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**USAID/Mauritius**

**WORKSHOP ON  
PRODUCTIVITY AND QUALITY IMPROVEMENT**

**JANUARY 1992**

**FINAL REPORT**

***Submitted to:***

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AID/REDSO**

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## ACKNOWLEDGMENTS

We wish to thank a number of people whose work above and beyond the call of duty made essential contributions to the success of this workshop. First, we wish to thank Marian Cosmides and the entire MSI team for inviting us to submit a proposal and perform this work, and whose calm, efficient management of affairs got us on the right airplane with all the course materials needed for success. In Port Louis, the staff of the Mauritian Employers' Federation responded with amazing speed, accuracy and good humor to support a variety of last-minute additions to the course and to make our stay in Mauritius very pleasant and maximally productive, far beyond what we could have reasonably expected and imagined.

## **EXECUTIVE SUMMARY**

This is the final report for a Workshop on Productivity and Quality Improvement, sponsored by the USAID -- REDSO/ESA, organized by the Mauritian Employers' Federation (MEF) and presented by Management Systems International from January 13 to 24. During this time, two workshops were given. The first was an eight day class for 23 managers of Mauritian private enterprises. The second workshop was a half day session for 14 trade union representatives.

The objective of the workshop was to provide training to senior managers from private and public sector firms and to trade union representatives in the elements of improving management, organization and motivation to increase productivity. The evaluations of both courses indicated that the participants found them successful, both in terms of learning and stimulating interest in further material on quality management and productivity.

In addition, the team trained five potential new trainers from the Mauritian Standards Bureau, the Export Processing Zone Association, businesses and local consulting firms.

The team's recommendations for next steps include the following:

- Setting up a scholarship for overseas study
- Regional and international conferences
- Conferences and workshops in Mauritius
- Book sales at workshops

## **I. WORK PERFORMED AND MEASURES OF SUCCESS**

This is the final report for a Workshop on Productivity and Quality Improvement, sponsored by the USAID -- REDSO/ESA, organized by the Mauritian Employers' Federation (MEF) and presented by Management Systems International from 13 to 24 January. During this time, two workshops were given. The first was an eight day class for 23 managers of Mauritian private enterprises. The second workshop was a half day session for 14 trade union representatives.

### **A. Eight-Day Workshop on Productivity and Quality Improvement**

#### **1. Curriculum Development**

The curriculum was developed jointly by Spencer Graves and Barbara Myers. The course outline was designed as an overview of strategies and guidelines to help a company address the issues and implement total quality concepts. The course outline was tailored to meet the Scope of Work (see Appendix D) to insure that all requested items were appropriately addressed.

We also relied on the survey and analysis of an MSI consultant which had been completed as a follow-up to a productivity improvement workshop presented in 1989. We identified common themes in the responses to that questionnaire, identifying various management limitations, training needs and changing technology. The analysis contained "do's and don'ts" list concerning what approaches worked and didn't work. We also read reports of resistance to quality and productivity improvement in Mauritius and stories of quality implementation that had been tried.

Considerable background material was obtained from MSI and the MEF, which was a great resource for helping us know our customer. Developing a product for a group of managers in an environment that we only knew from reading was a difficult undertaking. After arriving in Mauritius and meeting the workshop participants, only a few modifications in the planned curriculum were needed.

Each day's "Course Process Evaluation" gave the participants an opportunity to express their opinions and provided guidance on modifications to make to the next day's curriculum. The participants felt that positive learning resulted because of the multi-media approach used. On the second day, some of the peers brought in videos, articles and books to contribute to the course offerings. Because they were used in Mauritius and had a proven track record, these were effective learning tools. The next to last day included a brainstorming exercise which summarized learning. This resulted in an eleven-page list of concepts that were copied and distributed to the group as their own summary of what they had learned from the workshop.

## 2. Measures of Success

The objective of this workshop, stated in the Scope of Work, was to "provide training to senior managers from private and public sector firms and to trade union representatives in the elements of improving management, organization and motivation to increase productivity." Given this purpose, one measure of success is the level of the people who attended.

- The 8-day class of 23 included a few senior managers, but most participants were below executive rank<sup>1</sup>. During course evaluation, we were told that a two- or three-day workshop would likely attract more senior managers. This was built into the proposed next steps (section III.C below). Among the 23 registrants, there was nearly 100% attendance; several attendees missed a few hours, but no one missed more than about a day, cumulative. Table 1 shows the positions of the participants.
- A half-day session was organized for trade union representatives. Roughly half the organizations invited sent representatives. We were told that the leaders of the unrepresented union were mostly government ministers and had greater demands on their time due to their official duties.

Table 1. Positions of Participants

Quality Control Manager  
Medical Representative  
Assistant Agriculture Manager and Agronomist  
Agricultural Manager (Junior Management position  
Dyer (2)  
Managers (4)  
Human Relations Director  
Personnel Manager & Public Relations Officer  
Managing Director  
Financial Controller  
Standard Officer  
Technical Manager (Quality Prod. Maintenance)  
Production Planner  
Production Engineering Department  
Engineers (3)

The primary measure of success for a workshop of this nature is participants' ability to utilize the inspiration, concepts and techniques obtained. The time period after the workshop was too short to get any results yet from immediate applications. Some analysis of this nature might be done now of the earlier USAID sponsored workshop on productivity and quality improvement, also organized by the Mauritius Employers' Federation (MEF) in 1989. Without looking for it, in fact, we saw such evidence: One of the organizations visited displayed Just-In-Time manufacturing and other applications developed by a manager who had attended this earlier

workshop. It was no surprise to us that the lead implementer in this instance had a manager who had attended a similar three-month production management course in Japan under the well-known Japanese Association for Overseas Technical Scholarship (AOTS). The techniques and inspiration learned by the implementing manager coupled with the support and inspiration of his boss made these applications possible. On the other hand, these two managers were unhappy that they had not been able to progress further and wanted more training and consulting to help them involve more of their organization in taking the next steps.

