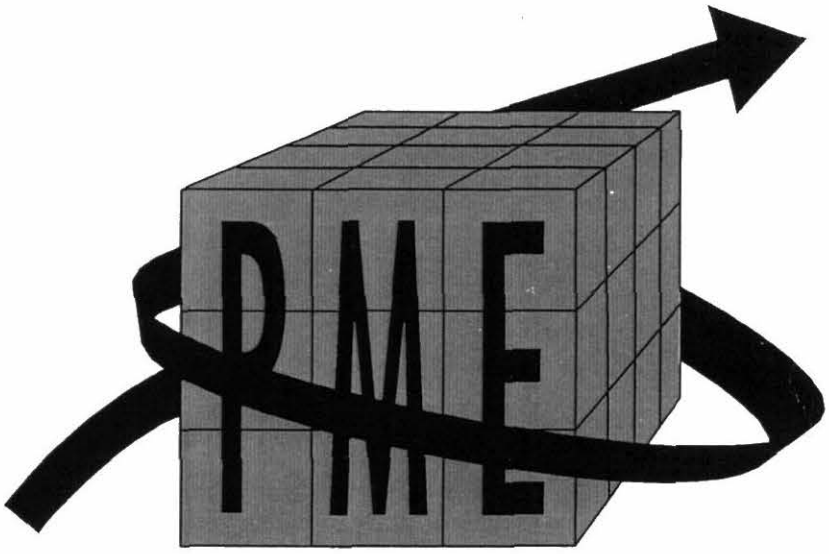
Training in Planning, Monitoring and Evaluation for Agricultural Research Management

Module 1

The Strategic Approach



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isnar
International Service for National Agricultural Research

1995

CIAT
Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture

The Strategic Approach to Agricultural Research Management

Module 1

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Institute for Agricultural Research, Chile

PROCADI
Colombian Program for the Advancement of Research, Colombia

EMBRAPA
Brazilian Corporation for Agricultural Research, Brazil

MAG
Ministry of Agriculture and Livestock, Costa Rica

1995

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Reproduction

Send us your ideas

Training materials such as these are not finished products but works in progress. They can always be improved. Since we hope to revise them in future, ***the authors and ISNAR would appreciate receiving your comments and suggestions for improving these training materials***. We would also be interested in learning about your experiences (positive and negative!) using these materials in training and in institutional-change processes.

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Foreword

Agricultural research organizations are passing through a difficult time. The current trend of reducing the role of the state and privatizing many of its activities are putting public-sector organizations in a critical situation. The resources available for research are becoming scarcer while the debate over the role of public, private and non-governmental organizations in research and in the development of agricultural technology is heating up. The public is questioning the organizations' mandates and working strategies and, in some cases, the organizations' reasons to exist.

Agricultural research leaders in Latin America and the Caribbean are well aware of this trend. They have concentrated considerable effort on restructuring their organizations to improve performance and, ultimately, assure their survival. These efforts point to the growing need to improve management in key areas such as planning, monitoring and evaluation (PM&E).

Responding to the region's critical management situation, ISNAR, in 1992, began the project "Strengthening Agricultural Research Management in Latin America and the Caribbean," aimed at developing training materials and organizing courses on PM&E.

The simplest path to take would have been to develop materials based on the latest and best general-management texts, and conduct courses. This approach would have been risky, however, since it would have offered materials that didn't necessarily respond to needs of agricultural organizations.

Thirteen case studies were carried out to document the principal training needs and opportunities in the region. Eleven research managers and consultants from the region elaborated the studies and presented the case study reports to research leaders and managers in a regional workshop, held in Mexico in October of 1992.

In May 1993, 18 professionals from various organizations in the region with vast experience in agricultural research management elaborated a set of training materials with the supervision and support of ISNAR and CIAT's Training Unit.

From this first effort until the publishing of these modules, the authors, reviewers and consultants have worked with great dedication to apply, test and adjust the materials during courses and meetings. These individuals, working as a group, have created a valuable training tool. The PM&E modules are flexible and can be used in diverse training events and adapted to suit the varied needs of course participants.

We believe that this interinstitutional effort has been very fruitful. We have the pleasure to offer the present module as a working tool for all of you who are dedicated to strengthening agricultural research management in the region, and as an input for future efforts in management training.

Christian Bonte-Friedheim
Director General, ISNAR

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The authors would like to express their thanks to the various individuals and institutions that made it possible to produce this training module on the strategic approach to agricultural research management.

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Finally, we would like to express our gratitude to our own institutions, which kindly relieved us from our normal duties to allow us to participate in the various activities in this project, to develop our training skills, and to prepare these training materials.

The Authors

General Information on the PM&E Training Materials

The Project "Strengthening Agricultural Research Management in Latin America and the Caribbean"

Agricultural research organizations are passing through a difficult period, in which their mandates, activities and results are questioned. Society's demands for research that contributes to production, welfare and natural resource conservation is increasing. At the same time, the financial resources available for research are becoming scarcer.

Latin American and Caribbean countries have not escaped from these global trends. Many of the region's agricultural research institutions have an uncertain future. Research leaders are searching for new approaches and methods that will assure the sustainability of their institutions and the efficient use of scarce resources.

In response to this situation, ISNAR, in 1992, began a project entitled "Strengthening Agricultural Research Management in Latin America and the Caribbean."

Many individuals and research institutions have played an important role in the project. The project staff's first task was to conduct an exhaustive literature review and carry out 13 case studies on planning, monitoring, and evaluation (PM&E) in agricultural research institutions in the region. The results of these activities were analyzed in a regional workshop held in Mexico in October 1992. The institutional experiences documented in the case studies provided a diagnosis of PM&E in the region and of the training needs and opportunities.

ISNAR teamed up with CIAT's Training Unit to form a group of trainers and prepare a series of training materials on PM&E. In May 1993, 18 professionals involved in agricultural research management in the region participated in a workshop for training trainers at CIAT and prepared the first drafts of four training modules.

After the workshop, the authors met at CIAT individually or in groups to revise and improve the modules in light of the experience gained during three PM&E courses conducted in Uruguay, Ecuador and Trinidad between October 1993 and April 1994.

The sustained strengthening of PM&E in agricultural research institutions can greatly benefit from the use of the project's outputs, which include:

- a select team of trainers
- a methodologically sound set of training materials

- a proven and effective methodology to guide training
- general-reference materials about PM&E

ISNAR, in line with its mandate, will continue to support the initiatives of the region's agricultural research institutions to strengthen their institutional capacity and competence.

Target Group

These modules have been designed to train professionals of both public and private institutions who are involved in the PM&E of agricultural research in Latin America and the Caribbean.

Course participants may be highly heterogeneous in their professions (engineers, sociologists, and economists), their administrative and academic experience.

The training modules are targeted for middle-management officials (heads of planning departments, directors of regional experiment stations, heads of research programs), although at times top management officials and researchers would also participate. A training needs assessment conducted by the project indicated that the target group is very interested in receiving this type of training. It is expected that the participants selected for training courses will be genuinely interested in using the tools and methodology provided to improve PM&E processes in their own institutions.

Training should enhance participants' knowledge, skills, and attitudes required to (1) influence decisions and policies to incorporate integrated PM&E processes and (2) apply the principles, methods, and tools that consolidate these processes within institutions, programs, and projects, to improve the quality of research and its results.

Training groups will normally include between 20 and 25 professionals involved in PM&E activities. It is important that they have the support of the top management of their institutions to increase the chances that post-training changes in skills and attitudes are implemented and enforced. The training events and the complementary instruction materials attempt to create a multiplier effect in which trainees disseminate the principles, methods, and tools they have learned to use.

The Training Modules and Manuals

The training materials in PM&E were prepared through an agreement between the International Center for Tropical Agriculture (CIAT) and the International Service for National Agricultural Research (ISNAR).

The series of four Modules *for instructors* in management training contain the following titles:

Module 1: The strategic approach to agricultural research management
Module 2: Strategic planning in agricultural research management
Module 3: Monitoring in agricultural research management
Module 4: Evaluation in agricultural research management

A series of four manuals has been produced with the same titles but specifically designed for *participants* in PM&E workshops and courses. The modules and manuals complement each other. The instructor has a series of overhead transparencies that can be used during presentations and printed materials that can be photocopied and distributed to participants.

Reference Materials

The project has also prepared the following three books containing additional information about PM&E to guide individuals who wish to establish training programs or train trainers in agricultural research management:

Monitoring and Evaluating Agricultural Research: A Sourcebook. 1993. Horton, D.; Ballantyne, P.; Peterson, W.; Uribe, B.; Gapasin, D.; Sheridan, K (eds.). CAB International: Wallingford. This reference book compiles diverse concepts, methods and information sources about the principal aspects of agricultural research monitoring and evaluation.

Administración de la investigación agropecuaria: Experiencias en las Américas. 1994. Novoa B., A.R. and Horton, D. (eds.). Tercer Mundo Editores in association with ISNAR and PROCADI: Santafé de Bogotá, Colombia. This book reports on the experience gained by the project through the case studies, meetings, consultancies and analyses of agricultural research management in the region.

Training of Trainers in Agricultural Research Management. 1995. Zapata, V. International Center for Tropical Agriculture (CIAT) in association with ISNAR: Cali, Colombia. This train-the-trainers manual discusses the process of training the project's trainers, and explains in detail the steps in planning, conducting, and evaluating training events and in designing training modules.

Preparing the Modules

The modules were prepared using a methodology to develop training materials which CIAT has successfully developed and tested. A large group of authors, production assistants and consultants interacted with project personnel for one year to attain the different products, particularly the training modules. The chronology of this process is summarized in Table 1.

Train-the-trainers workshop

The first drafts of the four training modules were prepared in a Train-the-Trainers Workshop held 10-28 May 1993 at CIAT. Eighteen professionals from 13 institutions and 10 countries participated in the workshop.

Test of the modules and internal review

The training modules benefited from two trial runs. The first was a sub-regional PM&E course for the Southern-cone countries held in Uruguay in August 1993. The second was a sub-regional PM&E course for the Andean countries, Mexico, and Central America held in Ecuador in September 1993. Fifteen instructors participated in the two workshops.

In each course, the training materials and the instructors were intensively evaluated. Immediately after each event, the instructors revised and corrected their modules.

After the second course, a group of trainers met in CIAT for a week to review the design and content of the course and all the modules. R. Posada, A.M. Ruíz, L. Romano, A. Novoa and J. de Souza participated in this internal review.

External review of the modules

In December 1993 and January 1994, eight specialists in different aspects of planning, monitoring and evaluation reviewed the modules. In March 1994, L. Romano, R. Posada and A. Novoa met in CIAT to incorporate the suggestions of the external reviewers into the final draft of the modules.

During the entire process of the production of the modules, Douglas Horton, Juan Cheaz (ISNAR), Vicente Zapata and personnel of CIAT's Training Unit served as facilitators and as sources of information about research management, adult education, the organization of training event, and preparation of the training materials.

Features of the PM&E Training Modules

This training module consists of a package of materials designed to facilitate the learning and teaching of PM&E. It is part of a series of four modules. You can use all four modules together as a complete course or separately as part of a specialized course in one of the selected themes.

Table 1. Authors and reviewers of the training modules, and instructors of the first two PM&E courses

Module	Authors	Instructors		External Reviewers	Internal Reviewers	
		1st Course	2nd Course		1st revision	2nd revision
1	Silvia Gálvez (INIA) Andrés Novoa (PROCADI) José de Souza (EMBRAPA) Marta Villegas (MAG)	Silvia Gálvez José de Souza	Andrés Novoa José de Souza Marta Villegas	Enrique Alarcón (IICA) Bruce Johnson (University of Sao Paulo, Brazil)	Andrés Novoa	Andrés Novoa
2	Jairo Borges (U. de Brasilia) María Delia Escobar (FONAIAP) Julio Palomino (INIAP) Roberto Saldaña (INIFAP) José de Souza (EMBRAPA)	Jairo Borges María Delia Escobar	Julio Palomino Roberto Saldaña	Marie-Hélène Collion (World Bank) Luis Macagno (INTA)	Rafael Posada José de Souza	Andrés Novoa Rafael Posada
3	Alan Bojanic (IBTA) Guy Hareau (INIA) Rafael Posada (Colombia) Ana María Ruíz (INTA) Emilia Solís (MAG)	Guy Hareau Ana María Ruiz	Rafael Posada Ana María Ruíz	Nohora Díaz (ICA) Govert Gijsbers (Ministry of Foreign Affairs, The Netherlands)	Rafael Posada Ana María Ruíz	Rafael Posada
4	Alicia Granger (INTA) John Grierson (INIA) Tarcizio Quirino (EMBRAPA) Luis Romano (ICA)	Alicia Granger John Grierson	Luis Romano Tarcizio Quirino	George Norton (Virginia Tech, EEUU) Luis Zavaleta (IDB)	Luis Romano	Luis Romano

Each module has three types of information:

- Guidelines for instructors and participants that facilitate the learning process
- Technical information on the specific subject matter
- Appendices that complement the technical information or facilitates the training process

The modules include information about the target group and instruments to assess the participants' expectations and their knowledge of PM&E. They also contain practical exercises and instructions as well as feedback sessions for each exercise. Finally, the modules include tools to evaluate the training event and the instructors.

Training Methodology

This training module is not a textbook, but a tool designed to help instructors motivate course and workshop participants and facilitate the learning process. It helps the instructor inform participants about sources of information that can be useful in improving agricultural research management in their institutions.

The modules are designed to be used in courses and workshops in which participants learn by interacting with other participants, exchanging information and experiences, and by formulating hypotheses and answers to the conceptual and practical problems of agricultural research management in their institutions.

The active learning approach encourages, the development of knowledge, skills and personal attitudes to apply methods of PM&E.

The modules focus on the participants and their learning. The exercises and presentations allow the instructor to monitor the learning process and revise his/her instruction methods to best suit the participants' needs.

These features distinguish the modules from the style and structure of scientific materials.

Other idiosyncrasies of the modules

The modules are products of the intensive work of a group of professionals of diverse nationalities, experience and professional development. Hence, the content and style of each module do not reflect the viewpoint of a single expert but the consensus of specialists: the authors who prepared it and the reviewers who made suggestions.

The authors discussed the form and content of the modules during the workshops and courses. This gave them the opportunity to develop standards on various aspects of PM&E and the best way to develop the necessary knowledge, skills and attitudes of participants so they can improve PM&E in their institutions.

Despite this consensus, each module maintains the form and content that the authors developed during the project.

The action plan

Since the modules focus on action, the training designers agreed that the participants should produce a brief action plan that they could bring back to their institutions. While preparing the plan, participants would transform all that they had learned during the course into concrete proposals that would help improve the PM&E process in their institutions.

An action plan is a document that contains:

- a list of priority problems of PM&E in the institutions that the participants represent
- the strategies the participants hope to use to solve the identified problems
- a summary of the "project" to present to the authorities of the institution to obtain their support

Outline for a PM&E Course

A typical PM&E course would consist of the four modules. Nevertheless, since training needs differ, you should consider the series as a menu in which you select only what you need. You can use each module alone for a course that analyzes in depth any of the themes of the modules. Likewise, you can use several modules together with other related materials (e.g., management information systems).

When you use the four modules of this series in a course, you should devote a day to each module. Leave a half day for the introductory activities (participant registration, group dynamics, pretest and presentation of the course program) and another day and a half for developing and presenting the action plans, event evaluation and closing (Table 2).

Experiences from PM&E courses and workshops on similar ones show that learning and subsequent action improve if participants prepare their action plans during the event. Therefore you should leave time at the end of each day for participants to prepare their action plans.

Regardless of which course schedule you use, you should devote half of the course to conduct practical exercises, group discussions and presentations of the exercises' results. Instructors should try to make their presentations as short as possible and take advantage of the feedback sessions thus helping the participants in areas where they need additional information.

The final decision on the design of a PM&E course that uses these modules and methodology becomes the responsibility of the local coordinators. They know the backgrounds of the participants and can accommodate the materials and length of time dedicated to each theme so that the course will adequately cover the themes of greatest interest. The local coordinators can suggest that participants study less-urgent themes on their own after the course.

Table 2. Possible schedule for a six-day PM&E course

<table>
<tr><th></th><th>Day 1</th><th>Day 2</th><th>Day 3</th><th>Day 4</th><th>Day 5</th><th>Day 6</th><th>Day 7</th></tr>
<tr><td>Morning</td><td>Arrival of participants</td><td>Module 1</td><td>Module 2</td><td>Module 3</td><td>Module 4</td><td>Preparation of action plans
Course evaluation</td><td>Departure of participants</td></tr>
<tr><td colspan="7">Lunch</td></tr>
<tr><td>Afternoon</td><td>Opening
Group dynamics
Expectations
Pretest</td><td colspan="4" rowspan="2">Preparation of actions plans</td><td>Presentation of plans

Closing</td><td></td></tr>
</table>

How to Use the Modules

These training modules focus on *trainining in PM&E in Latin America and the Caribbean*. Hence, specific geographical references are made. If you want to use the modules in other regions you should adapt the content and exercises accordingly.

