will establish a fellowship fund to defray the cost of participation by employees in the sector from other countries in the region.

2. Component II - ISO certification

- 3.8 The purpose of this component is to support CENPAPEL and its member enterprises in the assimilation, adoption and implementation of ISO

3/ The technical committee is the advisory committee of the board of directors and will have one member for each enterprise affiliated with CENPAPEL.

9000 and 14000 standards. Implementation of these universally recognized standards will guarantee the quality of their products and services (ISO 9000), and compliance with environmental regulations (ISO 14000). It is expected that 25% of the enterprises in the sector (that is, 11 of the 47 enterprises expected to join during the program) will obtain ISO certification in independent audits as a result of the project. However, implementation of ISO standards raises several difficulties that the enterprises will be unable to surmount without technical and financial assistance. The activities of this component will be based on the system of standards and the certification of skills developed under the first component. Program resources will be used to provide technical assistance to the staff of CENPAPEL and its member enterprises in order to: (i) familiarize them with the systems ISO 9000 and 14000 standards through training programs and regional seminars; (ii) disseminate the standards and the audit and certification processes for the ISO series; and (iii) conduct workshops to train staff from the member enterprises in the skills and activities needed to meet the quality standards under ISO 9000 and ISO 14000.

3. Component III - Institutional strengthening and promotion

- 3.9 The institutional strengthening of CENPAPEL will be promoted by hiring consultants for periods of two months to select, configure and implement a **technical and management information system/data base** through the following activities: (i) devise the content of the system, and identify the international data bases most useful to the paper sector in order to subscribe to them; (ii) set up an intranet with the member enterprises; (iii) establish a scale of fees for the information services to be provided; (iv) compile data on employment and its prospects on an ongoing basis; (v) monitor industry trends in human resource development; (vi) establish a network of sector employees and a mechanism for monitoring industry employees; (vii) review standards developed by key international competitors in the industry; (viii) administer the training and certification programs; (ix) train and monitor program participants; and (x) establish a register of domestic and international training experts.
- 3.10 This component includes a **promotion campaign** to publicize the industry's training system and the role of CENPAPEL as the official agency responsible for the accreditation of skills standards in the Colombian paper industry. To this end, CENPAPEL will participate in the international paper industry fairs and seminars to increase awareness among industry leaders in other countries of CENPAPEL and its programs.

IV. EXECUTION, DEGREE OF PREPARATION, AND BENEFICIARIES

A. Execution

- 4.1 The executing agency of the project will be the Corporación Centro de Capacitación y Desarrollo Tecnológico para la Industria Papelera [Training and Technological Development Center for the Paper Industry], (CENPAPEL).
- 4.2 To execute the program, CENPAPEL will establish an executing unit (EU) that will be responsible for coordination and administration. The EU will consist of five professionals: the program director, who will exercise executive direction over it and manage the EU; an assistant director for management in charge of program operations; an assistant director for training, responsible for the activities relating to certification under components I and II; the assistant director for ISO certification, for development and implementation of the ISO certification system; and a systems engineer, for the technical and management information system/data base. The EU will have the additional personnel necessary, including an accountant and several secretaries. Establishment and startup of the EU will be a condition precedent to the first disbursement.
- 4.3 CENPAPEL is in process of erecting the center in Pereira in a building it owns that will house the classrooms, offices and laboratories for training, technical assistance for ISO certification, and scientific research. The Pereira municipal government has donated the land for the building, and CENPAPEL will use funds from its member enterprises to finance the construction of the building from mid-1998 until its completion in mid-1999.
- 4.4 The project will require specialized equipment for training, certification and the technical and managerial information system. Some of this equipment will be used for a variety of purposes apart from its principal use, such as research and technical assistance.
- 4.5 The project execution period will be 36 months, and the term for disbursements, 42 months.

B. Degree of preparation

- 4.6 CENPAPEL's extensive domestic and international membership, combined with its experience providing demand-driven training attests to its capacity to execute a program of this nature and magnitude. Further proof of CENPAPEL's capacity to carry out the proposed project is its success over the last four years in securing counterpart resources from its members and the public sector, as well as from multilateral and bilateral sources, to finance the costs of procuring equipment, constructing the training center

building, procuring the training courses and technical assistance, and conducting research, among other activities.

C. Beneficiaries

- 4.7 The direct beneficiary of the project will be CENPAPEL, which will be given the means to develop and implement a training system for the paper industry. The target population will be the existing work force, employees to be hired, and the enterprises in the sector themselves, who will be given access to specific training that meets the industry's actual needs.