A final measure of success of the current workshop are the invitations for future work. Judging by invitations, the workshop was an overwhelming success: We have already received several requests for specific proposals for follow-on work accompanied by tentative commitments.

The Scope of Work also asked that we "Train 1-2 local consultants/trainers in presenting the Productivity and Quality Improvement Workshop. Local resources include personnel managers, University professors of production management, staff of the Mauritian Standards Bureau (MSB)." The course included the following people who might be included in these categories:

*Consultants:*

Ms. Francoise Murat White, Manager, Human Resource Development, CCL Management Consultants

Ms. Daniel Wong, Director of the Mauritian Export Processing Zone Association (MEPZA).

*Personnel Managers:*

Jacques Eneuf, Director of Personnel for Management and Development Group, Ltd.

Jay Hurry, Director of Personnel for Constance & La Gaieté

*University Professors:*

none; one called the MEF the day before we left, asked for a private interview and was told that we had no more time.

*Staff of the MSB:*

Vish Aukhojee, Standards Officer

## **b. Evaluations by Participants**

Ms. Aisha Oozeer of MEF administered an evaluation. These results were not available at the time of writing this report. We administered our own evaluation form, on which participants' names were not required. A summary of the most important questions and answers follows.

As can be seen from the results of the evaluation shown in Table 2., the majority of participants felt that the workshop was good to excellent in most respects. Particularly high

ratings were given to the content of the sessions, the handouts and videos. The majority of respondents also felt that they gained important personal benefits from the workshop. Only in the areas of speaker presentation, format/time and facilities were the responses more in the good to average range. No aspect of the workshop gained poor ratings in any significant number.

	Excellent	Good	Average	Fair	Poor
1. Personal benefits experienced	36%	29%	21%	14%	
2. Speakers -- content	27	65	4		4
3. Speakers -- presentation	14	43	33	10	
4. Program management	14	47	24	10	5
5. Location and facilities	38	43	14	5	
6. Format and time	5	38	47	10	
7. Handout materials	47	43	5	5	
8. Simulation and exercises	12	44	44		
9. Videos	47	47	6		

Table 3 shows that significant interest exists for future workshops in all areas of quality management and productivity improvement. Only robotics and SPC generated any significant disinterest among the topics. Total Quality Management, PDCA and Total Employee Involvement garnered the highest interest for workshops to be given immediately.

Table 3. Future Workshops (in percent)

	Desired Now	Desired in the Future	No Interest
Quality (TQM, TQC, etc.)	82%	9%	9%
PDCA	77	9	14
EDL	9	44	47
SPC	20	30	50
JIT	47	29	24
Total Employee Involvement	77	9	24
ISO 9000	43	24	33
Quality Audits	38	38	24
Production Planning	58	9	33
Robotics	14	43	43
Compensation Systems	65	5	30
Train the Trainer	43	33	24
Benchmarking	38	38	24
7 Management and Planning Tools	64	18	18
Design of Experiments*	83	17	

\*6 responses written in \_\_\_\_\_

In response to the question: "What is the greatest barrier that prevents you from developing a quality process in your everyday work", the group cited a number of answers. The most important were lack of communication, lack of top management commitment and understanding, resistance to change, lack of training and time to learn about and implement quality improvement concepts. Table 4 gives a bit more detail to understanding the attitudes of the companies toward quality management.

Table 4. Attitudes Toward Quality Management Issues

	Yes	No	Maybe
Top management committed to quality improvement	71	24	5
Employees have commitment to quality work	46	46	8
Quality is compromised for short-term profit	67	24	9

## **B. Labor Leaders' Workshop**

The Labor Leader's workshop on Quality and Productivity was held on Friday, Jan. 24, 1992, at Rainbow House. Approximately 28 labor leaders were invited, but only one-third were expected to attend. The following fourteen leaders attended:

Mr. Anerood Bhondoy, Mauritius Labour Federation  
Mr. R. Kandhai, Mauritius Labour Federation  
Mr. C. Arianaick, Mauritius Labour Federation  
Mr. Ramduth Jagoo, Federation of Civil Service Unions  
Mr. Francis Supparayen, Federation of Civil Service Unions  
Mr. Vinod Ramharai, Federation of Civil Service Unions  
Mr. Michel Khedoo, Federation of Civil Service Unions  
Mr. Surya Prakash Torut, Mauritian Labour Congress  
Mr. Lollbeeharry Jugdish, Mauritian Labour Congress  
Mr. K. Bhugwan, Mauritian Labour Congress  
Mr. G. Bhujan, Mauritian Labour Congress  
Mr. Sooryeduth Napaul, Fed. des Syndicats de Corps Constituées  
Mr. D. Bhuruth, Fed. des Syndicats de Corps Constituées  
Mr. Lotun, Fed. des Syndicats de Corps Constituées

The session started much like our previous workshop, with the session guidelines and the purpose clearly stated. The leaders introduced themselves. The group then prepared an affinity diagram, as did the first group, in response to the following question: "What is the most important issue or problem facing your organization today?" The major categories of responses were as follows:

- Membership
- Communication
- Training and education
- Finance
- Government
- Lack of cooperation with management.

These were each addressed later in a discussion of how quality and productivity improvement concepts and techniques can contribute to improvement for each of these issues.

Other areas covered were compensation systems, three laws of quality / three laws of economic development, customer identification and customer satisfaction, ISO 9000 standards and training programs. The level of participation was high as the leaders felt that the environment was conducive to learning and that the lectures were designed and delivered at their level. They did feel, however, that the time allotted was too short. These statements are a summary of the process evaluation at the end of the session, which appears in Appendix C.