The modules are divided into *instruction sequences*, including methodological resources and support materials that will facilitate the learning process. For optimal use of the module, consider the following suggestions.

Know the components

Make sure that the module's components are in good condition and in the proper order. Get familiarized with them and make sure you have an overhead projector that is in working order. Estimate the time it will take to carry out the discussions, exercises, presentations, etc. Prepare the classroom and the training materials you will need for each exercise. Finally, make sure all other support and teaching materials are at hand.

Participants are the protagonists

Always keep in mind that the workshop participants themselves determine how much they will learn. Therefore, encourage them to actively participate. Review the flow chart frequently and make sure you are on schedule. Avoid unnecessary personal discussions and keep in mind that time is usually short. Take notes of what you think would improve content and methodology. Emphasize specific objectives so that the audience will concentrate on them. Direct the participants' attention to the main points, highlighting the relevance they have to the terminal objective of the module.

At the beginning of each instruction sequence, you should discuss its specific objectives, then present the content, and finally introduce and develop the exercises.

The tests

Participants will take a pretest, at the beginning of the training event and a posttest, at the end. Both evaluations are formative; in other words, they give participants a chance to evaluate their own progress during the course. They are not designed to give participants a grade.

Content selection

Don't forget that there are manuals that you should distribute to the participants. You should also choose those parts of the module that you feel should be handed out to the participants. Make sure you have photocopies of the material ready for them. You may also want to distribute photocopies of the overheads you use. You should also suggest that participants consult the bibliography for more information about topics that interest them.

Take care of the materials

After using the module, make sure all materials are in good condition and properly organize them in the three-ring binder. This is particularly important for the overhead transparencies, which can easily be damaged.

General Guidelines for Conducting Group Exercises

Throughout this module you will conduct group exercises. Follow these guidelines for conducting them:

- Form groups of no more than six persons. Form the groups randomly so they are well mixed.
- Instruct each group to choose a moderator and a rapporteur.
  The *moderator* makes sure the group completes the exercises on time and motivates the group to focus its discussions and conclusions on the selected themes and objectives.
  The *rapporteur* records the group's conclusions and prepares the transparencies and handouts to present during the plenary session.

- Tell the groups that they must finish within the time allocated for exercise. Check on the groups occasionally to make sure they are progressing on schedule.
- Constantly supervise the groups and make sure all the members participate and answer any questions they may have.
- Make a summary of the plenary session presentations that reinforces the principal ideas.

Instruction Terminology Used in the Modules

Instructors who have not participated in the training of trainers courses will no doubt encounter a few new terms when they use the modules. The most frequently used instruction technology terms are defined below.

Assessment of expectations. Activity in which participants express what they hope to achieve during the training. The instructor can compare the participants' expectations with the course objectives and point out to the participants where they should direct their learning efforts.

Feedback. Answers, suggestions or results of the exercises that training participants make. Feedback helps guide the instructor to revise the materials, or, in case of a questionnaire, review the answers that are considered correct for the questions.

Flowchart. Illustration of the general structure of a module or of a learning sequence. A flow chart shows the steps participants must make to achieve the learning objectives. The most important components of the flow chart are: the objectives, the content and the practical exercises.

Group dynamics. Activity that the instructor conducts at the beginning of a training sequence to stimulate participation, the exchange of knowledge between the instructor and participants and teamwork.

Instruction sequence. Part of a learning module. Its components can vary, but in general, an instruction or learning sequence contains (a) one or more objectives, (b) the information needed to achieve the objectives, (c) one or more practical exercises, and (d) a feedback section that presents the instructor with suggestions or answers about possible outcomes or answers to the exercises conducted.

Learning module. Printed, visual or audiovisual materials designed to facilitate the learning and teaching process. (Also known in other series of materials as *learning units*.)

Pretest. A questionnaire given before a training event to measure knowledge or attitudes before participation. A pretest is used as a baseline for comparison with one or more posttests (administered after the event).

Group Dynamics: A Puzzle Exercise

Guidelines for the Instructor

Objective

✔ To demonstrate in no more than 15 minutes the effects of teamwork by solving a puzzle.

Puzzle description

The puzzle consists of five squares, each formed of three pieces of cardboard (Appendix 12). The pieces are randomly distributed among five envelopes, three pieces in each.

Time suggested for this exercise: 15 minutes

Instructions

- Form groups of no more than five people. All groups may remain in the same room. If there are less than five people left they will be appointed as observers, one per group.
- Give each group an envelope. Each envelope contains the five smaller envelopes (one for each participant), with the cardboard pieces needed to form the five squares.
- Read aloud the instructions for the exercise. You may use the flip chart to write the rules of the game. Use the following example of instructions if you wish:
  - "In the following exercise, each participant in each group has to form one square using the pieces that the group is about to receive. The game finishes when a group has formed a total of five squares.
  - You have 15 minutes to form the squares.
  - When I give you the signal to start, one member of each group will open the large envelope and will give a small envelope to each of the members of his or her group.
  - Each participant will try to form his or her square as quickly as possible.
  - The first group to finish all five squares will call the instructor to confirm that the squares are formed correctly. If so, the members of this group should quietly join other groups that have not yet finished and observe:
  - Is this group working as a team?
  - Why hasn't this group finished?

- The basic rules of this game are as follows:
  - You are not allowed to talk.
  - You cannot request or take pieces from other group members.
  - You cannot make gestures or signs.
  - You may give your pieces to another group member any time you wish to.

- Once the exercise is finished, the groups remain where they are. Ask a representative from each group to report the outcome, indicating what happened during the exercise. Use the reports to highlight the hindering and facilitating factors of group cooperation and group dynamics. Using the exercise as a basis, you can establish a relationship between the exercise and the methodology of participation that will be used throughout the course.

Group Dynamics: A Puzzle Exercise

Guidelines for the Participant

Objective

✔ To demonstrate in no more than 15 minutes the effects of teamwork by solving a puzzle.

Puzzle description

The puzzle consists of a square of three pieces of cardboard.

- Join a group.
- Open the envelope you are given and start to form a square with the pieces that you find inside.
- When your group has completed all the squares, call the instructor to confirm they are correct.
- The members of the group that finishes all five squares first will join the remaining groups to observe the collaboration within the group and why they haven't finished.
- The rules of the game are as follows:
  - Don't talk.
  - Don't ask for pieces or take them from the other team members.
  - Don't make gestures or signs.
  - You can give your pieces to other group member any time you wish.
- Select a group rapporteur who will relate the impressions, results and observations made during the exercise. You should consider both the constraints to success and the facilitating factors.

Time suggested for this exercise: 15 minutes.

Group Dynamics: A Puzzle Exercise

Feedback

Here are some principles you may share with the audience:

- Successful teamwork means that everyone must understand the instructions.
- If a working group is to be successful, all members must work together.
- Teamwork is characterized by a common objective; therefore, the individual task of the members consists in sharing efforts and resources.
- In successful team, one of the members sometimes has to sacrifice his own interests in the group's interest.
- Adults work very efficiently under pressure.

In order for the group to be efficient:

- Organize the group before beginning the exercise.
- Clarify the task before beginning the discussion.
- Assign responsibilities among group members.
- Respect the time limit of the exercise.
- Control the participation so that all can play a part.
- Look for group consensus.
- Respect everyone's opinion.
- Don't allow lengthy discussions on definitions.
- Don't allow one team member to dominate.
- Don't allow personal antagonism.
- Don't allow unplanned subgroups within a team.
- Don't allow a lack of discipline; productive team will always finish on time.

Learning Expectations

Guidelines for the Instructor

This questionnaire allows participants to introduce themselves to the rest of the group and share individual interests and expectations regarding the content of this module.

Objectives

- ✔ To introduce each participant to the other group members
- ✔ To promote group interaction and participation
- ✔ To explore the expectations of the participants regarding the objectives and content of the module

Steps to follow

- Form groups of five people. Participants should be randomly assigned to the different groups.
- Ask each participant to fill out the questionnaire (Appendix 1).
- Ask each group to name a rapporteur to summarize the characteristics of the group members, highlighting the characteristics that are similar and those that are very different.
- Ask the rapporteurs to share a synthesis of group characteristics and course expectations with all the group members **in a plenary session**. Aspects covered may include academic background, work experience, personal and family aspects, and **expectations regarding this event.**
- Write down the main expectations of each group and compare these expectations with the objectives of the event. Then tell the participants which expectations are in line with the objectives of this module. Follow up on the fulfillment of the expectations, and provide feedback to the participants throughout the event.

Time limits

- Group work: 25 minutes
  - five minutes to fill out the questionnaire
  - 20 minutes for discussion, consensus, and preparation of summary
- Presentation in plenary session: five minutes per group
- Summary by instructor: 10 minutes

Learning Expectations

Participants' Guidelines

You will be given a questionnaire to fill out. This questionnaire contains questions which will help you introduce yourself to other course participants, and will help you identify your main expectations regarding this training event. The expectations in your group will then be summarized and compared with the course objectives.

- Join a group.
- Answer the questionnaire on your own and provide all personal information requested.
- With the other members of your group, name a **rapporteur** who will be responsible for summarizing the characteristics of the group members as well as the expectations you all have regarding the course.
- The rapporteur presents the characteristics of your group **in a plenary session**, highlighting elements related to academic background, work experience, personal and family aspects, and expectations regarding the course.

Pretest

Instructor's Guidelines

- Before handing out the questionnaire, make sure participants understand that this pretest does not try to "evaluate" their knowledge of research management principles and practices. It merely gives them an opportunity to check their level of understanding of PM&E. Likewise, the complete tests will serve as a baseline for comparison with a posttest after the module has been completed.
- Hand out the questionnaire to the participants.
- When all the participants have finished filling out the questionnaire, show them the correct answers (on flip chart or overhead) so each participant can compare his or her responses with those you provided.
- Briefly discuss doubts the participants may have regarding the answers that differ from the ones you presented, without going into detail. Tell them that they will have a chance to go back to the questions as the module develops.

Pretest

Participants' Guidelines

Time to respond:
30 minutes

You answer to this questionnaire will help you assess your knowledge of the strategic approach in agricultural research management.

1. Select one change that you know is transforming the world. Explain one way this change will affect or is affecting:
   a. the agricultural production sector in your country: _____
   _____
   b. the agricultural research in your institution: _____
   _____

2. Illustrate, using an example, how your institution could use PM&E for internal decision-making and for searching for external support.
   _____
   _____

3. Suggest how the experiences of other NARS in the region could contribute to improve PM&E at your institution. _____
   _____
   _____
   _____

4. An agricultural research institution generally conducts planning, monitoring, and evaluation activities separately. If you had to argue in favor of integrating these activities into one process, what advantages would you highlight? _____
   _____
   _____

5. If you had to design a plan to improve PM&E at your institution, what steps would you suggest? Describe them briefly. _____
   _____
   _____
   _____

Pretest - Feedback

Instructor's Guidelines

When time is up for the pretest, do the following:

- Present alternative responses to each item.
- Allow the participants to compare their answers with those you have provided.
- Briefly comment on the answers.

The following helps determine whether the answers correspond to the question.

For question 1

Responses must be related to the implications of any worldwide change on agricultural research institutions. For example:

- Globalization of ecological awareness, with implications for the agricultural research institutions such as:
  - Incorporation of sustainability issues into technology and information generation activities;
  - Strengthening of the biological paradigm compared with the chemical paradigm.
- Internationalization of goods and services, with the following possible implications:
  - Collaboration among institutions in the development of technologies;
  - Competition among institutions.

For question 2

Examples that highlight the role of PM&E in internal decision making:

- Allocation of budgets, research and training priorities;
- External support: national and international technical cooperation, search for funding, political support, linkages with farmer organizations.

For question 3

Exchange of regional experiences in PM&E for mutual strengthening. For Example:

- Networking to exchange information and experiences that help obtain funds;
- Specialist of other institutions propose improvements in PM&E of agricultural research.

For question 4

Any argument that presents PM&E components as parts of the same system.

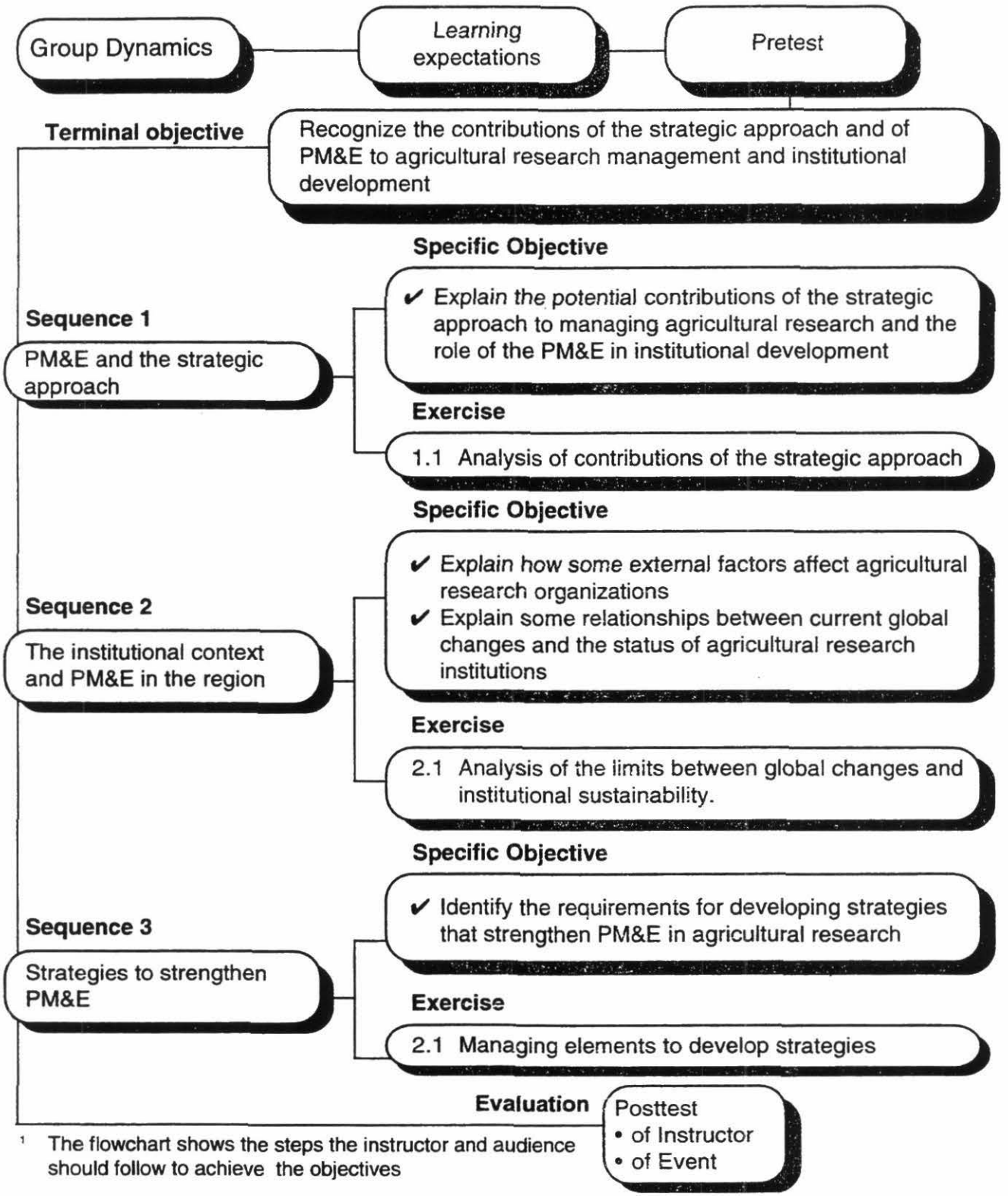
- The contributions to agricultural research are enhanced when an integrated approach to PM&E is used, compared with each of its components used separately.
- Any argument that recognizes agricultural research institutions as a system that generates both knowledge and technology.
- Efficient use of financial and human resources.

For question 5

The answer should include any logical combination of actions, actors, and factors to fulfill the objective, using a methodology of participation. For example, the following steps.

- Analyse the current situation by interviewing different actors (internal and external to the institution) at different levels.
- Develop a preliminary proposal to improve PM&E, based on the diagnosis of internal and external situation.
- Send the proposal to all actors interviewed, requesting their critical review and suggestions.
- Compare criticisms and suggestions to identify congruence.
- Write the second draft to the proposal.
- Discuss the second draft with selected actors participants in the process.
- Incorporate suggestions for a new draft of the proposal.
- Submit this new draft to top management for approval.
- Design a plan to disseminate and implement the proposal.

Flowchart[1] for Module 1



[1] The flowchart shows the steps the instructor and audience should follow to achieve the objectives

Objectives of Module 1

Terminal Objective

After completing this module, participants will be able to:

- ✔ recognize the contributions of the strategic approach and the PM&E process to agricultural research management and institutional development.

Sequence 1 Objectives

- ✔ explain the potential contribution of the strategic approach to managing agricultural research institutions and the role of PM&E in developing and strengthening these institutions.
- ✔ explain at least five advantages of strategic management of agricultural research using the conceptual and methodological elements presented in this module.
- ✔ analyze critically the status of PM&E in a given institution and suggest how it can be improved and strengthened using the conceptual and methodological elements presented in this module.