V. COST AND FINANCING

- 5.1 The total cost of the program is estimated at US\$6,067,750, of which US\$1,900,000 would be financed with MIF resources, US\$976,500 by CENPAPEL, and a total of US\$3,191,250 by other entities (US\$1,912,250 from the member enterprises, US\$603,500 from SENA, US\$418,500 from COLCIENCIAS, and US\$257,000 from the OAS) as the local counterpart contribution. The project costs and financing are summarized in the following table (in US\$):

(US\$ equivalent)

	MIF	CENPAPEL	OTHER	TOTAL
I. Component I — Design and implementation of a training system	<u>806,000</u>	<u>549,500</u>	<u>1,313,250</u>	<u>2,668,750</u>
a. Execution of activities (i), (ii), and (iii)				
(i) Evaluation of human resources needs	452,000	41,000	7,000	500,000
(ii) Design of system of standards and certification of aptitudes, including licensing				
(iii) Preparation of curriculum and new training program				
b. Training				
1. Experts	343,500	267,000	558,000	1,168,500
2. Supplies and logistics	10,500	193,000	99,000	302,500
3. Study-grants	-	48,500	649,250	697,750
II. Component II — ISO certification	<u>150,000</u>	<u>13,000</u>	<u>56,000</u>	<u>219,000</u>
a. Training for CENPAPEL (experts and training)	50,000	13,000	-	63,000
b. Training for companies (experts and training)	50,000	-	26,000	76,000
c. Experts to bring ISO certification system to operation	50,000	-	30,000	80,000
III. Component III — Institutional strengthening and promotion	<u>155,000</u>	-	<u>305,000</u>	<u>460,000</u>
a. Design of management technical information system	100,000	-	-	100,000
b. Supplies for management, technical, and information system	15,000	-	305,000	320,000
c. Promotion campaign	40,000	-	-	40,000
IV. Executing agency	<u>189,000</u>	<u>414,000</u>	<u>27,000</u>	<u>630,000</u>
a. Director, one Assistant Director, and systems engineer	189,000	162,000	27,000	378,000
b. Two Assistant Directors		252,000		252,000
V. Equipment	350,000		230,000	580,000
VI. Evaluation	100,000			100,000
VII. Building construction			1,260,000	1,260,000
VIII. Contingencies	150,000			150,000
TOTAL	1,900,000	976,500	3,191,250	6,067,750

- 5.2 The fees to be charged for training and technical assistance are based on market prices. Sufficient resources are expected to be generated by these services to cover the operating costs by program completion, thereby ensuring program sustainability. However, because these resources are unpredictable, they have not been included in the above table.
- 5.3 The MIF resources will be used to finance the fees of the three consultants who will serve as director, assistant director for management, and systems engineer of the executing unit for the first 18 months. For the remaining life of the program these costs would be financed from the local counterpart contribution.

VI. FEASIBILITY AND RISKS

A. Feasibility

- 6.1 The benefits of the project are as follows: (i) it will allow the private sector to play a leadership role on an ongoing basis in ensuring that training reflects specific industry needs; (ii) the market for training providers for the industry will grow; (iii) the recruitment and selection of skilled workers in the sector will become more efficient; (iv) the industry will attract more resources; and (v) the ties of cooperation between the paper industry in Colombia and other Latin American countries will improve and new ones will be forged.

B. Risks

- 6.2 One risk concerns CENPAPEL's capacity to pay for management of training and technical assistance once the subsidizing resources have been exhausted. This risk is minimized by the fact that CENPAPEL provides training to its members, and the MIF funding will enable it to serve a broader clientele, thus becoming the highest authority in the sector in matters of ISO-related training and technical assistance. Another risk stems from CENPAPEL's limited experience in the development and supervision of training systems. This risk is minimized by the cofinancing, the training for the staff of technical instructors, and the project executing unit, and also by the marketing and promotion activities, which will ensure constant demand for the training and technical assistance to be provided under the project.
- 6.3 The description and classification of positions is a difficult problem that has yet to be resolved in most of the countries. The factors involved include geography and labor issues and hamper proper description and classification of positions in the paper industry, which would help achieve the standardization of the sector needed. Nevertheless, the prospects for accomplishing this

in Colombia are very good for the following reasons: (i) the Colombian paper industry is relatively young; (ii) the number of enterprises in the sector (22) is not excessive and (iii) 100% of the enterprises are members of CENPAPEL, which would obviously facilitate the task of describing and classifying the employment positions in the paper industry.