## II. ECONOMIC DEVELOPMENT AND QUALITY MANAGEMENT

The lead author of this report has compared the literature on economic development with that on managing for quality and productivity improvement. One important conclusion of this research is that the quality of government is a primary determinant of economic growth.<sup>2</sup> It has been suggested that the third world is underdeveloped because their governments are underdeveloped, and that

The industrial revolution began in Great Britain because the British were the first to successfully restrict the power of the King to arbitrarily confiscate the property of successful innovators.<sup>3</sup>

One generalization of this might be the following basic principle:

Graft, unchecked, expands to consume the available money.

The developed world, and the US in particular, provides ample examples that hint at the losses to society due to corruption of various kinds.<sup>4</sup> Developing countries tend to have more of these problems; the prevalence of such problems may be the primary factor in their low rates of economic growth. This should not be construed in any way as a criticism of Developing countries: from at least some perspectives, it seems more appropriate to compare these nations with England 30 years after the Magna Carta of 1215, than with the developed world of today. People in poorer countries should be proud of the progress they have made in so few years since independence -- while they maintain an appropriate impatience in pushing for further progress.

It is instructive to take Japan as an example and try to explain its relatively meteoric rise from the ashes of World War II to its current position of dominance of international markets. Different experts give different reasons for this rise. Economists describe three reforms dictated by Gen. Douglas MacArthur, commander of the army of occupation after the war:

1. The break-up of the Zaibatsu, the large Japanese conglomerates.
2. The legalization of the labor unions.
3. Draconian land reform that gave the peasant farmer an honest stake in his own production.<sup>5</sup>

Japanese quality professionals tell a completely different story: they mention Gen. MacArthur, but go on to give great credit to Drs. W. E. Deming and J. Juran for introducing to top Japanese managers the fundamentals of managing for quality and productivity improvement. The Economic and Quality Management perspectives on development come together in the following maxim:

Improvements occur most often where they are expected, supported and rewarded.<sup>6</sup>

Quality Management seems to work by improving the rate at which people learn from experience. People don't like outsiders telling them how to run their lives. On the other hand, "people don't resist change, they resist being changed."<sup>7</sup> Quality Management seems to work by getting people at all levels of organizations and society involved in keeping written records and using those records to help them improve their understanding and management of their environment and their lives. A secondary but still essential element is to define the rules so all parties can benefit -- "win-win", not "win-lose".<sup>8</sup> In this way, Quality Management principles seem to provide a description of the microeconomics of development.

### **III. PROPOSED NEXT STEPS**

To the extent that quality management principles are of value, it would seem important to do whatever is feasible to introduce them to leaders all over the world and to help them in their attempts to apply these principals. Activities such as the following should contribute to this end:

#### **A. Scholarship Fund**

One element in such an effort would be a scholarship fund to bring leaders to the US, Japan, and other places for training and for on-site visits to organizations that are applying Quality Management ideas.

#### **B. Regional and International Conferences and Workshops**

Another element would be conferences and workshops on various aspects of this subject, such as the one just completed in Mauritius.

- Ultimately, the future of the Developing World may depend on efforts made at the behest of heads of state and other leaders to quantify the results, positive and negative, of government programs, and use the data to improve the same government programs. This could be built through a series of workshops on economic development and quality management leading to the development of people with these kinds of skills throughout the developing world and an infrastructure to support them. In the US, the Federal Quality Institute<sup>9</sup> and the Public Sector Quality Improvement Network<sup>10</sup> might provide valuable assistance in organizing such a conference. The International Center for Economic Growth<sup>11</sup> also supports a network of research institutes around the world that try to quantify problems contributing to slow growth. These and similar agencies could be invited to assist in planning and managing conferences of this nature.
- Part of this effort could be conferences specifically designed for leaders of

government, including heads of state. Bill Clinton, Governor of Arkansas, has made applications of this nature and might like to make presentations for such a conference. Former Mayor Joe Sensenbrenner of Madison, WI, might also make a credible presentation. For this type of conference, it could be extremely valuable to get the sponsorship of organizations such as the United Nations or the Organization of African Unity.

### **C. Conferences and Workshops in Mauritius**

One of the participants in this most recent MEF workshop suggested that upper managers regularly attend two and three-day workshops, but that an eight-day workshop is beyond their perceived ability to take time away from work. It is therefore suggested that this past workshop be divided into two: one executive overview of three days focusing especially on the management philosophy, and another of five days (one week) or six (two weeks, three training days each) focusing more on the tools. With, for example, seven to nine weeks in Mauritius, a single team, with the right qualifications, might be able to do the following:

- A three-day executive introduction to Quality Management for leaders in the private sector.
- A three-day executive introduction to Quality Management for leaders in the public sector.
- A three-day executive introduction to Quality Management for leaders in trade unions.
- A one or two- day intensive workshop on strategic management and the Japanese strategic management system, Hoshin Kanri (Policy Deployment or Management by Planning), in particular. This would have the three-day executive introduction as a prerequisite.
- A five or six-day workshop on the basic tools, with the three-day introduction as a prerequisite.
- A two-day "Train the Trainer" session for people who will be managing and delivering quality improvement training for other organizations.
- Workshops in ISO 9000 Series Standards for Quality professionals who may be leading the effort to obtain ISO 9000 certification for their organizations.
- A four-day workshop on the design and analysis of industrial experiments, including Taguchi methods, Evolutionary Operation (EVOP), and Response Surface Methodology. Prerequisites: The executive introduction, the workshop on basic tools, and engineering training, or equivalent.