Sequence 2 Objectives

- ✔ explain how some external factors affect agricultural research organizations.
- ✔ explain some relationships between current global changes and the status of agricultural research institutions, using a general trend as an example.
- ✔ describe the most noticeable features of the status of PM&E in Latin America and the Caribbean.
- ✔ identify the major weaknesses, opportunities, and challenges related to PM&E that are common to most agricultural research institutions in Latin America and the Caribbean.

Sequence 3 Objective

- ✔ identify the requirements for developing strategies that strengthen PM&E in agricultural research institutions.

Introduction to Module 1

The turmoil, uncertainties and breakthroughs of the 1990s have surprised and confused many of us. Many of our institutions have developed without well-defined missions and lack strategies that allow them to capitalize on current trends. Adequate internal mechanisms for defining a new course of action and for assigning existing resources are also lacking. This is a time of crises. Most institutions, however, fail to understand the problems they are facing. They are used to being faced with isolated and well-defined problems such as a financial problem, with budgetary or salary implications; a political problem, with implications for program and project continuity; an internal administrative problem, with implications for institutional integration and for operational processes.

Today, however, society is experiencing a "chain of crises," involving environmental, social, economic, technological, political, ideological and institutional aspects. They all affect the our outlook on the world.

What changes are occurring? How are these changes affecting research institutions in general and agricultural research institutions in particular? What initiatives can be taken to strengthen the sustainability of agricultural research institutions? What kinds of approaches and processes can help modernize and strengthen agricultural research management?

Crises create the need to overcome them in a creative way. The greater the crisis, the greater is the outburst of creativity within society and within its institutions. This workshop, divided into four modules, aims to contribute to this period of creativity in which all nations, and institutions are struggling to overcome unprecedented crises.

In the first module, **The Strategic Approach in Agricultural Research Management**, workshop participants will critically analyze the current global situation. Participants will reflect on what this global crisis means for the agricultural research sector, and on the options that institutions have to face the challenges this crisis poses. To achieve these objectives, **Module 1** is divided into three instruction sequences.

Sequence 1: PM&E and the strategic approach

On the basis of introductory texts on each topic and the results of individual and group analyses, the participants are encouraged to produce, as a group:

- an argument on how the strategic approach can be applied in agricultural research management;
- an analysis of how PM&E could strengthen agricultural research management;
- recommendations for developing an effective strategy to strengthen PM&E in agricultural research institutions.

Sequence 2: The Institutional Context and PM&E in the Region

Participants are encouraged to produce, as a group:

- a critical study of global changes and some of their implications for agricultural research institutions, after reading and introductory text on the topic;
- a critical analysis of the status of PM&E in Latin America and the Caribbean, after reading a summary of the reports of 13 case studies carried out in the Americas.

Sequence 3: Strategies to Strengthen PM&E

On the basis of an individual analysis of introductory texts and group exercises, Sequence 3 encourages the participants to produce, as a group:

- a critical review of what a strategy is;
- a summary of basic principles and requirements for designing a PM&E system for an agricultural research institution.

Other PM&E Modules

The other three modules discuss:

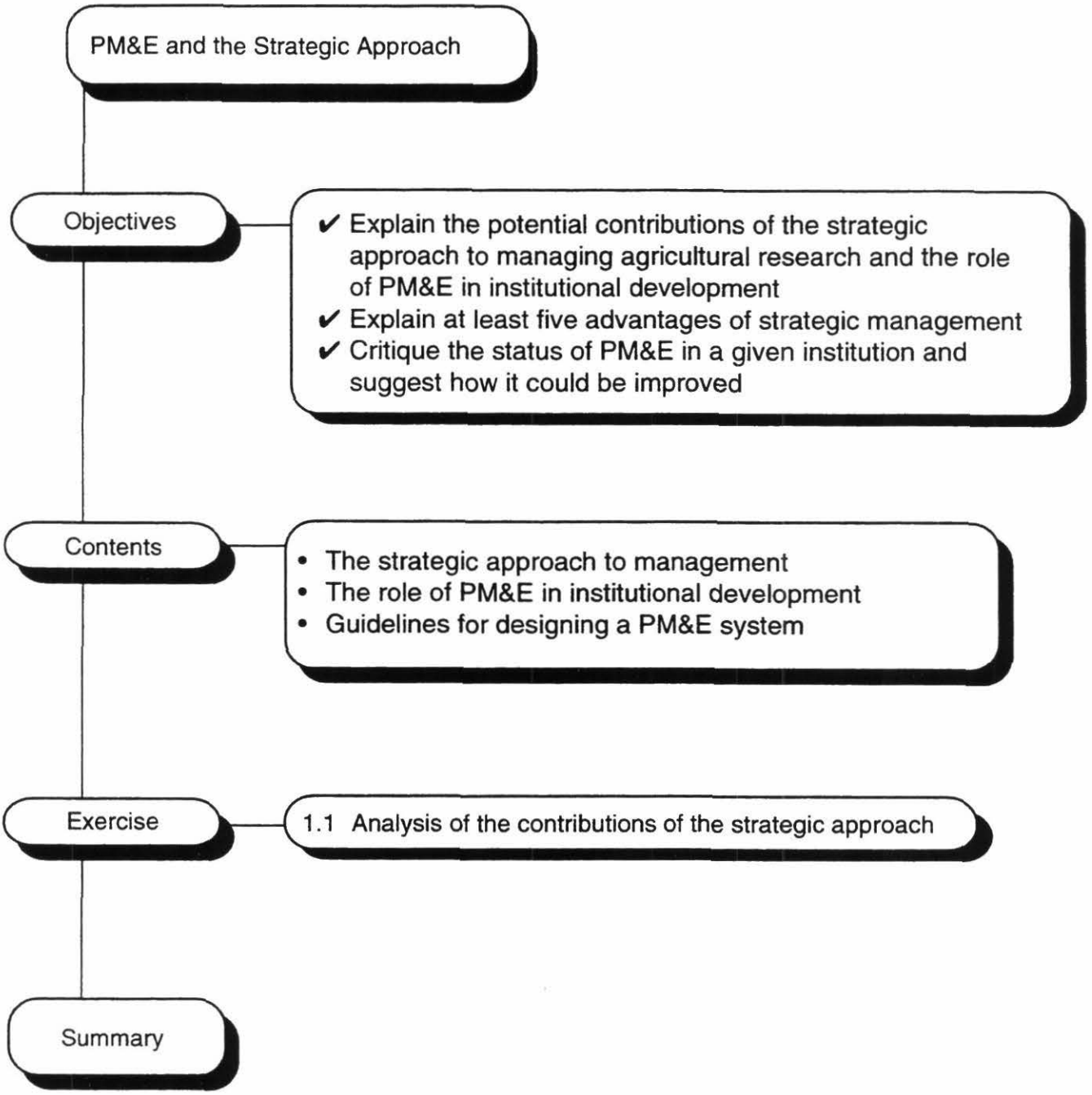
- Strategic planning for agricultural research management;
- Monitoring for agricultural research management;
- Evaluation for agricultural research management.

These modules discuss in depth the topics that Module One introduces. We invite our readers to study the contents of the other three modules to obtain a comprehensive overview of agricultural research management and of PM&E.

Sequence 1. PM&E and the Strategic Approach

Page

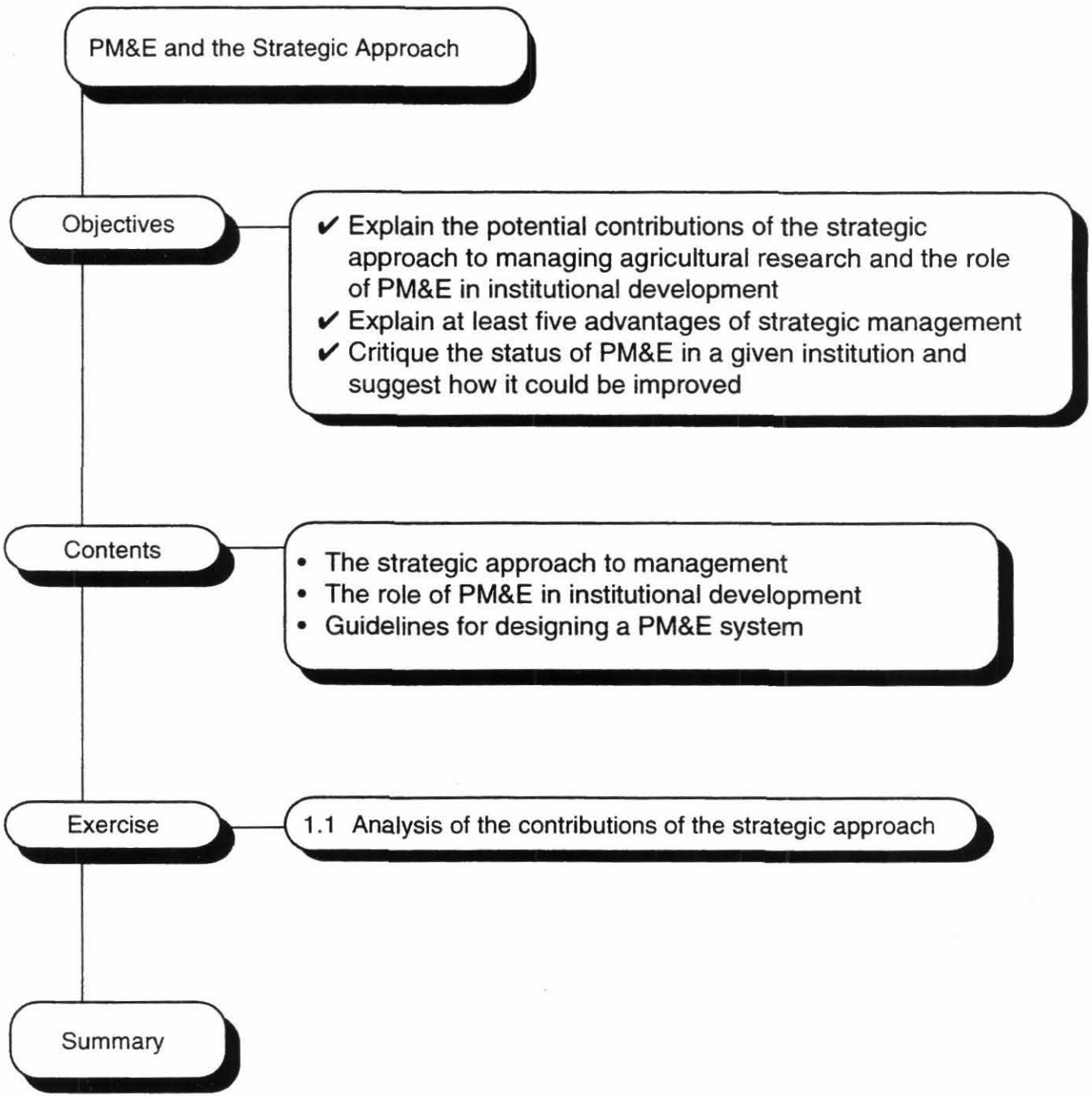
Flowchart for Sequence 1



Sequence 1. PM&E and the Strategic Approach

Page

Flowchart for Sequence 1



Objectives of Sequence 1

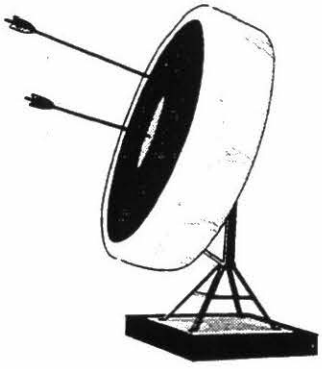
Terminal Objective

After finishing this sequence, participants will able to:

- ✔ explain the potential contributions of the strategic approach to managing agricultural research and the role of PM&E in institutional development.

Specific Objectives

- ✔ explain at least five advantages of strategic management.
- ✔ critique the status of PM&E in a given institution and suggest how it could be improved.



The Strategic Approach to Management

Origin

Most people associate the word "strategy" with military activities where generals design campaigns to defeat the enemy. In the 1960s, this concept was incorporated into the "business war" (Gaj, 1990). Companies like IBM, General Electric, Volvo, and CITICORP were among the first to adopt the "strategic approach" (Hanna, 1987).

In the 1970s, the strategic approach moved to management and related fields. As a result, the concept of the "global society" was introduced, two specialized journals were created, a conference on this topic was held every year, and many related studies were carried out, mainly in Europe and the United States. The father of this movement, and the first scientist to use the term "strategic management," was H. Igor Ansoff of the University of San Diego, USA. Other founding members of the movement were Derek Chano (Business School of Manchester, England), Henry Mintzberg (McGill University, Canada), Phillippe de Woot (Lovaine University, Belgium), and Dean Schendel (Purdue University, USA) (Gaj, 1987).

In short, during the 1970s, the strategic approach complemented traditional management with insights, concepts, and methodology necessary to manage complex and dynamic institutional environments.

Concept and Characterization

Contrary to what many believe, strategic management is not just a series of concepts, methods, and techniques that can be taught in the classroom. Strategic management is more a combination of philosophy and behaviors for developing knowledge and attitudes that have serious implications for organizational culture.

Many theoreticians and practitioners have developed and adapted concepts and methods for strategic management (Gaj, 1987, 1990; Dean and Cassidy, 1990; Godet, 1987; Johnson, 1987; Oliveira, 1991; Wright and Pringle, 1992).

The most important thing about strategic management is not the tools, but the "strategic purpose" of those who practice it. Little is achieved if the tools are available, but there is no strategic purpose. A strategic purpose can even overcome the lack of some tools.

In this context, strategic management is an approach—a different way of understanding and practicing management—that recognizes and highlights critical managerial aspects such as:

- the importance of the environment, with its opportunities and threats;
- the importance of a client-centered action plan;
- commitment to long-term goals and institutional sustainability;
- "intelligent investments" like human resource development, which have a multiplier effects within the organization;
- commitment to the principles of total quality at all organization levels;
- the importance of competitors as reference points for organizational performance;
- the challenges represented by complex realities and by social, political, and economic turmoil;
- mobilization of internal creativity and expertise.

Several of these aspects should be highlighted when referring to the strategic approach to agricultural research management. For example, clients, beneficiaries, partners, and users of research and technology transfer organizations constitute a particularly important sector. The strategic approach stresses client-oriented activities.

Since research institutions promote technology generation and change, they must have long-term projections and invest strongly in developing human resources. As mentioned previously, the strategic approach to management encourages internal creativity and expertise that will promote innovative, timely, and continuous advances, particularly in the case of research institutions.

The strategic approach to management does not make traditional management obsolete, but provides a new direction to tactical and operational issues.

The aspects mentioned help characterize the strategic approach to management. This approach does not make traditional management obsolete, but provides a new direction to tactical and operational issues. Table 3 summarizes some of the main features of the strategic approach to management.

Table 3. Principal features of the strategic approach

- Plans on the basis of turmoil and lack of continuity.
- Builds alternative scenarios to clarify uncertainties and future trends, and the forces that cause them.
- Focuses on the market and the demands of clients, users, and partners.
- Builds a strategic culture to achieve a flexible organizational behavior that adjusts to changing conditions.
- Employs a holistic approach to explore the complexities of reality.
- Gives higher priority to environmental factors than to internal organizational factors.
- Promotes a new institutional behavior.
- Accepts changes because they can adjust the course of the organization according to emerging trends.
- Gives priority "intelligent investments"; in other words, applying resources to factors that transform other factors.
- Uses an interdisciplinary approach.
- Promotes decentralization.
- Prefers collegiate decisions.
- The order of priorities is: strategic planning, tactical, operational.
- Planning, monitoring, and evaluation are integrated as parts of the same process.
- Its commitments are long-term, medium-term, and short-term, in that order.

Basic Components of Strategic Management

A strategic intention. Many institutions have difficulties in formulating a plan that guides them to a successful operation, especially in times of change, when uncertainties and conflicts prevail. The top management of these institutions lacks what is called in strategic management the "strategic purpose" (de Souza, 1993). It consists of the ideal combination of the following elements:

- a **futurist view** of the institution;
- the **conviction** that it is important to have a strategic plan that can turn this vision into a reality;
- a strong **desire** that this strategic plan will succeed;
- the political **will** to make the formulation and implementation of the strategic plan viable;
- the **courage** to assume the risks underlying an initiative of this type and magnitude.

Long-term commitment. Agricultural research requires a long time from initial conception to the ultimate adoption of research results. However, the daily pressures on institutions make long-term commitments difficult. Most managers focus their attention, energy, and resources mainly on operational activities and, at the most, on tactical processes.

If an agricultural research institution continues to follow this pattern, it will probably not succeed during the chaotic 1990s, faced with the challenges of the 21st century. But, the institution will not solve the problem by disregarding operational or tactical plans either.