VII. PERFORMANCE INDICATORS AND PROGRAM EVALUATION

A. Indicators

- 7.1 The performance indicators for the program are (i) the training of 2,025 workers in the sector; (ii) a corps of trainers with the knowledge and materials needed to impart the training that the industry requires; (iii) dissemination of the lessons learned and the promotion of concepts of human resource development in the private sector; (iv) promotion of demand-driven training through the establishment of mechanisms to facilitate collaboration among private-sector enterprises; (v) development of quality standards to ensure that the standards are well understood in the center and that the tools designed to measure quality (especially ISO methods) are used effectively and consistently; (vi) establishment and maintenance of a register of local and international training experts; and (vii) establishment of a library of journals and materials relevant specifically to the industry and the work of the center.

B. Evaluation

- 7.2 There will be two external evaluations of the program: the first will be a mid-term evaluation, to be conducted in month 18, and the second three months after project completion. A consulting firm will be hired by CENPAPEL 12 months after the signature of the agreement. Upon initiating the evaluation, the firm will agree with the EU on (i) the methodology to be used in the subsequent evaluation, (ii) the evaluation system, and (iii) the indicators provided by the information system during program execution.
- 7.3 The mid-term evaluation will review the efficiency of institutional mechanisms of the project and their impact on implementation, and will include recommendations for adjustments, as appropriate. The final evaluation will consider: (i) the general and specific objectives of the project, (ii) whether effective use was made of the budgeted resources in attaining the objectives of the project, (iii) the impact of the program on the individual participants and the manufacturers, (iv) sector competitiveness, (v) whether remunerations in the industry have risen, (vi) whether there has been any improvement in the skills of the workers in the sector,

(vii) the numbers of unemployed workers who have found jobs, and
(viii) whether there has been any improvement in the quality of
services and customer satisfaction. The indicators to be used will
take into account the logical framework presented in Annex I.

LOGICAL FRAMEWORK

OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
GENERAL OBJECTIVES The general objective of the project is to make the pulp, paper and paperboard industry of Colombia more competitive by developing a new training system.	Higher salaries in the sector	Findings of diagnostic study on labor market supplied by governments, multilateral agencies and other sources. Increases in sales, exports or productivity.	Steady growth of the sector as a whole and favorable economic conditions for Colombian industry.
The project's specific objectives are to: (i) to set up a mechanism to determine the human resource development needs of the paper industry and to evaluate those needs systematically;	Studies conducted on CENPAPEL's 22 member firms and system of standards and skills certification for 25 positions in the industry devised.	Establishment of a committee of CENPAPEL member firm representatives to perform and review the evaluation of human resource needs.	CENPAPEL's members share information on their productivity and resource requirements.
(ii) close the gap between the demand for certain skills and the supply of high-quality education and training for the jobs in the industry;	2,025 employees and or students will receive training under programs of long and short duration.	Output of CENPAPEL's data base. Monitoring of trainees by CENPAPEL	CENPAPEL's members and affiliates will accept new training methods.
(iii) promote consistent quality of the training by designing and/or adapting standards of expertise;	Development of standards of classification for at least 25 positions; Adoption of the classification standards by CENPAPEL's 22 member enterprises.	Analysis of CENPAPEL's members and audits. Preparation by the project execution unit of a report on the classification standards.	Sector enterprises will accept the classification standards and participate voluntarily in implementation of the system.
(iv) develop the industry's capacity to implement ISO standards and obtain ISO 9000 and 14000 certification;	The 22 member enterprises participate in ISO workshops and seminars organized by CENPAPEL.	25% of the member enterprises (11 firms) obtain ISO certification through independent audits.	CENPAPEL will be able to convey to sector the importance and urgency of adopting ISO 9000 and 14000 standards.
(v) promote private-sector participation in and financing of the design and implementation of the training.	Confirmation of availability of the local counterpart resources.	Reports on expenditures for the project.	SENA and other public-sector entities will accept new methodologies and leadership by industry in defining and managing training systems specially designed for the sector.

PROPOSED RESOLUTION

COLOMBIA. NON-REIMBURSABLE TECHNICAL COOPERATION FOR
THE TECHNICAL TRAINING PROGRAM FOR THE PAPER INDUSTRY

The Donors Committee of the Multilateral Investment Fund

RESOLVES:

1. That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Multilateral Investment Fund, to enter into such agreements as may be necessary and to adopt such other measures as may be pertinent for the execution of the Technical Training Program for the Paper Industry, described in the Proposal Memorandum contained in Document MIF/AT-_____ with respect to a technical cooperation with the Corporación Centro de Capacitación y Desarrollo Tecnológico para la Industria Papelera of the República de Colombia.
2. That up to the sum of US\$1,900,000 is authorized for the purposes of this resolution, chargeable to the Human Resources Facility of the Multilateral Investment Fund.
3. That the above mentioned sum is to be provided on a non-reimbursable basis.