#### **D. Book Sales**

People in places like Mauritius often find it difficult to get books because of physical distance and lack of effective transportation infrastructure. Many attendees at workshops would consider it a service to have the option of buying copies of selected books, even paying an appropriate premium over retail. It is suggested that some mechanism be provided for carrying and offering for sale a few copies of the most important books on the subject of the workshop - or that some system be provided whereby orders could be taken at the beginning of a workshop, faxed back to the US, and shipped by air to arrive before or shortly after the end of the workshop.

#### **IV. CHRONOLOGY OF PEOPLE MET AND TOPICS DISCUSSED**

*Thursday, January 9, 1992*

We were invited to Chanticleer to see the operations side of chicken processing where we met Jacques Enouf, who was to be in the workshop, and Cyril Julienne, the processing manager. Donning white rubber boots and smocks, we observed the entire line procedures. In addition, the Quality Control procedures and the Control Charts were shared with us.

We next visited the Ferney Spinning Company, which specializes in the spinning and dyeing of wool. Here we met France Augustin, who was to be in the workshop also. We observed their modern Q.C. Laboratory with quite impressive technical equipment for a novice in spinning manufacturing. Readouts of test results were visible on at least six terminals and the H.P. printers were giving current data on many facets of the processed yarns.

*Friday, January 10, 1992*

We visited the office of the U.S. Ambassador, Penne Korth, and her deputy, David Dunn. We discussed the goals of the workshop, the potential important outcomes of the training and the impact of ISO 9000 on Mauritius. We also met Shariff Jathoonia, an FSN who works in the Ambassador's office.

*Thursday, January 16, 1992*

We met with labor leaders from the Federation of Civil Service Unions. These leaders were: Frances Supparayen, Ramduth Jagoo and Ghurdeo Somoo at their offices in Port Luis. They wanted to insure that quality in the workplace would be addressed, and insight given on Quality Management of their organizations. We learned more about our customers (the leaders) and felt that trust had been established during this hour.

We then traveled to the Mauritius Standards Bureau at Moka and located on the campus of the University. There we met with Vish Aukhojee, who was attending the workshop and

toured the many areas of testing and the extensive library. Before leaving, we met the Acting Director of the Bureau, A. Hurdoyal, who attended the closing ceremony as the guest of one of the Ministers. The bureau would be impacted quite heavily if they were to be a certification arm for the ISO 9000 Series Standards. The activity would probably be increased as well as the use of the M.S.B. facilities.

After this visit, individual consultants visited different companies in the afternoon. Myers was taken by the operations manager Jacques Berry (another workshop participant) to a northern town, where she visited a shell manufacturing operation. This company is celebrating its tenth anniversary in 1992. The president expressed a desire to make the changes necessary to implement quality processes as part of this celebration and asked for specific recommendations. After a tour of the facilities, the consultant made some quality improvement suggestions, in the area of materials handling, storage and customer service feedback linked with a simple marketing tool, the reorder card. Initiating this last practice on the high ticket items first would give a measurement tool for its success along with the dollar cost, to show the cost of quality as well as the dollars generated from repeat sales. The control of shell use is of concern as they have been searching for a substitute for tortoise, since it has been banned. Some shells are difficult to purchase, requiring constant research and development. The entire company is Mauritian, as it is run by a wife and husband team and the operations manager.

The next company Myers visited that day was Currimjee Jeewanjee & Co. One of the workshop attendees, Narenraprasad Japal, informed her that in a few minutes, she would be speaking to a few of the employees at the Port Luis site, on Quality Improvement. Although he had originally planned for five or six, the number expanded to fifteen employees. They asked many questions about employee involvement and team empowerment. There was much interactive discussion and the session lasted twenty-five minutes past their usual quitting time.

Graves visited Ms. Danielle Wong, President, Mauritian Export Processing Zone Association (MEPZA) and we discussed MEPZA's strategic management process and what it does to learn more about how it adds value to its "customers" (members).

Graves then visited Gill La Hausse of Precigraph, Ltd., and her management team, France de Labauve d'Arifat, the Administrative Director, and two of his sons, Vincent and Francois. Precigraph is a family run printing company. Their strategic management process, growth plans and how they go about learning from experience was discussed.

### ***Wednesday, January 22, 1992***

We went to the offices of "PLUS FIVE" for an interview with the owner and editor of ECO Magazine, Georges Chung Tick Kan, and the editor of the weekly newspapers, Darlmah Naeck. We were taped as we interviewed and the article was to be in the newspaper the week following our departure. This was a follow-up to an earlier interview by another reporter from the ECO Magazine, that had been scheduled during the last 30 minutes of a workshop session.

All steps were taken to insure that the messages were positive and meaningful to the readers of the local publications.

During this entire process, we had the support of Azad Jeetun, who arranged the interviews. The purpose of the interview was to heighten the readers' awareness of the Quality & Productivity Workshop in which many leaders were participating. There were to be pictures and contributions by attendees, as well as by us, as the presenters.

#### ***Thursday January 23, 1992***

Following the closing ceremony, Myers visited the companies of Mr. Olsen. He sent participants to the workshop, Marc Dumolard, of Atelec and Phillippe Mourand, of E.R.E. She met with these three to discuss further of the continuous improvement concepts that had been introduced in the workshop and their company's further preparation for ISO 9000 Certification. While touring the facilities and viewing their board production process, we discussed the plans to use some of the Just In Time Philosophies that had been discussed in the workshop.