One of the main features of strategic management is its long-term commitment. By using specific techniques to build alternative "future scenarios" and by applying the concepts and methods of strategic planning, institutions will be able to:

- assess the external environment to identify opportunities and threats;
- assess the institution's status;
- trace the future course of the institution;
- determine the differences between current institutional capacity and the conditions needed to follow the proposed course using "gap analysis";
- develop a strategic plan;
- translate this long-term plan into an action plan;
- formulate a plan to adjust the organizational structures; and
- design and establish an integrated planning, monitoring, and evaluation system.

Institutions must become more flexible and innovative in order to make appropriate decisions for the future. To introduce the strategic approach to agricultural research management, managers must break with the past. This is difficult, particularly if their institutions were successful. A successful past can be the worst enemy of change since it is difficult to accept that some things are wrong and must be changed.

Strategic culture. Most institutions find it difficult to adopt changes that have serious implications for their organizational culture. According to Gaj (1987), institutions fall into four groups regarding their reaction to strategic management:

Strategic management can make agricultural research organizations more responsive to changes in their external and internal environment and more successful in introducing new ideas.

- institutions that easily and quickly grasp strategic ideas, but also abandon them very easily;
- institutions that assimilate new ideas very slowly, but do not abandon them easily;
- institutions that assimilate new ideas openly,

either slowly or quickly, and incorporate them widely, sticking to them;
- institutions that accept strategic ideas with difficulty and abandon them easily.

Strategic management helps an institution to:
- accept that a "strategy" implies change;
- produce a "strategic vision";
- invest in "strategic training";
- convince all involved that **the organization needs to be analyzed**, allowing both its strong and weak points to be identified (internal prerequisite);
- convince all involved that the **surrounding environment needs to be analyzed** to build appropriate environments for the future (external prerequisite);
- assume **flexibility** as a principle;
- handle **conflicts** and **opposition.**

Strategic Management in Agricultural Research

How can an institution become more competitive and viable? Incorporating the strategic approach to management is one answer to this important question. There are two major reasons why the strategic approach should be applied to agricultural research management.

1: Institutional sustainability

Institutional sustainability will become more difficult to achieve in a world full of uncertainties, global conflicts, technological and economic competition and with institutions under an increasing pressure to become more efficient. According to de Souza (1993), strategic management can contribute to sustainability of agricultural research institutions in at least three ways:

Institutional project. Through strategic management, an institution can develop a strategic plan with a stated mission, philosophy, objectives, policies, directions, priorities, and strategies that guide the institution into the future.

Institutional competence. Having a good plan doesn't help an institution if it cannot successfully carry it out. Strategic management strengthens the technical, conceptual, methodological, organizational, managerial, and structural capacities of institutions.

Institutional credibility. A good plan and the ability to carry it out still do not guarantee an institution's success. The institution must gain the credibility of the social and political groups that are demanding that institutions focus on the market and on the needs of their users, clients, and partners. Through strategic management, institutions have greater management transparency, enhanced linkages with the environment, and greater political and social permeability. It also improves participation within the institution and with users, clients, and partners, and employees (Figure 1).

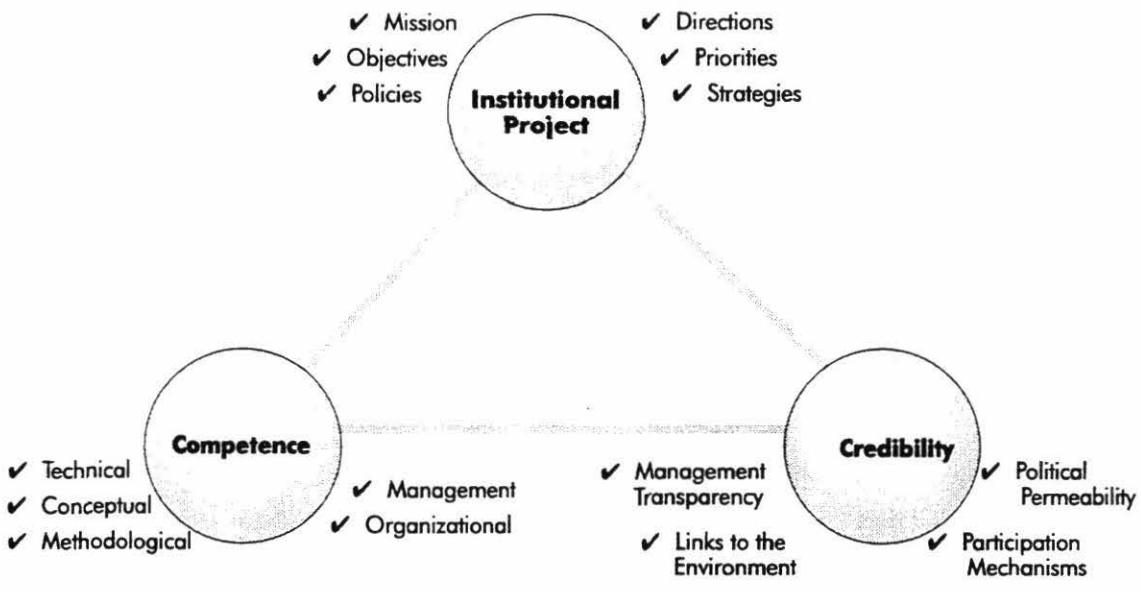


Figure 1. Essential elements for institutional sustainability

2: Mobilization of human resources

One of the major challenges facing agricultural research institutions in this decade is internal integration; this is, the difficulty or impossibility to generate or increase the creativity and vision of its own human resources.

Advantages of participatory models and processes are increased output (both in quantity and quality), greater mutual responsibility and stronger institutional legitimization and commitment. The complex activities of an agricultural research institution require a high level of internal integration. If integration is poor, the institution will be unable to operate as an efficient system to produce knowledge and technology.

Organization of the Strategic Approach to Management

Simplified strategic management system

Many of the smaller, less complex, institutions have not yet begun institutional change, because they think that the available models are too complicated. Small, relatively simple institutions, however, can rely on a basic strategic management system that includes the following characteristics (Gaj, 1987) (Figure 2):

- strategic diagnosis;
- strategic development;
- process management;
- strategic budgeting.

Figure 2. Basic strategic management system

These elements are closely interrelated and interdependent, and cannot be managed separately. To ensure that this simplified strategic management system succeeds in simple or averagely complex institutions, these elements must be combined and integrated in the best possible way.

- **Strategic diagnosis** allows institutions to review the management and organizational attitudes toward their future. Institutions can identify real institutional needs in relation to future goals, and can define the activities that should be initiated to achieve these goals.
- **Strategic development** simplifies the allocation of resources and

efforts, whether to obtain relevant information, to formulate training plans, or to make organizational or structural adjustments. Strategic development means moving from one specific point to a more advanced point. It implies action.

- **Process management** consists of developing schedules, making them operational, and meeting the time limits that are set for the strategic institutional change. It also means designing special projects (that can be called "strategic projects") to help solve specific institutional problems that need to be treated differently than daily routine problems.
- **Strategic budgeting** regulates the flow of available funds, analyzes the possibilities of obtaining resources, establishes the pace of the transformation process and favors "intelligent investments," assigning resources to factors that transform other factors.

Comprehensive strategic management system

Highly complex institutions can also have a strategic management system (Gaj, 1987). In this case, the system will be more complex (Figure 3). A complex institution can begin by introducing the basic system described in Figure 2, and then broaden it to a comprehensive strategic management system.

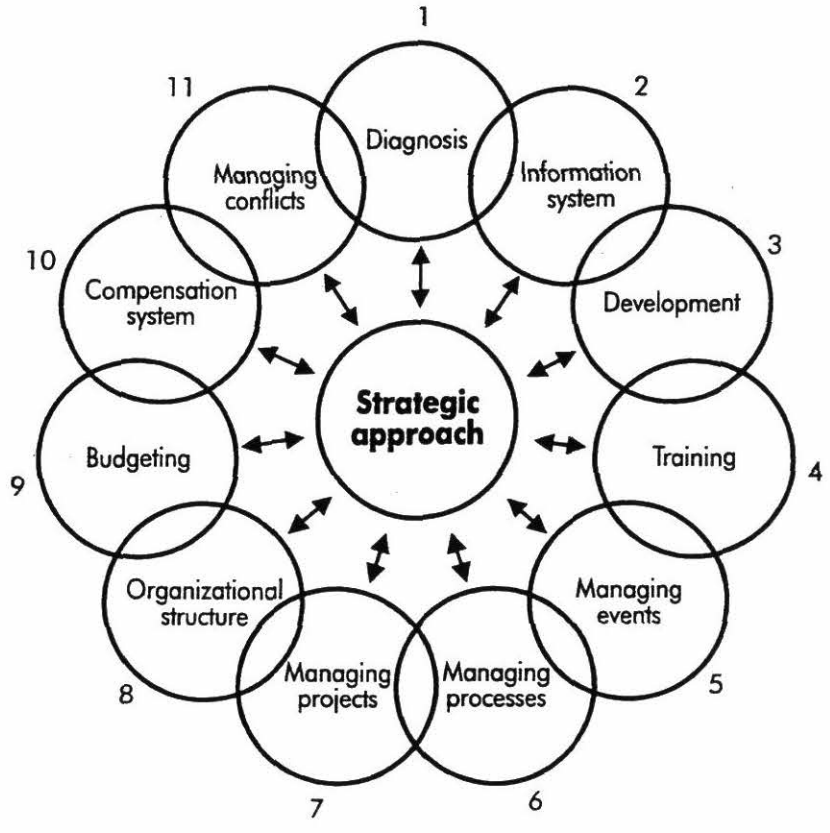


Figure 3. Comprehensive strategic management system

The transition from the simple system to the comprehensive system can be carried out by adding the following stages (Table 4):

- managing opposition and conflicts to the "strategic diagnosis" component;
- strategic training and the strategic information system to the "strategic development" component;
- managing events and managing projects to the "process management" component;
- organizational structure and compensation system to the "strategic budget" component;

Table 4. Components of a strategic management system

Basic components	Complementary elements
• Strategic diagnosis	• Managing opposition • Managing conflicts
• Strategic development	• Strategic information system • Strategic training
• Process management	• Managing events • Managing projects
• Strategic budgeting	• Organizational changes • Compensation system

There is a summary of the additional elements making up a comprehensive strategic management system.

Managing opposition and conflict identifies the need for action when during the process of institutional change, opposition or conflict hinders the implementation of institutional development.

Strategic information system organizes relevant, quantitative and qualitative information on both external and internal environments of the organization. This information is essential when making technical and management decisions during institutional development.

Strategic training involves the adoption of a terminology that facilitates the understanding and interpretation of the philosophy, concepts, principles, and techniques that support organizational development. This common terminology will prove useful when defining an institutional position on the diverse topics debated during the process of institutional development.

Managing events involves the management of important events outside the process of institutional change that can negatively affect the organization. The management approach of these events differs from, and does not depend on, the management of institutional change.

Managing projects deals with the major problems or challenges identified in strategic diagnosis, considered as "strategic plans". They have their own budget and management approach within the overall management of the transformation process, although they depend on its overall logic.

Organizational structure. Organizational changes are needed to better serve the overall strategy of the transformation process and to contribute to the achievement of its general objectives.

Compensation system aims at enhancing the motivation of staff and at creating an attitude that favors strategic activities. This system acknowledges that human resources are the creative force necessary to prioritize institutional change.

Managing Institutional Change

One of the greatest difficulties that managers face is managing institutional change. The following eight suggestions form part of an action-oriented system and indicate how agricultural research institutions can implement institutional change according to the strategic approach (Hanna, 1987; Gaj, 1990).

The key isn't producing plans, but adopting a strategic attitude toward the future.

- Upper-level managers should direct institutional change. To do so, they must receive strategic training on how to lead organizational change.
- The support, direct participation, and political commitment of managers are essential for successful institutional change. In this sense, managers should actively participate in the strategic planning process from the beginning until the changes are effected.
- Two of the most important aspects that managers should keep in mind when managing institutional change are (1) the participation of all people involved in the process of change and (2) their commitment to the results and implications. Participation by staff influences the viewpoints and, consequently, their decisions. "Good" plans can fall through if those executing the plans are not seriously committed to them. Institutions that invest strongly in human resources take account of the strong weak points of their staff in their institutional strategy.

The role of planners is to facilitate and intensify the learning process, and design "pilot changes" that clarify and refine the strategies so subsequent action can take.

- Planning succeeds when it is linked to performance. Planning benefits from experimentation, feedback, and other organizational learning methods.
- Strategic planning of change should initially, and mainly, focus on ideas, approaches, models, paradigms, problems, and challenges. This is contrary to the usual preference to data collection, structures, and procedures. The strategic planning process should establish a genuine dialogue among all levels of management on key assumptions, strategic issues, and options of change.
- Change becomes more efficient as the protagonists learn from experience. It is therefore necessary to apply the "dosage principle", which means that the strategic planning process and the resulting changes are carried out in stages. During the initial stages of this process, the "dosage principle" must be practiced in a simple and informal manner, as closely as possible suited to management interests.
- From the beginning onward, managers should consider redesigning their PM&E system, so that the individual activities can be integrated into one single, systematic, and continuous process. The process should be highly flexible so that the necessary adjustments can be introduced over time. Management should also consider the interrelationships among all institutional (research institution, research center, etc.) and pragmatic (plan, program, project, etc.) levels.
- From the conception of the general strategy of the transformation process onward, a constant concern should be to link new concepts, approaches, and methods to the main characteristics of the current organizational culture before changing it. Transforming the current organizational culture should be a gradual process, which can take five to ten years to complete, depending on the participation of the different protagonists at all levels. The general rule is to begin with the existing organizational culture, then introduce new ideas to the most significant aspects of this culture, allowing the maximum degree of participation. Increasingly more changes can thus be achieved.

Principles of Total Quality

Many institutions have difficulties in improving the quality of their activities, processes, and products. This situation is even more critical in institutions that carry out complex activities, as in agricultural research institutions. Strategic management believes that "total quality" is a way of solving this problem. EMBRAPA, the Brazilian Corporation for Agricultural Research, applies 10 principles of total quality (Table 3),

which they have adapted to their specific situation. There is a summary of these principles:

Table 5. The ten principles of total quality

1. Client satisfaction	6. Process management
2. Participatory management	7. Delegating power
3. Human resource development	8. Dissemination of information
4. Perseverance in goals	9. Quality control
5. Continuous improvement	10. Prevention of errors

1. **Client satisfaction**. This is the most important quality principle and covers the following aspects:
- a clear and precise identification of the stakeholders of the research process;
- an understanding of how the stakeholders of agricultural research evaluate the products and services they use;
- a permanent interaction with the stakeholders of this research sector; and
- careful attention to the expectations of the stakeholders of agricultural research.

2. **Participatory management.** Participatory management means creating effective participation by the institution's staff. It means sharing ideas and responsibilities, and ensuring the commitment of all those involved in the management processes. The following aspects are a part of participatory management:
- encouraging the sharing of opinions and new ideas
- exchanging information
- ensuring participation in the decision-making process
- stimulating leaders who are committed to total quality and the institution's future
- adopt an management attitude
- improving relationships with entities that represent stakeholders of agricultural research

3. **Human resources development.** The following aspects are considered:
- valuing staff members, emphasizing his/her development and fulfillment
- providing training to improve work performance and to overcome formal education shortcomings.

- additional work motivation
- work satisfaction, including adjusting the staff's professional profile to the activity profile
- adequate hygienic, environmental, and security conditions for work

4. **Perseverance in goals.** New values should be incorporated based on the existing organizational culture. Putting this principle into practice depends on:
- persistence in activities that update the organizational culture
- coherent attitudes
- clear and precise definition of purposes within the strategic planning process
- convergence of actions based on trust and commitment

5. **Continuous improvement.** This principle stimulates action-oriented attitudes and permanent and critical assessment of all processes. Aspects covered include:
- outspoken attitude to improve activities, processes, and products
- search for innovation in institutional products, processes, and services
- audacity to propose and assume new challenges
- ability to incorporate new concepts, techniques, and methods
- identification and use of performance indicators

6. **Process management.** If process management is to be implemented, institutions must carry out the following activities:
- identify, the "client-provider chain" in every major institutional and program process. Every employee is, at the same time, the client of at least one other employee and provider of at least one other
- permanently use the planning, monitoring, and evaluation process, following a cycle where planning, implementing, revising, and adjusting is a continuous process
- establish indicators to measure productivity and quality within any given process
- end any departmental feuds and promote integration among areas which cut across the same processes

7. **Delegation.** Delegation deals with providing clients with timely and specific attention by giving more authority to those who are closer to the client. This implies:
- decentralizing the decision-making process
- providing greater autonomy to middle management
- placing decision making where the action is

- providing support to decentralized activities and delegated decisions
- contracting outside services for activities that are secondary but necessary and require expensive infrastructure or training that other institutions already have

8. **Dissemination of information.** The information flow within the institution is made as transparent as possible so all the employees can access information when needed. Total quality cannot exist if information is not transparent. This principle implies that:
- employees should be well informed of the institution's mission, major objectives, policies, and priorities;
- communication channels with the clients should be kept open, so that current information on their expectations and needs is readily available
- the institution's mission, objectives, products, and services should be continues disseminated
- the integrity of information should be maintained
- information should flow constantly and rapidly
- institutional processes must be totally transparent

9. **Quality control.** Quality control is a set of planned, disseminated and systematized activities which ensure that products and services adjust to the demands. This implies that:
- norms and procedures be established on how the process should be developed, how the product should be made, and how the services should be offered
- conditions to monitor and stabilize processes be established to allow efficient replication
- reliability indicators be created, and provide clients with the corresponding certification
- the necessary processes to monitor, revise, and correct deficiencies be formalized to maintain quality standards

10. **Error prevention.** This principle can become both an individual and a collective institutional attitude as it is the essence of a permanent search for excellence. It implies that:
- acceptance of errors be eliminated
- a preventive attitude of error-avoidance be established
- a reduction in internal and external deficiencies be sought to reduce costs while increasing quality

Knowledge as a Strategic Factor

Developed countries are leaving the century of "industrialized societies" and entering the century of "knowledge societies" (Drucker, 1989) and "information economies" (Davis and Davidson, 1993). The 20th century will be a time in which knowledge will be the major strategic factor for the "global power equation" (Toffler, 1990) and of national competitiveness (Porter, 1990).