#### ***Thursday and Friday, January 23/24, 1992***

Graves met with Eddy Yeung, Director of Production and Operations for Ferney Spinning Mills, Ltd., and a member of the top management committee of the Floreal Group that produces Floreal knitwear and t-shirts. He also met again with Ms. Francoise Ip, Financial Controller, and France Augustin, Carding Engineer, who had been in the class, as well as Jean-Claude Dantier, Production/ Technical Manager for Ferney Spinning, whom we had met on 9 Jan. Eddy had attended a three-month Production Management class in Japan taught by the Association for Overseas Technical Scholarship (AOTS), a leading Japanese training and publishing organization for quality and productivity improvement. We discussed Ferney's implementation of Just-In-Time (JIT) manufacturing, time based competitiveness, and how the Floreal Group uses strategic management principles to select and manage priorities for improvement.

#### ***Saturday, 25 January 1992***

Graves met with Jay Hurry, Personnel Manager for Constance la Gaieté, a large sugar plantation, and his management team. We discussed the Deming Chain Reaction and how it applied to Mauritius as well as the "Third World Commodity Trap" which says that over time, the knowledge of how to do anything useful becomes more widely available, so production increases and the market price goes down. Nations, organizations, and even individuals must continually learn and innovate to avoid being forced to accept lower standards of living. Learning must focus on how we add value to our customers' lives so we can develop innovative processes for increasing that value. As an example, the Mauritian sugar industry has six specialty sugars that are quite profitable for them. Their profit on commodity sugar is much less and bolstered by preferential pricing in places like Europe. One example of a special sugar is large crystal sugar, which is preferred in Great Britain. Other Europeans prefer the small crystal,

commodity sugar. The Mauritian sugar industry produces large crystals for the UK, and charges extra for it. We discussed their process for developing ideas for other special sugars.

## NOTES

1. The enrollment totalled 24. One enrollee wanted copies of all course material and occupied a seat, but was only occasionally in the classroom due to previous commitments that could not be postponed.
2. Raymond Vernon, *Technological Development: The Historical Experience* (Washington: Economic Development Institute of The World Bank, 1989). Hernando de Soto, *The Other Path* (NY: Harper & Row, 1989), describes methods used to quantify drain on the economy and on economic growth of government regulation in Peru. Spencer B. Graves, "A Political Platform for Quality Improvement", to appear in 1992 -- *ASQC QUALITY CONGRESS TRANSACTIONS -- NASHVILLE*.
3. This is a paraphrase of the following comments from Vernon, *op. cit.*, pp. 1, 4/5.: "If my interpretation is right, Great Britain's early lead in the 19th century was largely serendipitous, the consequence of policies aimed at other objectives. In its desire to deny the throne the arbitrary rights of monopoly and seizure that were typically exercised by the monarchs in France, Russia, Spain and other countries of the time, the British Parliament had earlier reduced one of the major risks that otherwise faced any incipient industrialist of that era: the threat that the government would arbitrarily introduce levies on profit-earning properties. ... Then, as now, a technology that the state believed to be in its interest could usually gain official support. Accordingly, new refinements in the production of luxuries such as techniques to produce fine china, silk cloth, and glass could easily attract royal sponsorship, as could new ideas for weapons ... . But governments did not yet feel that technologies that might raise the living standards of ordinary people, such as techniques for increasing the output of food, iron, and clothes, were their responsibility."
4. Graves, "Pol. Platform", *op. cit.*; Philip M. Stern, *The Best Congress Money Can Buy* (NY: Pantheon, 198); Amitai Etzioni, *Capitol Corruption* (New Brunswick, NJ: Transaction Books, 1988)
5. Yutaka Kosai, *The Era of High-Speed Growth* (Tokyo: U. of Tokyo Press, 1986, pp. 15/32); Ryoshin Minami, *The Economic Development of Japan* (NY: St. Martin's Press, 1986, p. 49)
6. This is sometimes called "Harmer's Law" after Chester Harmer; see Graves, "3 Laws ...", *op. cit.*
7. P. 31 in Peter Scholtes and Heero Haquebord, "Beginning the Quality Transformation, Part I", *Quality Progress*, July 1988, pp. 28-33

8. Covey, *The Seven Habits of Highly Effective People* (NY: Simon and Schuster, 1989, pp. 204/234)
9. The Federal Quality Institute, PO Box 99, Washington, DC 20044-0099, has a variety of publications, manages an information network, helps organize conferences, and helps promote and annual President's Award for Quality.
10. Public Sector Quality Improvement Network, Michael Williamson, University of Wisconsin--Madison, 97 Bascon Hall, 500 Lincoln Dr., Madison, WI 53706
11. International Center for Economic Growth, 243 Kearny St., San Francisco, CA 94108

## Appendix A. Outline for Eight-Day Course

### PRODUCTIVITY AND QUALITY IMPROVEMENT WORKSHOP

*organised by*

THE MAURITIUS EMPLOYERS' FEDERATION

*in collaboration with*

THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

*and*

THE MINISTRY OF ECONOMIC PLANNING AND DEVELOPMENT

### OPENING CEREMONY

#### ADDRESSES

Mr Paul de Chasteigner du Mee, C.B.E., Chairman, Mauritius Employers' Federation

Dr Spencer B. Graves, Ph.D, Workshop Leader

Her Excellency Mrs Penne Korth, Ambassador, United States of America

Hon. Mr Ramduthsing Jaddoo, Minister of Manpower Resources and Vocational and Technical Training