From the industrial revolution until the present, "money" has been the most important strategic factor; now "knowledge" is becoming the dominant strategic factor in the global power equation.

The "global power equation" is being rewritten; the order of its components -power, money, and knowledge (Toffler, 1990)- is changing. From the invention of agriculture, almost 10,000 years ago, until the industrial revolution, in the 19th century, "power" has prevailed in the global power equation. Today, knowledge is the main factor, because it yields power and money, which in turn can be used to produce more knowledge, which again can be used to generate more power and more wealth.

In the coming knowledge societies, the most valuable products will be those that are knowledge intensive (Drucker, 1989), such as a computer chip or an agricultural policy. Science and technology (S&T) now constitute the main organized source of usable knowledge. By the year 2000, nations will be divided into two categories: those with scientific and technological capacity and those without it. The increasing value of knowledge is an emerging reality which will be responsible for the prestige of certain S&T institutions, particularly those becoming more competitive.

Conclusions

The growing importance of "knowledge" as a strategic factor in the global power equation, and in national competitiveness will make knowledge-producing entities such as science and technology (S&T) institutions much more valuable. However, only the most competitive organizations will survive. Less competitive ones must therefore adopt initiatives that make them more competitive.

We are less than 10 years away from the 21st century. Spectacular challenges await institutions. Traditional mechanisms are inadequate to confront these challenges. New concepts, paradigms, models and approaches must be developed. Strategic management invites us to construct them collectively.

In this section we have introduced the topic of strategic management, to motivate and guide managers and other professionals interested in strengthening agricultural research institutions. The text has covered the origin of the strategic approach to management, the concept of strategic management, its features, and its potential application to agricultural research institutions.

The Role of PM&E in Institutional Development

Why should we plan, monitor, and evaluate at agricultural research?

The previous section showed that the prevailing global trends and changes make agricultural more complex because:

- there is greater interrelationship between agriculture and other productive sectors, such as industry, marketing, and services;
- there is greater interdependence between national and international economies;
- there are greater advances in agricultural technology;
- there are greater risks for the small- and medium-scale producer;
- there are greater possibilities for nontraditional agricultural products in the international markets;
- there is a greater diversity of stakeholders, thus a greater diversity in the types of needs;
- there are new actors in the agricultural research scenario, such as unions and other private sector organizations who have relative advantages in generating and transferring technologies to specific clients;
- there is a greater need to recuperate and maintain the natural resource base that sustains agricultural production.

At the same time, the economic reforms and new policies in Latin American and Caribbean countries —which tend to increase the levels of efficiency— compel agricultural research institutions to plan their activities and continuously evaluate their research results.

Research institutions produce, like many other organizations, knowledge and technology. Such products must be competitive and should be client oriented. In other words, research results should be socially useful.

Societies and governments invest heavily in these **enterprises**. Research institutions repay society by producing useful products. Both institutional and research PM&E are means to ensure the production of such goods.

This repayment can already be observed in different areas, at agricultural research institutions, and in several countries in the region. The use of resources is becoming more efficient, global institutional quality has improved, research institutions have the potential to improve competitiveness in the search for financial resources, and both internal and external relationships of institutions have improved. Interinstitutional

collaboration has been promoted in more innovative and productive terms, and the quality of outputs has been enhanced significantly.

Planning, monitoring, and evaluation, as components of an integrated and sustained process, can improve decision making at different institutional levels, as well as establish agreements with different external agents. Planning, based on previous evaluations, allows institutional needs to be established, research to be planned and new experiences to be learned. Monitoring, based on well-defined plans, contributes to making adjustments in ongoing activities and programs. Evaluation, as a continuous process based on planning and monitoring, nurtures future plans and how they are carried out. The processes of planning, monitoring and evaluation can also help institutions become more in tune with the environment, become more aware of demands of the technological market and new developments and take adequate measures to adjust its organization and performance to the new conditions.

PM&E as a Management Tool

Upper-level management (directors and research managers) should use their authority and leadership to implement PM&E processes and maintain them efficiently. By doing so, research objectives, procedures, and results and their expected use will be well-defined and incorporated into the activities proposed in the plan as part of a methodological or reference framework.

As management tools, PM&E activities are essential to improving the capacity of identifying medium-and long-term goals and to developing the ability to anticipate changes in the social, economic, and political environment. These are basic factors in directing the institution. Internally, these activities contribute to participatory decision making regarding the priorities to which resources are allocated at center, program, and project levels, and to improve resource allocation in technical research activities.

Every day, managers make many different decisions. Good decisions need to be based on good information. Unfortunately, decision making is not always based on well-organized and qualified information. Furthermore, not all managers are aware that PM&E is the organization's mechanism to circulate management information. Some of the basic functions of a PM&E system consist in gathering, reproducing, systematizing, interpreting, and disseminating information relevant to all organizational levels. Intelligent managers make "intelligent investments" to access a well-integrated PM&E system.

PM&E as a Tool for Technical and Financial Negotiation

PM&E processes must be well known and shared. They must yield the impact of both an intelligent allocation of financial resources, and an efficient use of human and physical resources.

Progress reports and impact assessment studies show governments, donors, agricultural organizations, and other stakeholders that their investments in agricultural research have produced benefits and research results have been useful. Such reports improve the institution's power of negotiating, leverage, especially when they seek new funding sources. PM&E provides tools which put institutions in a better position to negotiate with political, social and financial sectors.

Institutions can design better projects if they can identify the problems and needs of producers, the private sector, and the consumers through effective linkages. PM&E contributes significantly to improving the relationships between the institutions and society, reducing the gap between research results and societal needs.

However, some managers and researchers are unaware of the contributions that planning, monitoring, and evaluation of agricultural research can make to their institution and its project. This may be because, even though various elements of PM&E may exist at these institutions, as a whole, they are not integrated into the overall management system. PM&E often encounters resistance within an institution because of the procedures and organizational structuring that an institutional PM&E system requires.

PM&E as a Tool for Institutional Negotiation

Projects and programs conduct socioeconomic impact assessments to validate their results and justify resource allocations. External reviews are used to make an inventory of their results when they face changes related to new work scenarios. These two types of evaluation can help link sectors of the institution's environment that by affect agricultural research by helping to define alternative fields of action and to motivate the necessary changes and to forge strategic alliances.

Socioeconomic impact assessments and external reviews can serve to link the institutions to outside sectors; they can also define alternative fields of action and can provide the incentives to implement the needed changes.

Planning, monitoring, and evaluation can help agricultural research institutions successfully confront the challenges mentioned above. To do so, PM&E must be based on basic, interrelated principles which contribute to building an institutional PM&E environment. To create this environment, the principles, methods, concepts and meaning of PM&E should slowly gain a foothold within the organization. Once PM&E is applied, it will gain in utility and quality and will progressively become established in the institution.

Guidelines for Designing a PM&E System

Research institutions can design a PM&E system that suits their interests, resources, and possibilities on various ways. Institutions may decide to assimilate or adapt plans from similar institutions in the region. Sometimes parts of these plans can be used to design a totally new plan. The source of the ideas is unimportant; the important point is to ensure that the PM&E system responds to the institution's needs, characteristics, and potentials.

Latin American and Caribbean agricultural research institutions differ in the conceptual framework and operational definitions they use to organize and apply PM&E. The first part of this section discusses several basic definitions taken from a literature review and regional experience. These definitions will help establish common meanings. In the second part, several criteria that are considered essential to help design efficient institutional PM&E systems in agricultural research are proposed.

Definitions

Every definition is by itself restrictive—it establishes limits to concepts and meanings. However, definitions are necessary to establish reference points that allow these concepts and meanings to be understood and generalized.

The definitions that follow try to fulfill this purpose. Throughout this module, and in the following training supplements, a common terminology will be used to refer to planning, monitoring, and evaluation of agricultural research. These are operational definitions; they can be used in the specific context of this training course. They must be adjusted, of course, to the operational plans of every institution.

Planning

At the institutional (organizational) level, planning is a dynamic process which sets the institutional course of action toward the **achievement of its objectives**. Planning is "a process for setting organizational goals and establishing the resources needed to achieve them" (Horton *et al.*, 1993).

Planning can also be defined with an emphasis on the environment and the institution's resources: "Planning is the process in which the desired objectives are formed based on the external context to maintain a direction in which an organization can work coherently to allocate the necessary resources" (Johnson, 1987).

Planning in Latin American and Caribbean agricultural research institutions has two basic dimensions: institutional planning and research planning.

In the first case, planning is directed towards institutional development, whereas in the second case, planning aims at determining research strategies, objectives, and priorities, as well as defining activity schedules and results (Novoa and Horton, 1994).

Monitoring

Monitoring is often ignored not only in theoretical essays and conceptual models, but also in agricultural research management. Different schools have different approaches to planning and evaluation, and these are generally seen as associated functions. The same does not occur with Monitoring, since it forms part of the implementation phase of projects and is usually thought of as ongoing evaluation or implementation control (Novoa and Horton, 1994).

Monitoring is "observing or checking on research activities and their context, results, and impact. The goals of monitoring are to ensure that an activity is proceeding according to plan, and to provide a record of input use, activities and research results, and to warn of any deviation from its initial goals and expected outcomes" (Horton *et al.*, 1993).

The terms **observing** and **checking of activities** should be stressed in the definition as well as the relationships between **plans, goals and expected outcomes with the inputs used**.

Monitoring should be used not only in programs and projects but also in departments, research centers and at all institutional levels. It should also be used to identify changing environmental factors.

For Latin American and Caribbean agricultural research institutions, monitoring is used primarily to gather information to make decisions regarding activities, projects, programs, and research centers. It is a joint process by those carrying out the activities and the different decision-making levels. (Novoa and Horton, 1994).

Evaluation

Evaluation is generally defined as "judging, appraising, or determining the worth, value, or quality of research, whether it is proposed, ongoing, or completed. This is done in terms of its relevance, effectiveness, efficiency, and impact. **Relevance** refers to the appropriateness and importance of goals and objectives in relation to assessed needs. **Effectiveness** refers to the degree to which goals have been achieved. **Efficiency** refers to the cost-effectiveness of research activities. **Impact** refers to the broad long-term effects of research" (Horton *et al.*, 1993). Evaluation therefore serves to place a value on research and its results so society can recognize and accept its merit, value and quality.

Principles and Characteristics of a PM&E System

The above definitions can help us understand the characteristics and principles that contribute to designing an efficient PM&E system.

To guarantee that PM&E actually contributes to research institutions, it is important to realize that global changes are imposing new demands on technological innovations. For example, a new dimension must be given to agricultural research and technology transfer because of (1) policies such as privatization, open economy, and subregional integration; (2) new markets for agricultural products and goods; and (3) the need to adjust research and development as well as technology transfer to the challenges of administrative decentralization and regionalization.

On the other hand, institutions should also incorporate new areas of knowledge such as biotechnology and bioinformatics. Institutions must keep in mind the "power" and potential impact of this new knowledge and information explosion.

If PM&E is based on fundamental principles, it may help agricultural research institutions face the above mentioned challenges, and at the same time improve management results. These principles are interdependent and hopefully they will all form part of the **institutional PM&E culture**.

Integration

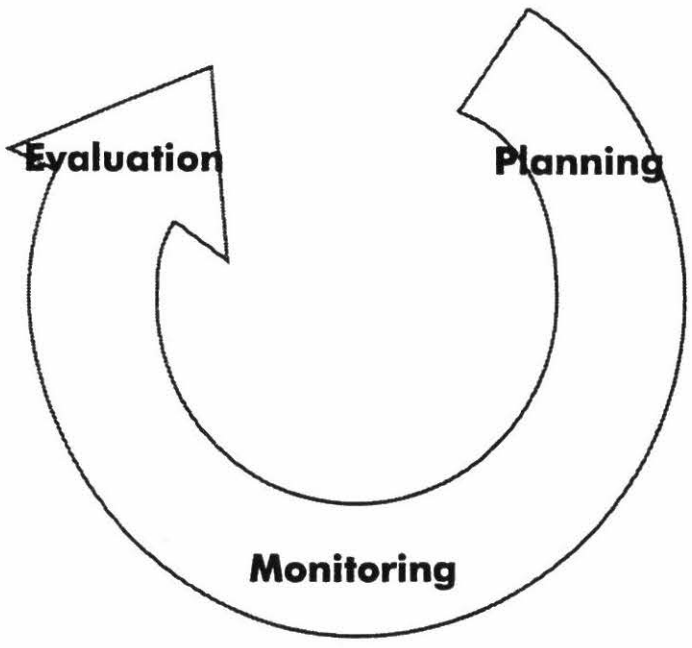
Planning, monitoring and evaluating should be viewed as a part of a continuous process. Actions based on the implementation of PM&E the entire cycle of agricultural research programs and projects. In theory, the product of each component is well defined, but in practice, a line cannot be drawn indicating where one ends and the other begins. A close relationship should exist between project or program planning and the corresponding monitoring and evaluation activities. Figure 4 illustrates how these aspects are integrated into the agricultural research management cycle.

Planning, monitoring, and evaluation should be integrated, to provide coherence and continuity within the management cycle

Likewise, each of the PM&E components should be present in all phases of the project or program. When one of these components is carried out, action focuses on monitoring the inputs, technical and administrative processes, activity schedule, and outcome. Monitoring and evaluation are therefore basic elements that contribute to efficient project or program implementation, while helping planners as well as upper-level management to make informed decisions.

The integration of PM&E facilitates flow the decisions of makes them known at all levels and ensures that decisions will be enforced.

Integration also contributes to creating a sense of belonging among all institutional entities, while giving coherence to their actions in relation to the institution's mission and objectives.



Planning

- Context
- Problem
- Objectives
- Results expected
- Resources
- M&E indicators

Monitoring

- Adjust
- Continue
- Finalize

Evaluation

- Disseminate results
- Redesign research
- Negotiate policies
- Report

Figure 4. Management cycle

Integration establishes a sense of compromise among all those who are involved and reduces the possibility that information is misinterpreted

Integration is also necessary between the diverse actors of the internal and external environment to participate in defining the institution's mission, objectives and priority actions.

Integration between the PM&E processes can also be seen from the viewpoint of the institutional levels in which planning, monitoring and evaluation is conducted (Table 6).

Table 6. Relationships between planning, monitoring and evaluation at institutional action levels

Level of action	Planning	Monitoring	Evaluation
Strategic In relation with the environment In relation with the internal environment	Construction of scenarios Diagnosis	Indicators of the changes in the context Indicators of the strategic performance	Cost-benefit analysis external (impacts)
Tactical/functional Research support	Centers Departments Support units	Monitoring of center, department and unit performance	Evaluation of center, departments and units
Operational Research	Programs and projects	Monitoring of the performance of programs and projects	Evaluation of programs and projects

Participation

Participation not only means that a person is called on or is present whenever an action occurs, but also that this person makes a commitment to achieve common objectives and contribute substantially to fulfilling this commitment. To participate, one has to share.

In PM&E, participation involves directors, administrative personnel, researchers, and assistants, and stakeholders such as producers and consumers, so that they can all contribute to achieving the objectives. This is done by creating mechanisms to share expectations, plan, define common objectives, and obtain a consensus so that the limited resources available for research are allocated and used efficiently. Participation also means allotting time to jointly carry out those shared PM&E activities at the institution.

To guarantee the implementation of planning, monitoring and evaluation, all actors should commit themselves. In addition, obtaining the expected products of PM&E requires that all internal actors fulfill their roles. For example, researchers should commit themselves to design and conduct the project in addition to providing progress and evaluative indicators. Managers must commit themselves to resource allocation, and directors to relevant decision making.

Therefore, PM&E should strengthen the coordination and participation of departments and units of an agricultural research institution. In this way,

the decisions and actions of the institution's planners, executors, and policymakers are formulated around common goals.

The participation principle favors information. Information can help an organization identify its constraints and potentials which in the transfer and generation of technology has different action levels.