Hon. Mr Cassam Uteem, Minister of Industry and Industrial Technology

Hon. Mr Jean Claude de L'Estrac, Minister of Economic Planning and Development

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Tea Interval

**MONDAY 13 JANUARY**

- 0900 - 1000    **OPENING CEREMONY**
- 1000 - 1030    **Introductions**
- 1030 - 1045    **Purpose of the course**
- 1045 - 1100    **Presentation of session guidelines**
- 1100 - 1115    **Value of quality and productivity improvement to Mauritius**  
Past - Present - Future
- 1115 - 1215    **Affinity diagrams**  
What, Why, How ?
- 1215 - 1315    *Lunch*
- 1315 - 1355    **'3 Laws of quality / 3 Laws of economic development'**  
Deming chain reaction
- 1355 - 1415    **Quality and productivity improvement - past and future**  
Accomplishments and contributions of:  
Deming  
Juran  
Ishikawa  
Taguchi  
Crosby  
Quality Survey
- 1415 - 1445    **Benefits of continuous process improvement**  
Key Ideas:  
Defect prevention  
Development of quality improvement  
Measurable positive changes
- 1445 - 1500    *Tea Break*
- 1500 - 1530    **Review pictures and bios**
- 1530 - 1630    **Mission statements, strategic planning**  
Annual planning cycle including reviews and replanning  
Group exercise in reviews and strategic planning
- 1630 - 1645    **Course Process Evaluation**

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**TUESDAY 14 JANUARY**

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- 0900 - 0910    Review of Day 1
- 0910 - 1030    Video Film "The Deming of America"  
Discussion
- 1030 - 1040    **World Class Manufacturing Survey**
- 1040 - 1055    *Tea Break*
- 1055 - 1155    **Simulation**
- 1155 - 1230    **Process flow diagrams**  
What, How, Why ?
- 1230 - 1330    *Lunch*
- 1330 - 1400    Team exercises
- 1400 - 1420    **PDCA and Storyboard Format**
- 1420 - 1435    **Overview of the basic tools of QC**
- 1435 - 1450    *Tea Break*
- 1450 - 1615    **Management Systems**  
Command and control management style / Theory X vs. Theory Y  
Various types of participative management  
Beyond Theory Y  
Compensation Systems and other HR Policies  
Scholtes on Performance Appraisals  
WIIFM : What's In It For Me ?
- 1615 - 1645    **Cause-and-effect diagrams**  
What, how, why ?  
Team exercise
- 1645 - 1700    Course Process Evaluation

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**WEDNESDAY 15 JANUARY**

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0900 - 0910	Review of Day 2
0910 - 0930	<b>Data Collection</b> Check sheets Random sampling Stratification
0930 - 0945	<b>Pareto charts and the Pareto principle</b>
0945 - 1000	<i>Tea Break</i>
1000 - 1030	<b>S P C</b> Time series plots Histograms
1030 - 1100	<b>Deming style management</b>
1100 - 1230	<b>Red Bead Factory</b>
1230 - 1330	Lunch
1330 - 1400	<b>Overview of the seven management and planning tools</b> Affinity diagram PERT chart (Arrow diagram) Interrelationship digraph Systematic or Tree diagram PDPC Matrix diagram Matrix data analysis
1400 - 1530	<b>Simulation</b>
1530 - 1545	<i>Tea Break</i>
1545 - 1615	<b>ISO 9000</b>
1615 - 1635	<b>Benchmarking</b>
1635 - 1645	<b>Kano model:</b> Expected quality and exciting quality
1645-1700	Course Process Evaluation

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**FRIDAY 17 JANUARY**

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0900 - 0910	Review of Day 3
0900 - 1000	Simulation Team presentation
1000 - 1045	<b>Quality Councils and Quality Circles</b>
1045 - 1100	<i>Tea Break</i>
1100 - 1130	Employee involvement Discussion : - Employee involvement in Mauritius - The role of organized labour
1130 - 1200	<b>'Eliminating complexity from work', F. Timothy Fuller</b>
1200 - 1300	<i>Lunch</i>
1300 - 1400	Simulation
1400 - 1430	Just-in-time (JIT)
1430 - 1435	Single minute exchange of Die (SMED)
1435 - 1440	Total preventive maintenance (TPM)
1440 - 1455	<i>Tea Break</i>
1455 - 1535	T-Type Matrix for quality troubles Exercise
1535 - 1555	Assignment
1555 - 1610	Course Process Evaluation

<b>SATURDAY 18 JANUARY</b>
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|-------------|---|
| 0900 - 0910 | Review of Day 4   |
| 0910 - 0940 | <b>PDCA in improvement projects, strategic planning and management in general</b> |
| 0940 - 1000 | Discussion<br>Follow-up support ?   |
| 1000-1015   | <i>Tea Break</i>  |
| 1015 - 1115 | <b>Quality education and training</b>   |
| 1115 - 1205 | <b>Simulation</b>   |
| 1205 - 1215 | Course Process Evaluation   |
| 1215 - 1315 | <i>Lunch</i>  |

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**TUESDAY 21 JANUARY**

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- 0900 - 0930    Review of Week 1
- 0930 - 0955    **PRE-TBC - Business Strategies**
- 0955 - 1005    **Why TBC ?**  
The Strategic Implications of time compression  
What changes occur as time is compressed
- 1005 - 1025    *Pre-Session Questionnaire and  
Tea Break*
- 1025 - 1050    **Business Strategies**  
Time & Business  
Time & Customers  
Time & Innovation  
Time & Money
- 1050 - 1100    **Value Chain in Detail**  
Customer's order to fulfilment & replenishment of inventories
- 1100 - 1130    **Cards Exercise**
- 1130 - 1200    How to analyze and compress time
- 1200 - 1215    **Wrap up and Review the A.M.**
- 1215 - 1315    *Lunch*
- 1315 - 1335    Review the questionnaire they completed on arrival
- 1335 - 1345    **Generic product development process and definition of terms**
- 1345 - 1355    Post-introduction reviews
- 1355 - 1415    **T-Type Matrix for quality troubles**
- 1415 - 1435    The ECO Game
- 1435 - 1445    **In-Process project retrospective reviews**

- 1445 - 1500     *Tea Break*
- 1500 - 1510     **The Redesigned Organization**
- 1510 - 1545     Group Work
- 1545 - 1600     Each group's presentation of plans for action
- 1600 - 1625     **Metrics for :**  
Time to market  
B E T  
Customer Complaints / Customer Satisfaction
- 1625 - 1640     Course Process Evaluation

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**WEDNESDAY 22 JANUARY**

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- 0900 - 0910    **Review of Day 6**
- 0910 - 0940    **Documentation of processes**  
A requirement for improvement  
Useful for training  
Supports ISO 9000
- 0940 - 1020    **Deming's system of profound knowledge**
- 1020 - 1035    *Tea Break*
- 1035 - 1050    **Professional societies**
- 1050 - 1145    **Use of control charts**
- 1145 - 1215    **Affinity diagram**
- 1215 - 1315    *Lunch*
- 1315 - 1335    **Course evaluations**
- 1335 - 1435    **Simulation**
- 1435 - 1450    *Tea Break*
- 1450 - 1600    **Customer requested issues**
- 1600 - 1615    **Course Process Evaluation**

**THURSDAY 23 JANUARY**

- 0830 - 0930    **Simulation**
- 0930 - 1030    **Visioning for how to continue to build a culture of improvement in Mauritius**
- 1030 - 1045    *Tea Break*
- 1045 - 1115    **Course Evaluation**
- 1115 - 1145    **More material tailored to the needs of participants**
- 1145 - 1215    **Focus on unfinished issues**
- 1215 - 1345    **LUNCH AND CLOSING CEREMONY**

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## Appendix B. Agenda for Labor Leaders' Session

### PROGRAMME

#### *WORKSHOP ON QUALITY AND PRODUCTIVITY IMPROVEMENT*

24 JANUARY 1992

0900 - 0930	Opening Ceremony Introduction by Mr Azad Jeetun & Mrs Aisha Dozeer. Participants will introduce themselves with a short bio.
0930 - 0945	Purpose session guidelines and agenda
0945 - 1030	Affinity diagrams exercise
1030 - 1045	Tea Break
1045 - 1115	3 laws of quality/3 law of economic development
1115 - 1130	Compensation systems
1130 - 1145	Customers and processes and ISO 9000 series standards
1145 - 1200	Improvement process in management of issues identified in affinity diagram exercise
1200 - 1230	Leaders' support of education and training through participation in quality and productivity improvement programmes
1230 - 1300	Evaluation

## **Appendix C. Daily Course Process Evaluations**

### **More Effective -- Day I (Monday, Jan. 13, 1992)**

- Great participation
- Use of training aids, visuals
- Communication
- Able to look at new concepts of quality management

### **Less Effective -- Day 1**

- Air conditioner
- Food:
  - hot?
  - could be warm
  - sizes be bigger
- Cite examples of effective use of Q.
  - Mgt principles, i.e., Sun
- More examples of Q Leaders theories
- More freedom to express ideas and ask questions

### **More Effective -- Day 2 (Tuesday, Jan. 14, 1992)**

- Deming video
- Deming discussion
- Intro of new tools
- Rhythm better
- Yawning less today than yesterday
- Participants helped manage the session

### **Less Effective -- Day 2**

- Blew agenda
- lunch -- dry
- Message for bead game more extensive
- More explanation on tools at intro
- Need a little more intro / overview

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**More effective -- Day 3 (Wednesday, Jan. 15, 1992)**

- Clear ideas of theories of management
- System of brainstorming
- New information
- Assorted media used
- Participation
- Training -- Co-wide & organization
- PDCA
- Approach to new & modernized (sic)
- Simplicity of presentation

**Less Effective -- Day 3**

(No comments offered.)

**More effective -- Day 4 (Friday, Jan. 17, 1992)**

- Complexity is good
- Participation in planning
- Good lunch & lots
- Copies received
- More aggressive attack on problems
- More dynamic insight on quality improvement
- Video - HP
- Poster gives picture of recognition
- Video demonstrated people power

**Less Effective -- Day 4**

- Q Circles video -- too long
- Exercise -- goal not clear

**More Effective -- Day 5 (Saturday, Jan. 18, 1992)**

- Good discussion
- More relaxed
- Participation -- sharing the real live experiences

**Less Effective -- Day 5**

- Absence of cakes
- Presence of fish fingers
- ECO (interview for an article in a magazine)

**More Effective -- Day 6 (Tuesday, Jan. 21, 1992)**

**Competing Against Time  
Finished on time  
We Won  
Participation  
TBCA**

**Less Effective -- Day 6**

**Cards exercise -- no discussion / work  
Fish  
Waiting for tea samples**

**More Effective -- Day 7 (Wednesday, Jan. 22, 1992)**

**Discussion after Presentations (Gill)  
Video  
Brainstorming  
Training info interesting  
Deming's points  
Tea**

**Less Effective -- Day 7**

**Simulation  
Training info too long**

**More Effective -- Day 8 (Thursday, Jan. 23, 1992)**

**Control charts  
Customer requested issues**

**Less Effective -- Day 8**

**No time for other customer requested issues**

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**More Effective -- Session with Trade Union Leaders (Friday, Jan. 24, 1992)**

**Good tea break  
Lecturers  
Environment  
Didn't talk manager's language  
Pens**

**Less Effective -- with Trade Union Leaders**

**3 Laws needed more background info & concrete examples  
Short amount of time  
Overhead and handouts**

## **Appendix D. Scope of Work**

### **BACKGROUND**

USAID is sponsoring two projects in Mauritius in support of industrial diversification: the Mauritius Industrial Diversification Project (MIDP) and the Human Resources Development Assistance Project (HRDA).