Decentralization

Planning should cover not only the center but the immediate periphery of agricultural research.

Planning should attend to the needs of diverse stakeholders.

PM&E must be decentralized. Monitoring should be carried out very closely to those who conduct research, so that it can support and guide the plans. Evaluation should be conducted on site in order to be relevant to the local conditions.

Participation favors decentralization. Decentralization can help an organization identify constraints and potentials of the different action levels in technology transfer and generation.

PM&E Viewed as a System

Research institutions receive different types of inputs from diverse groups and organizations; for example: funding from the government; trained professionals from the universities; and machinery, fertilizers and other agrochemicals, and equipment from industry. Inputs can also be policy guidelines, information on sectorial and general development plans, and analyses about national and agricultural statistics. A wide range of national and international sectors therefore influence the performance of research institutions.

At the same time, research institutions produce a variety of outputs and products for these sectors and groups of society.

This relationship between the institution's socioeconomic context and its inputs and outputs obtained through knowledge- and technology-generating processes constitutes a general system.

Similarly, within the institution, the relationships between administration and management units, between research programs and projects, and between regional centers and headquarters form the institutional system.

This concept of an institution as a system, and as part of larger systems, is fundamental to the successful implementation of PM&E processes. To form an institutional development or research plan, institutions need information, human and other operative resources, and many decisions. If planning is adjusted to the system's organization and operation, both

internally and externally, there is a greater possibility that research will be conducted according to a plan that will deliver the expected activities and commitments. In that case, the evaluation of research results will have greater possibilities of contributing to the advancement of the institution and to the design of new plans.

Each of the components of the PM&E process uses various kinds of information to generate specific products. These in turn, become inputs of another component, and act as end products of plans, of monitoring and of evaluative activities of agricultural research.

Objectives, work plans, outcomes, and control indicators should be well defined in the planning process. These are necessary inputs so that monitoring can take place. Furthermore, the actions considered during planning (definition of objectives, resource allocation, etc.) and monitoring allow a program or project to be evaluated at any stage of its development.

Figure 5 shows the dimensions of (1) planning, monitoring, and evaluation, (2) their relationship with different institutional levels, and (3) the variables. Together they form an integrated PM&E system that proves useful to management aspects of agricultural research.

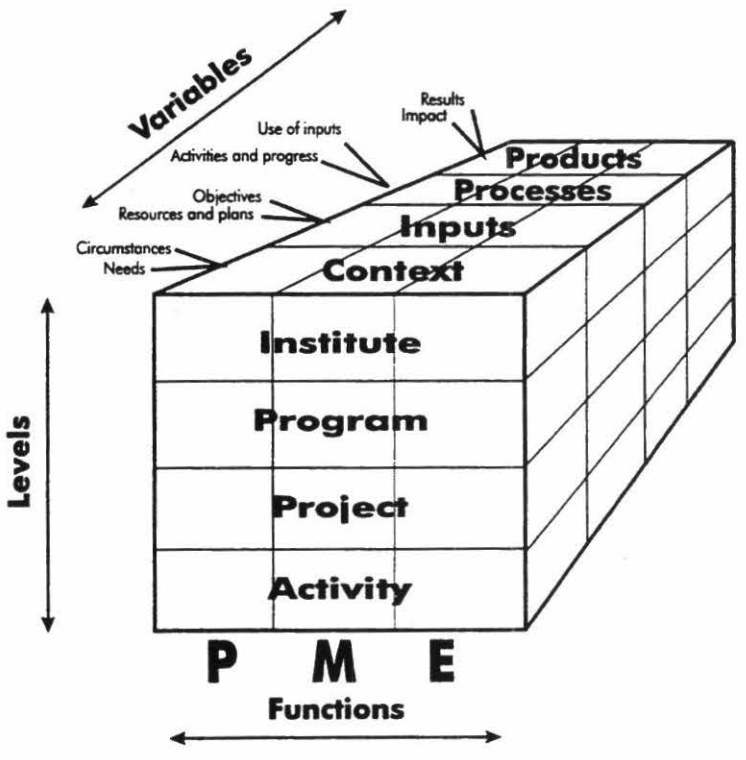


Figure 5. Components of a management system

At any of the decision-making levels, the circumstances and needs of the stakeholders—who, in principle, constitute the **context** of a research institution—should be taken into account when preparing a project. By analyzing this context, research objectives and approaches (inputs) can be selected.

These **processes** of technology generation and transfer move in successive stages. For management purpose, monitoring is required to analyze progress toward program, project, or institutional objectives.

Products—information, knowledge, and technologies—will result from research and transfer processes. An institution's performance can be determined by evaluating these processes and products, and establishing the planned objectives are being achieved.

In summary, PM&E functions allow upper- and middle-management to assess the **context**, **input**, **process**, and **product** variables that affect performance at the different institutional levels.

Client-centered vision

Modern, successful commercial and industrial enterprises are characterized by close links with their clientele. They direct their action toward the needs, demands and preferences of specific markets. They are companies that make products consumed by these markets, and nothing else.

Technology-producing enterprises, such as agricultural research institutions, must direct their product—information, knowledge, and technology—toward their specific clients and markets. These include agribusinesses, universities, commercial producers, small farmers, technical assistants, producers' associations, and policy makers and planners of agricultural development.

All those involved have their own specific needs according to their activities and to what they expect from research results. A PM&E system for research should consider the characteristics of clients and users, and therefore design plans, programs, and projects based on those needs and preferences.

Prevailing worldwide trends force research institutions to become **competitive,** so that these technologies are in tune with producers' expectations. A closer relationship with stakeholders is required, so that their needs can be incorporated into agricultural research priorities. PM&E allows demands for technology to be incorporated in the design of research plans and programs.

Therefore, the planning process should be based not only on the users' needs, but also on national and sectorial development models.

Managerial approach

The essential principles of management, are based mainly on the experiences and work of the private sector and commercial companies that produce and sell different types of goods and services. These principles have evolved over time. Nowadays, according to experts, the management approach consists basically of directing production units, whether small or complex, as competitive and efficient enterprises toward satisfying client needs and market demands. These enterprises must incorporate modern criteria such as participation, decentralization, strategic planning, flexibility, and ability to adapt to prevailing conditions in their specific environment, to their management repertoire.

For agricultural research institutions, the management approach means applying these management principles to institutions as **technological enterprises**. A basic requisite is that PM&E be adopted by the managers of research institutions. Directors, program and project leaders and researchers must understand that planning, monitoring, and evaluation are management and administrative tools on which they should use in their decision making and overall agricultural research.

The management approach can help research institutions transform from bureaucratic, subsidized, and perhaps inefficient, organizations into more competent and efficient enterprises that can compete in the large market of information, knowledge, and technological innovation at the regional, national, and international levels.

The management approach implies changing the mentality of researchers who focus solely on their projects and are isolated from stakeholders. It also brings about changes in programs and projects that are designed to satisfy only specific preferences. The management approach can change them to programs and projects with an enterprise approach, aimed at satisfying the demands of society, and in particular, the demands of farmer groups and organizations.

Institutionalization

PM&E must be structured to form a framework whose mechanisms and tools are homogeneous and sustainable. The purpose is to integrate research activities with factors that influence sustainability and standardize the methodology to accomplish the institution's short-, medium-, and long-term goals.

Integration and decentralization can lead to an institutionalized PM&E system if they are incorporated at all organizational and operational levels.

The institutionalization of PM&E means that these processes should become part of the policies, culture and life of the institutions, its staff, and its stakeholders. PM&E should be expressed in the policies, plans and programs and subsequently should have specific funding and resource allocations and be part of the operational activities of the research and technology transfer programs and projects.

Institutional Organization for PM&E

Research institutions have the necessary components to fulfill their basic functions, mission and objectives. They have specialized units responsible for upper management, financial resource management, personnel, station operations, and laboratories. These units respond to specialized functions that are a part of the overall organizational structure. Most agricultural research institutions in Latin America and the Caribbean have units assigned to the different components, functions or related PM&E issues. A few of them have planning and evaluation offices at the upper-management level; in these cases, PM&E has been defined as a basic institutional function, and therefore is given a place within the structure.

PM&E functions need to be performed at all levels within the organizational structure.

A formal PM&E unit with trained personnel and budget can help the institution adjust to the changing agricultural issues and support the decision-making at all levels.

Decision-making and implementation levels

Figure 6 shows some of the decision-making and implementation levels of agricultural research. The entire system is based on research projects and activities that are consolidated to form research programs. Experimental stations and institutes are found at higher levels within the organization, and, finally, one finds the national agricultural research system, formed by all public and private research and technology transfer institutions.

The importance of the above scheme lies in the relationship between the different decision-making and implementation levels involved in research. To design appropriate PM&E systems for agricultural research, institutions should consider not only the different organizational levels (from the most specific to the most general) but also the basic principles of integration, participation, decentralization, and user orientation.

An integrated PM&E system can guide the organization toward accomplishing its mission and also influence the social environment to which it belongs.

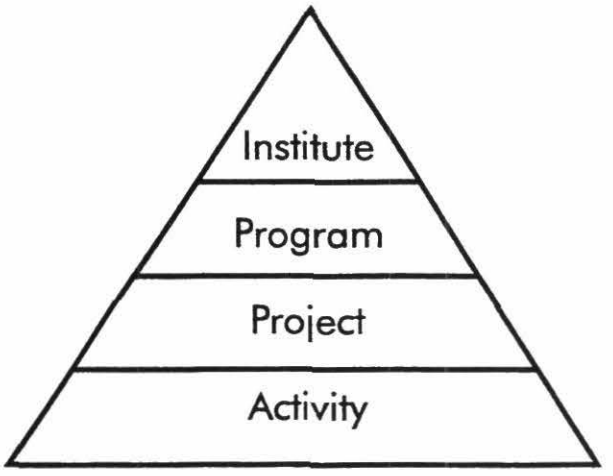


Figure 6. Example of decision-marking levels in an agricultural research organization

In effect, the interrelationships among the PM&E components at the different levels can help integrate an institution. The PM&E system of an institution should be designed considering these interrelationships and the aforementioned principles. Relationships imply **reciprocal influence** between each component and level, so that if they are not defined or fulfilled, the institution will lack articulation among its components and will be weakened.

Consequently, the **interrelationship** principle is so important that it should be considered as a key factor in designing planning, monitoring, and evaluation systems for research.

Exercise 1.1 Analysis of the Contributions of the Strategic Approach

Instructor's Guidelines

Objective

✔ Analyze the advantages of strategic management and determine its contribution to managing agricultural research institutions.

Required resources

- A photocopy of the document "The strategic approach to management" for each participant
- Overhead transparency of Table 3: Characteristics of the strategic management approach
- Other overhead transparencies
- Overhead projector
- Flip chart
- Markers
- Work sheet
- Blank paper

Time suggested for this exercise: 70 minutes

Instructions

- Make sure that participants use the elements indicated in Table 3.
- Write the following instructions for the exercise on the flip chart:
  - Reading of the document and answering Question 1 (20 minutes).
  - Group work to discuss and answer Question 2 (20 minutes).
  - The rapporteur of each group presents the group's conclusions in a plenary session. Maximum five minutes per presentation.
  - After the presentation, 10 minutes will be left for a general discussion lead by the instructor.

Exercise 1.1 Analysis of the Contributions of the Strategic Approach

Participants' Guidelines

- Read the document "The strategic approach to management."
- Write down your answer to Question 1, based on your experience, your knowledge of the institution you represent, and the guidelines provided in the document (20 minutes).
- Discuss with other group members the advantages of strategic management for agricultural research. Each participant will present his or her arguments and personal conclusions (25 minutes). Then write your answer to Question 2.
- With the members of your group, prepare a summary of the group's conclusions. You may use overhead transparencies or the flip chart for this purpose. This summary will be presented to the rest of all participants in a plenary session and should not take more than five minutes.
- Elect a rapporteur who will present the group's conclusions in the plenary session. Time will be left for a general discussion after all the presentations have been made (20 minutes).

Time suggested for this exercise: 70 minutes

Question 1 (to be answered individually)

Indicate which aspects of the strategic approach are currently being applied by managers in **your institution**. Briefly explain them.

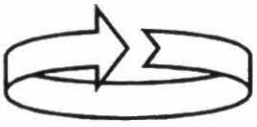
Question 2 (to be answered by the group)

What are the most relevant aspects of the strategic approach that could improve PM&E in **your institution**?

Exercise 1.1 Analysis of the Contributions of the Strategic Approach

Feedback

Question 1



- Group work helps participants compare their personal opinions about and experiences with the strategic approach applied to agricultural research institutions with those of other participants.
- The presentations and the plenary discussion help share the opinions of the different groups so that they can be analyzed by all participants, who, in turn, can compare the situation in their institutions with that of others.

Question 2

- Comment on the need to consider the issues affecting each institution.
- Seek medium- and long-term answers to problems.
- Intensify the search for alternatives depending on institutional needs.
- Set priorities for internal use of their institutions.
- Emphasize participation, increased creativity, and interdisciplinary activities.

Summary

This sequence outlines a strategic approach to agricultural research management. The sequence begins by referring to the origins of the strategic approach and highlights its concepts and main features. It refers to the role strategic management can play in agricultural research institutions to ensure institutional sustainability and mobilize human resources.

The first part of this sequence details the components of strategic management and how institutions can apply this approach, either comprehensively or simplified. Managerial elements for institutional change are explained. The principles of total quality are described. The importance of knowledge as a strategic factor in modern times is stressed.

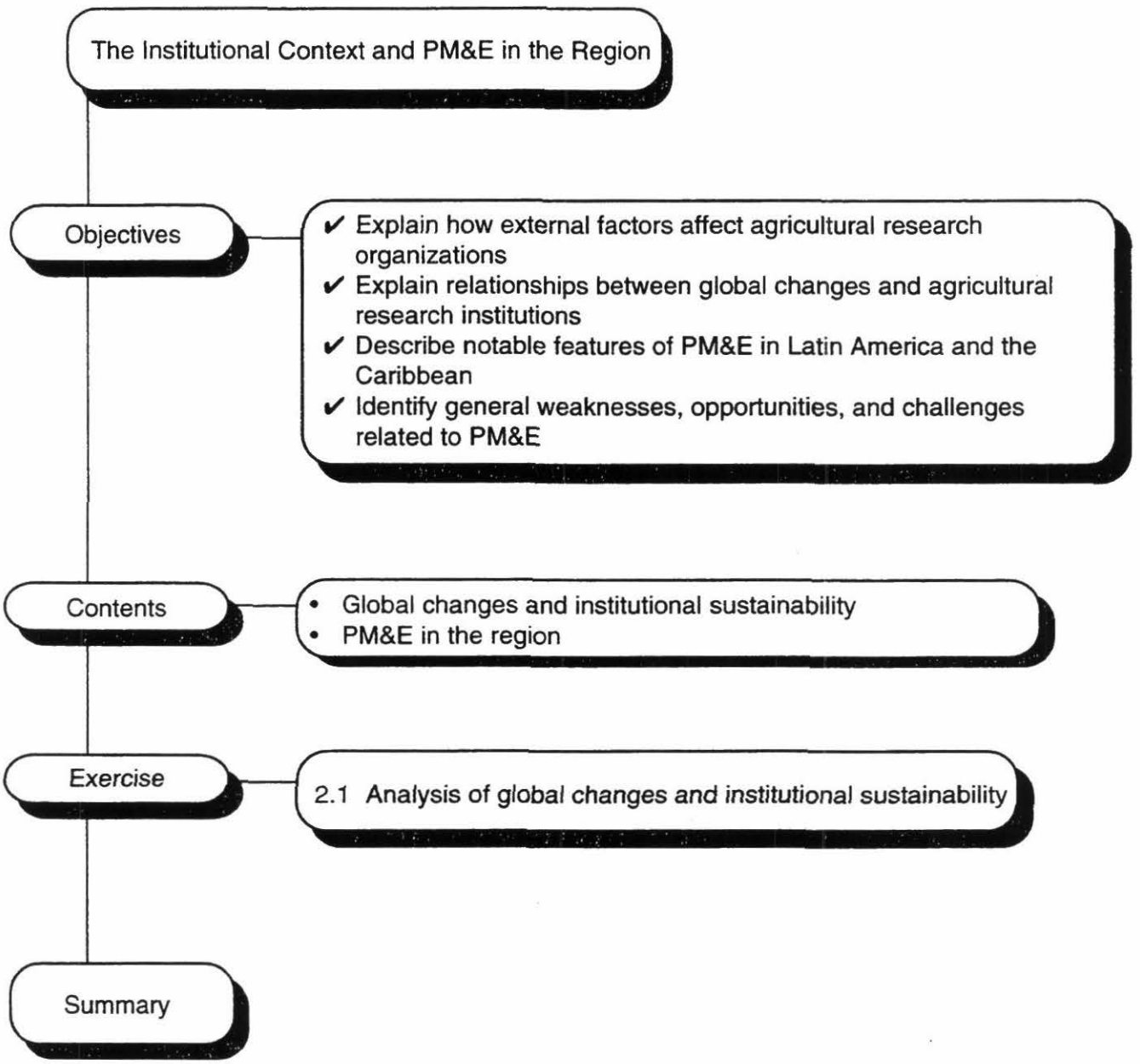
The second part of this sequence deals with the role of PM&E in strengthening agricultural research institutions, covering management, technical/financial negotiation, and political/institutional negotiation aspects. It shows how PM&E can serve as a tool to improve management.

The sequence presents guidelines to design a PM&E system for agricultural research institutions. Several basic definitions of planning, monitoring, and evaluation are provided, followed by a detailed description of principles and characteristics of an appropriate PM&E system. The topic ends with an analysis of the different decision-making and implementation levels at which research is carried out. The sequence stresses that PM&E should help integrate these levels.

Sequence 2. The Institutional Context and PM&E in the Region

Page

Flowchart for Sequence 2



Objectives of Sequence 2

Terminal Objectives

After completing this sequence participants will be able to:

- ✔ Explain how external factors affect agricultural research organizations
- ✔ Explain relationships between global changes and the status of agricultural research institutions

Specific Objectives

- ✔ Describe notable features of PM&E in Latin America and the Caribbean
- ✔ Identify general weaknesses, opportunities, and challenges related to PM&E

Global Changes and Institutional Sustainability

In the last decade of the 20th century, profound changes are occurring in many spheres. New realities are emerging from these changes which have serious implications for development models and for the institutions trying to implement them.

This sequence introduces several global changes and presents a hypothesis to explain the close relationship between institutional success and the rise and fall of development models.

General Trends

The world is constantly evolving. At times, these transformations are rapid and profound. They can upset approaches, models, and paradigms that guide social action. Today we are feeling the impact of such an historic moment.

Widespread political and socioeconomic turmoil is changing nations. Countries and institutions can no longer remain passive spectators of the emerging realities. At this point, we must all actively build our future. Some examples of changes that occurred during the 1990s:

- A sociopolitical revolution occurred worldwide: most dictatorships were overthrown. Totalitarian systems, whether in capitalist countries or socialist states, have proved to be socially, economically, and politically unviable. In a broader sense, this revolution suggests that all types of authoritarianism, even institutional authoritarianism, are unviable.
- Improved communication channels have contributed to the rapid globalization of relevant social issues. Previously, only specialists had access to certain types of information. Now, the general public is becoming increasingly aware of different issues through improved media channels, for the example the environment. There is global awareness of ecological topics, which has led to the evolution of a "sustainable development" approach with "sustainability" implications for all societies and institutions.
- Increased integration of the world economy has enhanced the interdependence among

Global changes

1. *Most dictatorships have been overthrown.*
2. *Communication channels have been improved, and social issues were globalized.*
3. *World economy was integrated, and the cooperation-competition paradox appeared.*
4. *Regional economic blocs have been formed.*
5. *The biorevolution strengthened the biological paradigm and weakened the chemical paradigm.*

nations, creating a cooperation-competition paradox. Within this new array of relationships, most countries are forced to cooperate with future competitors and compete with many future collaborators. This paradox significantly affects the type of relationship between different societies and different institutions.

- The United States may be the last hegemonic nation of modern history. It is now almost impossible for a nation to be the best in most development areas. This forces countries to form regional economic blocs, a survival strategy for a new world that is more competitive and interdependent. To succeed, nations must overcome cultural, political, and even ideological obstacles. These regional economic blocs will, no doubt, change the logic with which nations and their institutions formulate their national and international policies.
- Scientific advances in biotechnology are opening the doors to a "biorevolution," that can influence all productive activities and alter the genetic code of plants, animals, and even human beings. This "biorevolution" in agriculture reinforces the "biological paradox," while contributing to the gradual weakening of the "chemical paradox" associated with the Green Revolution.

These are just five examples of the many changes that are transforming the world and its institutions. Certainly the ongoing changes will affect the design of new national development models and, consequently, the design of new institutional paradigms.

Challenges for Agricultural Research

The changes occurring in the world affect agricultural research and development in different ways.

Regional economic blocs and new free trade agreements, such as the Caribbean Community and Common Market (CARICOM), the Group of Three (G-3) and the Group of Eight, the Andean Subregional Pact and MERCOSUR for southern Latin America, have opened trade between nations. This affects the conditions in which agricultural production is conducted and consequently the demands on agricultural research.

This new structure of regional relationships forces research and technology transfer institutions to adjust to the new demands for technological and agricultural products and raw materials.

An institutional paradigm is a broad concept that ***guides and influences the members of an organization*** *regarding:*

- *its* ***position*** *in relation to the external environment*
- *the set of* ***values and principles*** *shared by its members*
- *the* ***concepts, approaches, and premises*** *that guide the organization's activities*
- *the* ***perspectives*** *used to face challenges and problems*
- *the types of* ***commitments*** *with society that guide the organization's policies and priorities*

Some of the most significant changes related to the agricultural research are:

- The change in the **demand structure** for food and raw materials. The composition of the population is changing: fewer people work on farms, rural women are participating more in off-farm tasks and the number of agribusinesses is soaring. These changes affect the production of new goods for both the internal and external markets. For example, because of these changes in the market, new demands have been created for cut flowers, tropical house plants, and processed goods such as concentrated canned juices.
- The surging interest in the **sustainable use and protection** of natural resources, particularly in Latin America with its extraordinary biodiversity, is defining new areas of research that incorporate aspects like sustainability and equity into traditional approaches to agricultural production.
- The presence of **new actors** in technology transfer and generation calls for a new research plan. New actors include unions and other private agricultural organizations, national and multinational enterprises interested in technological developments for more trade possibilities, universities and nongovernmental organizations. New cooperation agreements between the public and private sectors expand this list. These new actors constitute a new structure of the **agricultural research market,** not only as providers of new developments but also as users of different technologies and information.
- New areas of science and knowledge have changed the **infrastructure** for research which was outlined only one or two decades ago. Access to new research tools through biotechnology, applied information science, and microelectronics has resulted in the use of new applications in agricultural research, in the proposal of new themes and research lines, and in the greater participation of organizations and persons previously not involved in research.

In a world where economic relationships between countries and regional blocs are changing, new developments like those above clearly show that research institutions must recognize the importance of the concept of **competitiveness**. New actors, a greater diversity of technology users, better access to the research infrastructure, and an open market to supply and demand research products, create a greater need for research institutions to become more competitive.

This points to the need for agricultural research institutions to search for new arrangements and organizational models, adapt the missions and objectives to the new conditions, redefine their directions and use new and more efficient managerial and administrative plans.

Rise and Fall of Development Models

Institutions emerge, grow, mature, and die just like biological organisms. Our hypothesis is that the success or failure of most institutions is closely related to the rise and fall of development models (de Souza, 1993).

Development is a product of human intervention. Its nature, process, and consequences will always be related to the nature, objectives, and organization of human actions. Society delegates governments to define development objectives, and finances the means to organize the institutional matrix responsible for transferring the most significant interventions that should benefit most of the population. The question is: How does development advance?

Development requires a "model" that guides the main actions of its main protagonists and institutions. All institutional development models encourage certain values, premises, and principles. These should be incorporated into the institutional matrix so that the development model fulfills its promise to solve environmental, social, economic, and political problems. These observations lead to the process shown in Figure 7.

The implementation stage begins after a "development model" has been established and the corresponding institutional matrix organized. All proposed actions are based on the model's values, premises, and principles.

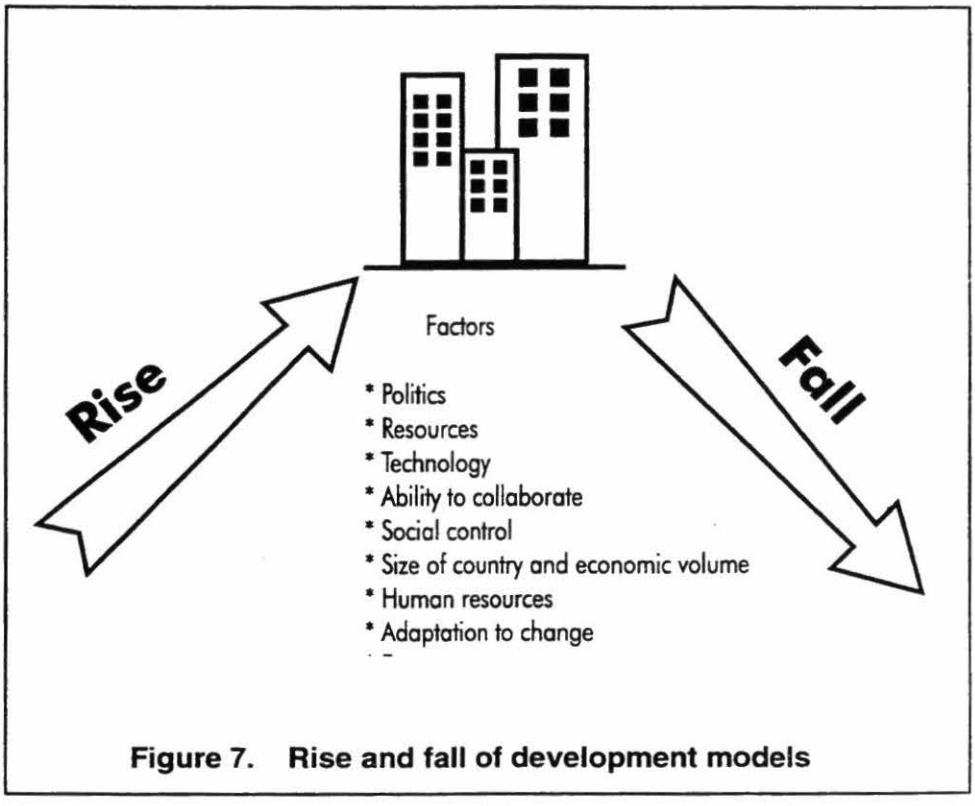


Figure 7. Rise and fall of development models

Eventually, however, some mandates proposed in the model will not be implemented. Problems arise that the model cannot solve. In other situations, the actions proposed by the model will have an impact contrary to what the model anticipated. Although these events are considered anomalies, they slowly undermine the development model.

The discontent thus generated by incapacity of development or institutional models to respond to changing events, pushes the academic, political, and social leadership into moments of **intense creativity**. New concepts, approaches, perspectives, and priorities are produced, giving rise to new models. Society, and its institutions, change accordingly.

Different sociopolitical groups begin criticizing these "anomalies." When these criticisms become widespread, the development model undergoes an irreversible "crisis," when most of the model's values, premises, and principles reach a turning point. The organizations using the model have incorporated many of its values, premises, and principles into their institutional paradigms. When a crisis threatens the model it also affects these organizations.

A growing, general discontent with the model causes a kind of nonviolent "revolution of sociopolitical thought." Intellectual, political, and social leaders debate the cause of the model's fall and how to develop a new, more suitable and precise model. Creativity is intense, and new concepts, approaches, perspectives, and priorities appear that help form the new development model. Alternative development models are discussed, and one of these models replaces the old one.

Once the new development model is established, a new institutional matrix is organized to make it viable. From the moment a development model enters into crisis until a new model is established, some institutions "perish." Many change "from the outside in;" only a few will actively generate their own transformation process.

In Brazil, for example, when the military government changed the country's development model in the late 1960s and early 1970s, several institutions disappeared, such as the Brazilian Association of Credit, Technical Assistance and Rural Extension (ABCAR), and the National Department of Agricultural Research (DNPEA). In the early 1990s, the national development model implemented by the military government collapsed. The country is now struggling to form a new model. With this current crisis, EMBRATER (the Brazilian Institute for Technical Assistance and Rural Extension) has disappeared, while EMBRAPA (the Brazilian Enterprise for Agricultural Research) has begun a successful process of institutional change.

This example illustrates the basis of the hypothesis posed at the beginning of this text: institutional success or failure is closely associated with the rise and fall of development models (de Souza, 1993).

We should realize, however, that institutional change and adjustments are exercises that institutions cannot make every year. Changes in society will affect the speed of the change of development paradigms, but they rarely occur in less than a decade. The analysis of institutional sustainability should therefore be conducted every five to 10 years.

The Impact of Change and New Management Approaches

Diverse types of organizations, such as businesses, public groups, universities and research institutions, are confronted with the new development paradigms. Some have met the challenge, or are on the right path and have modified their organizational structures, adopted new management approaches and redefined their mission and objectives. Only those organizations that have adapted rapidly to the new era, interpreting and adjusting to the new demands, can survive and continue to respond to the demands they receive.

The case of research institutions, is similar to those of other organizations. They should have already begun their adaptation to the new era. One way is the adoption of new management and administrative approaches to research and development and forging alliances with the institutions which promote it. The strategic approach to management as described in the previous sequence provides some criteria and guidelines for institutional change. One of them is the adoption and use of integrated systems of research planning, monitoring and evaluation (PM&E).

What is the status of research PM&E in Latin America and the Caribbean? What experience do the region's agricultural research institutions have in PM&E? What are their principal challenges? These are some of the questions that ISNAR/IDB sought to answer through 13 case studies of agricultural research institutions. The following section summarizes the project's principal results.

PM&E in the Region

Novoa and Horton (1994) describe the experiences of agricultural research institutions of six countries in South America, two in Central America, two in the Caribbean, two in North America and Mexico, with PM&E, "Planning, monitoring, and evaluation of agricultural research in the Americas: results of 13 case studies." This section summarizes their findings.

Background and Importance

The reports of the 13 case studies show that all the institutions studied carry out some sort of PM&E. All the entities are also interested in, and committed to, conducting formal and continuous PM&E activities or in strengthening ongoing ones.

Common Elements and Differences

Most of the institutions studied already have planning mechanisms such as medium-term plans, indicative planning by program and by commodity, regional planning, and procedures to select and prioritize research projects. The importance given to each mechanism varies among the institutions. **Institutional planning** and **agricultural research planning** are carried out at six main levels: strategic, indicative, medium-term operational, program operational, projects operational, and annual operational. **Strategic** and **participatory** planning are new in the region and have not been well developed.

Monitoring is used mainly to verify the progress of programs, projects, and experiments; the use of resources; and the fulfillment of medium-term goals. Monitoring focuses on the operational level of implementing plans and programs, and only occasionally verifies the overall performance of an institution. In some institutions, monitoring aims at gathering data on costs and other indicators of resource use for accounting or verifying purposes. Other indicators are used, such as the number of publications produced, when evaluating researchers' performance. In other cases, monitoring is used to coordinate or organize research efforts and activities into projects or programs that are productive and respond to institutional needs and established objectives.

Experience in **evaluation** is closely related to institutional characteristics, mandates, and fields of action. At larger institutions, the experience in

evaluation is richer and more diverse, and the progress in methods and procedures is greater. However, in nearly half of the organizations that the ISNAR/IDB project studied, evaluation is the weakest phase in the overall process of PM&E. As a research management tool, it is the least developed; evaluation is neither institutionalized nor objectively organized, and is indistinguishable from other components or processes.

Experiences, Methods and Tools

The case studies present various PM&E models. Some of the models are considered sophisticated, comprehensive, strategic, bureaucratic, or successful, depending on the specific circumstances. In other cases, the institutions are beginning to test new approaches, looking for different forms of PM&E and adapting them to their own circumstances. The relative size of the institutions and their resources, as well as the specialization of their functions, is related to their practices and experiences in evaluation issues.

Practically all institutions monitor their plans and programs sometime during their development. However, significantly less expertise and fewer mechanisms, procedures, and resources are allocated to monitoring than to planning. Monitoring activities focus on the operational level of implementing plans and programs and, occasionally, assess the overall performance of the institution.

Most of the monitoring methods and tools used are informal and time consuming for the researchers and the middle management, and only partly systematized. Field trips and research reports are most frequently used. Databases, written reports, and budget monitoring are used at the project and program levels.

Internal and external reviews and impact assessment studies are the main types of evaluation. Evaluation is carried out at seven levels: overall research system, institutional, program, organizational unit, research and technology transfer projects, research activity, and research personnel.

Throughout the region, institutions use, with varying emphasis and success, practically every evaluation method, procedure, and tool reported in the literature. Projects frequently undergo external reviews; institutions, research centers, and research programs to a lesser extent. Research programs and centers are submitted to internal reviews. These are rare at the institutional level. Impact assessment is infrequently used. These studies evaluate the economic impact of projects within the programs. Impact assessment usually obeys an external demand that the institution or program validate the results obtained and account for resource allocation.

Challenges and Perspectives

Most institutions lack an integrated framework for PM&E to aid in deciding what should be evaluated, why, and how. Such a frame of reference should include explicit objectives, and defined information needs and data sources.

In most countries, the private sector is increasing its participation in agricultural research. Institutions tend to consider more and more the market conditions of commodities and technologies. Most institutions now allow the private sector to participate in their processes and decisions. They also are developing different tools to improve the accountability of their activities.

External reviews are expected to link the different sectors that influence the research that the institutions conduct. They also help define alternative areas of activity and encourage necessary changes. In several cases, external reviews have encouraged institutions to implement strategic planning or integrated medium- or long-term planning.