The MIDP and HRDA projects are closely related. The MIDP will provide conceptual, policy and practical guidance to the Government of Mauritius (GOM) and the private sector in pursuit of industrial diversification. The HRDA project will provide training to both public and private sector managers in areas identified as important to the success of the industrial diversification process. The first training activity implemented in Mauritius was on Export Marketing. In addition to this second workshop on Productivity and Quality Improvement, other courses in Financial Analysis of Investment, Use of Technical Information, Entrepreneurial Development and Redesign of the Workplace have been and continue to be organized to support the MIDP.

Mauritius has always been an export-oriented nation, but this thrust consisted mainly of sugar exports until 1971 at which time a major policy shift led to the creation of the Export Processing Zone (EPZ) which is now recognized internationally as a success. The base under the EPZ boom, however, is fragile. Textiles and garments dominate production. None of the other EPZ industries, which include toys, flowers and optical goods, supply more than 5% of exports or one percent of jobs.

The success of both sugar and textiles depend heavily on preferential access to the U.S. and European markets. For textiles, the expertise of seeking and entering export markets has been performed mainly by foreign investors who selected Mauritius as an attractive export platform.

To continue to be competitive on the world market in the current export areas and to ensure competitiveness in any new areas which are developed, improved productivity and quality control will be necessary.

The Productivity and Quality Improvement Workshop is designed to provide senior managers in both public and private sector firms, and trade union representatives, with the tools to promote better productivity and quality based on the most recent innovative approaches to setting objectives, rewarding performance and getting employees to take an active interest in the productivity of the company.

## ARTICLE I - TITLE

Human Resources Development

(PROJECT NUMBER: 698-0463.42)

## ARTICLE II - OBJECTIVE

The Productivity and Quality Improvement Workshop will provide training to senior managers from private and public sector firms and to trade union representatives in the elements of improving management, organization and motivation for increased productivity.

## ARTICLE III - STATEMENT OF WORK

The contractor will design a workshop for senior public and private sector managers and trade union representatives in productivity and quality improvement in mauritian enterprises. An outline of the workshop as suggested by the sponsoring organizations follows:

### 1. PRODUCTIVITY IMPROVEMENT

- A. Productivity Reviews
- B. Assessment and Measurement
- C. Personnel Management and Organization Development
  - 1. Performance Appraisal and Incentive Schemes
  - 2. Employee Participation Schemes
- D. Operations Analysis
- E. Value Analysis

### 2. QUALITY

- A. Leadership
  - 1. Senior Management
  - 2. Quality Values
  - 3. Management System
- B. Information and Analysis
  - 1. Scope of Data and Information
  - 2. Data Management and Analysis
- C. Strategic Quality Planning
- D. Human Resource Utilization
  - 1. Employee Involvement
  - 2. Quality Education and Training

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- E. Quality Assurance of Products and Services
  - 1. Introduction of New or Improved Products
  - 2. Process Operations
  - 3. Measurements and Standards
  - 4. Audit
  - 5. Documentation
  - 6. Quality Assurance of Operations and Processes
  - 7. Quality Assurance of External Suppliers
  
- F. Customer Satisfaction
  - 1. Knowledge of Customer Requirements
  - 2. Methods of Measuring Customer Satisfaction

The contractor should view the suggested outline as a guide and should rely heavily on his direct experience in conducting similar courses in developing countries. The course may incorporate lecture, group discussion, simulation, case studies and company visits as appropriate and should include, if possible, films or videotapes to be left in Mauritius.

The subject matter and level of presentation should be tailored to Mauritian needs. One week is allotted on site prior to implementation to allow the contractor to assess local conditions in order to adapt certain portions of the training content to respond to those conditions.

1. The profile of the targeted trainee as provided by the sponsoring organizations follows:

- a. Managers: senior level business manager owner, 35-45 years of age, mainly university-trained, ten years of professional experience, most usually in personnel or production management. Prior training in issues of productivity and quality might include limited course work at the university level.
  
- b. Trade Union representatives: senior representatives, probably on the level of the executive Committee of several of the ten Mauritian Trade Union Federations, 35-45 years of age, secondary level education, 15 or more years of production experience.

Most commonly encountered difficulties in productivity and quality in Mauritius include absenteeism, high level of rejects, lack of timely deliveries, machine breakdowns, poor communications between top and line manager. Many quality managers are poorly qualified for their positions.

2. Provide a final draft of workshop contents, presentation methodology, evaluation questionnaire and scheduling to REDSO/ESA for final review 10 days prior to departure for Mauritius.
3. Briefing on progress of MIDP and HRDA activities will be received from the GOM in Port Louis.
4. Train 1-2 local consultants/trainers in presenting the Productivity and Quality Improvement workshop. Local resources include personnel managers, University professors of production management, staff of the Mauritius Standards Bureau (MSB). (MSB conducted annual quality workshop from 1984-86 and now conducts a certificate program at the University of Mauritius for shop managers.)
5. Present workshop in Port Louis.
6. At the end of the course, conduct an evaluation among participants of the workshop, using a previously agreed upon evaluation questionnaire. Submit a completion report including the results of the Evaluation questionnaire and any comments/recommendations related to the implementation of the Workshop to REDSO/ESA within two weeks following implementation of the workshop.

D. PREPARATORY MATERIALS

As background to the workshop, the contractor should review the following documents:

- Project Paper, Mauritius Industrial Diversification Project
- Outlines of prior courses offered in Mauritius on Quality Control
- Description of Certificate in Quality Control Program offered at the University of Mauritius
- Mauritius Standards Bureau Annual Report and Publications
- Pre-Implementation assessment report (prepared for the first workshop)

ARTICLE IV - REPORTS

See Statement of Work