Participation and decentralization. Countries in the region show a growing trend toward administrative decentralization, regionalization of activities, and greater participation of different sectors and clients. This affects institutional planning processes.

Participation and decentralization are required if (1) designing and implementing institutional PM&E is to be managed efficiently, and if (2) PM&E is to be applied at all institutional levels.

On the other hand, the emphasis on participatory planning is especially relevant to the relationships between the institutions and their clients. This participation, however, is hindered by the close relationship that institutions have with producers, other clients benefiting from research, and funding agents who do not always understand the nature of research, particularly when the immediate problems do not directly affect them or their interests.

It is therefore useful to involve clients in all phases of PM&E, both at the institutional and research levels. Institutions can thus facilitate the accountability of resource investment and research results to donors and sponsors while enhancing their recognition and prestige. Participation is even more important when the organization orients its activities toward end users and responds to their needs and expectations.

PM&E in research management. Directors of research centers, specialists in organizational development, politicians, and agricultural development planners in Latin America agree that management and administrative principles and mechanisms, such as planning, monitoring, and evaluation, are important for institutional modernization.

Planning, monitoring, and evaluation are key elements in the management of research institutions, but their successful implementation greatly depends on the mechanisms and tools used.

In the future, agricultural research institutions will consider the design and adoption of PM&E methods and mechanisms as a normal part of their activities. On the other hand, resources, the size of the institution and the type of services it offers, the range of clientele, and the complexity of its activities determine the type of management and the PM&E procedures that an institution can adopt.

Methodological autonomy. The PM&E processes developed by agricultural research institutions have several weak points. The most widespread faults are the variability found in PM&E units among different institutions, the loose definition of a PM&E unit, conceptual and methodological constraints, limited qualified personnel, immediate demands from external groups, frequent changes in the institution's political environment, and the high costs of some PM&E activities. Also, institutions have a limited capacity to prepare plans, to involve users in priority setting, to anticipate changes in the socioeconomic context of the institutions, and to relate, in effective terms, the medium-term planning to annual programming and budget planning.

To improve future applications of an integrated PM&E process and to correct the most significant weaknesses mentioned above, the internal and external credibility of institutional PM&E activities must be improved. To do so, institutions need to enhance their methodological capacities, transparency, user participation, and flexibility.

Institutions need to increase their capacity and autonomy to develop their own frame of reference and to develop the PM&E methods and procedures that will satisfy institutional needs, mandates, resources and possibilities.

PM&E as a learning process. PM&E activities should be part of a permanent institutional learning process that involves the entire organization. Institutions can nurture the ability to conduct these activities if they use their experience in learning more about PM&E and disseminate this information to others, while innovating and improving the PM&E process and its applications. Staff should be in a continuous learning process to gain experience in PM&E.

Every institution needs to develop the capacity to interpret the main needs of PM&E, and to design and develop a PM&E system that will improve institutional management.

It is important to learn from major experiences, but we should not overlook the simple experiences. For example, some institutions adopt simple, practical approaches when working directly with farmers; these approaches include the use of participatory strategies that are relevant to local circumstances. Many institutions have shown interest in incorporating these approaches into their sometimes complex approaches to field work.

Exercise 2.1 Analysis of Global Changes and Institutional Sustainability

Guidelines for the Instructor

Objective

✔ Analyze the impact of global changes on the sustainability of agricultural research institutions.

Required materials

- Reading material "Global changes and institutional sustainability"
- Overhead transparencies
- Flip chart
- Markers
- Work sheet

Time suggested for this exercise: 30 minutes

Instructions

- Inform the participants that the exercise has two parts. The participants reflect on the topic individually during the first 10 minutes, and then work in groups for 20 minutes.
- Explain that each group should produce a series of conclusions which relate to major agreements and disagreements, based on the information each participant has on his or her own institution.
- Make sure that each participant has a copy of the reading material. Give a copy to anyone who doesn't have one.

Exercise 2.1 Analysis of Global Changes and Institutional Sustainability

Participants' Guidelines

Objective

✔ Analyze the impact of global changes on the sustainability of agricultural research institutions.

Instructions

- With the other members of your group, appoint a moderator and a rapporteur.
- Analyze the sequence of this module titled "Global changes and institutional sustainability" and respond to the three items at the end of this work sheet. Each answer should be no longer than half a page.
- Take notes and comment on the global changes that you know about and consider important for the sustainability of your institution.
- Share and discuss your conclusions with other group members; participate in the group discussions and help prepare the group's conclusions.
- The group moderator should direct the discussion so the group can prepare a collective answer to the questions.
- With the other members of your group, help illustrate the results of the discussion using overheads or flip charts.
- The group rapporteur presents the group's conclusions in a plenary session.

Time suggested for group work: 20 minutes.

Question 1

Mention several global changes that *could* affect the sustainability or the future of your institution, or both.

Question 2

Explain *how* the global changes indicated in Question 1 affect your institution.

Question 3

Explain the role that PM&E can play in institutional sustainability (in your specific case) in view of the global changes that affect your institution.

Time suggested for individual work: 10 minutes

Exercise 2.1 Analysis of Global Changes and Institutional Sustainability

Feedback

During the discussion, you must make sure that the participants discuss the relationships between the global changes and the sustainability of their own agricultural research institutions. They should also refer to the differences and similarities to other institutions in the region.

For question 1

Participants have been able to analyze some of the issues addressed in the text and the implications these issues may have for their institutions. For example, the process of opening the economies of Latin American and the Caribbean countries, and their respective incorporation into the world economy, affect their institutions because countries lose their relative autonomy. External political and economic forces increasingly influence their policy-making and their development strategies. This process demands a proper interrelationship between all sectors of the economy and, within the agricultural sector, specifically between input production and commercialization and product transformation, distribution, and commercialization.

The agricultural sector faces many challenges, risks, and opportunities as (1) its production structures are being transformed during the integration process and (2) as it assumes its new role in the world economy. Agricultural research institutions must adjust to these trends if they want to satisfy the demands that an open economy places on research.

For question 2

Examples given should cover (a) institutional restructuring processes, (b) new orientations of programs and projects resulting from the changes in the national economic development policy, and the implications of economic policy on agricultural policies, and (c) new approaches to scientific and technological development.

For question 3

Answers should relate the PM&E processes to the new approaches to research institution management. Mention should be made of how PM&E can help identify new opportunities and challenges, in addition to organizing institutional activities into medium- and long-term plans and projects that respond to these challenges.

Comments on this topic are expected: monitoring and evaluation can help institutions link their work to their surrounding social and economic environment, if their research results satisfy the needs of clients, beneficiaries, end users, and partners of agricultural research, considered as a **technological enterprise.**

Summary

This sequence presents the general concept of PM&E in research, in the light of changes occurring worldwide and the status of agricultural research in Latin America and the Caribbean. It serves as an introduction to the content of Sequence 3.

This sequence attempts to answer two questions: What implications will ongoing global changes have for institutions in general, and for agricultural research institutions in particular? What is the current conceptual, institutional, and methodological status of PM&E in the region?

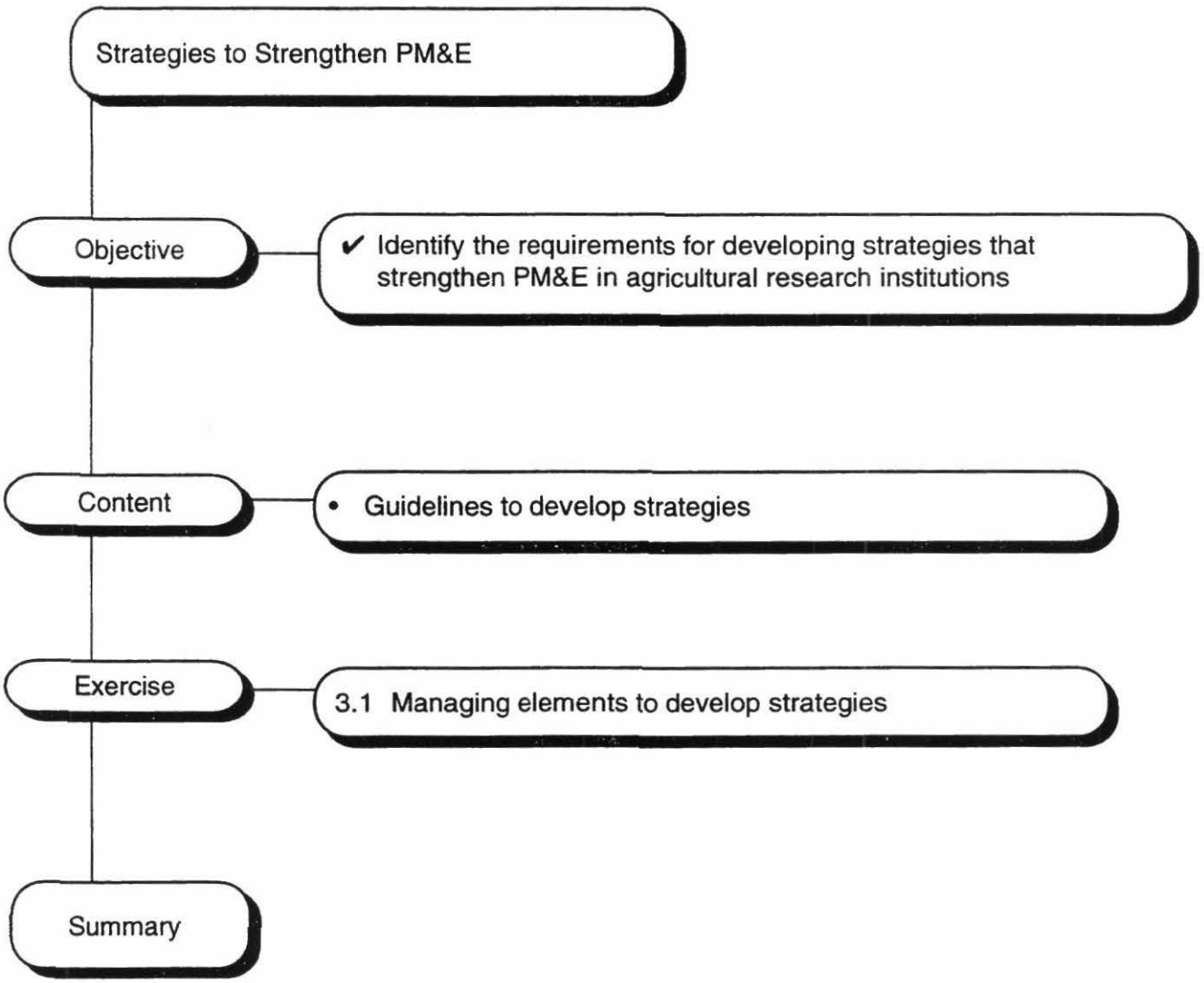
To answer the first question, participants are introduced to the topic by a document on global changes that can affect national development models and therefore influence institutional paradigms. The text presents a hypothesis that relates the success and failure of institutions with the rise and fall of development models.

To answer the second question, a text summarizing the status of PM&E in the region is presented. Major aspects covered include background, importance, common elements and differences, methodological differences and experiences, challenges, and perspectives.

Sequence 3. Strategies to Strengthen PM&E

Page

Flowchart for Sequence 3



Objective of Sequence 3

After completing this sequence participants will be able to:

- ✔ Identify the requirements for developing strategies that strengthen PM&E in agricultural research institutions.

Guidelines for Developing Strategies

To define and develop a strategy you must consider its concepts, elements and methodologies.

Strategy is a logical combination of actors, factors and actions, selected from several alternatives, to achieve a given objective and consider a set of surrounding conditions. These conditions are usually out of control of the actors who want to achieve the objective.

Thus, a strategy requires **a logical combination of steps.** It is necessary to analyze the context in order to identify the opportunities and threats, and also to identify weak and strong aspects in order to define objectives and action.

One of the most important factors for the success of a strategy success is the presence of a "strategic intention" of those who want to achieve the objective and have the decision-making power to do so.

A "strategic intention" is the best combination of the following components: a future **vision** of the desired objective, the **conviction** that it is important to achieve it, the **will** to achieve it in the best possible way, the political **decision** to begin and support the strategy, and the **courage** to assume the risks implicit in any strategy. Without a "strategic intention," even the best strategies will probably fail.

Without the explicit commitment and the direct participation of the decision makers, almost any strategy has little chance of success.

Components of a Strategy

In developing a strategy, you must consider four elements (Figure 8).

Actors. Identify whether the actors involved are internal or external to the institution, or both and which of them have the potential to **support**, to **oppose**, or to be **indifferent** to the objective. You must plan actions supported by different sets of arguments for each group of actors. Ideally, these groups should use a participatory methodology for motivation. Likewise, if a political decision is made to exclude opposing groups, **do not ignore their existence**. They can confuse, limit, or impede the attainment of the objective.

Factors. You should identify various available and potential factors to be included in the development of the strategy. You must recognize the relevant factors, how many there are, where they are, who controls them, who knows how to use them, when to use them, and what internal limitations to their use exist.

Actions. A strategy needs a number of specific initiatives so that its different components can be implemented. Always plan these actions in connection with the other elements of the strategy.

The context. Every objective exists within a context. **Its achievement depends on the conditions within the context.** Since it's impossible to identify all the conditions, you must find the most significant ones and incorporate them in the strategy development. The conditions that make up the context can be more or less favorable achieving the objective. Thus, the **perception of the context** is important in guiding the development of the strategy.

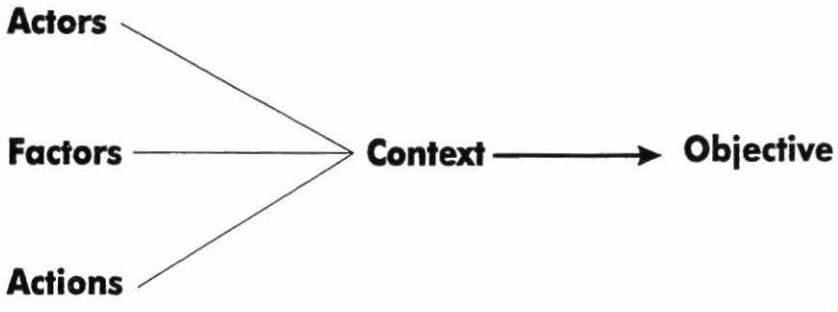


Figure 8. The combination of components to develop strategies

Methodology

One way or another, we are always developing and conducting strategies. Generally we do this unconsciously and unsystematically. Unfortunately, there is no fixed method or magic way to develop strategies.

This is one of the reasons that explain the lack of agreement among "strategists" about the best definition of a strategy. Famous strategists agree that **the objective** to be achieved is the most important reference point for defining the logical steps to follow. This gives **the most intelligent combination** of actors, factors, and actions for the strategy.

Developing a strategy entails uncertainty; it requires intensive use of information, intelligence, and creativity.

This has three implications: *first*, an infinite number of possibilities exist for achieving an objective, and thus, for **alternative strategies**; *second*, when different institutions in different contexts pursue the same objective, they will no doubt use different strategies, although some of them may be very similar; *third*, there is always more than one combination of actors, factors, and actions to achieve an objective, so selection of a strategy is always the result of a **political decision**.

By "logical combination" or "intelligent combination", we mean one that is the most appropriate, timely, and has the best combination of possible actors, factors, and actions to achieve an objective in a given context

In this context, the only methodological reference to develop strategies is the objective to be obtained. The rest of the process is an intensive activity incorporating intelligence, information, and creativity.

How can an objective contribute to the strategy development? The first and most decisive step in developing a strategy is to discuss and clearly define the desired objective.

Poorly defined of objectives have led to the failure of many strategies. Poor objective formulation makes it difficult to perceive the context, the most relevant factors to be used, the most critical limitations to be overcome, or the most strategic actors to be considered.

In defining the objective of a strategy eleven questions must be answered (Table 7).

General Considerations

Generally, a strategy suggests change; initiating a strategy means recognizing its value among other alternatives, and the possibility of its success.

Those who plan and implement a strategy must be motivated to act strategically toward achieving the desired objective. Lack of precision in defining the objective and lack of commitment of the decision makers have caused many strategies to fail.

Table 7. Questions that must be answered when defining objectives

	Questions	Justification
1.	What are the most critical external factors, positive or negative, for defining the objective?	Most objectives are affected by factors beyond your control. It is necessary to consolidate your own interests with external expectations.
2	What price are you willing to pay to achieve the objective?	Achieving any objective has a **price.**
3	What are the critical limits of those interested in achieving the objective?	Certain **limits** cannot be passed.
4	What small concessions can you offer from the beginning as a proof of good will to get the necessary support?	You can make some small **concessions without compromising** the general objective.
5	Which concessions are you willing to make in the most critical moment of negotiation to obtain your objective?	Often you must make major concessions to obtain an objective.
6	What are the time restrictions for achieving the objective?	Every objective requires **time** to be achieved.
7	What are the most critical external factors, positive or negative, for achieving the objective?	**External factors** beyond the control of those interested affect most objectives.
8	What critical questions can the opposition present, and what would be the logic for answering them?	Every objective generates **questions**, usually from the opposition.
9	Who are the most important actors in relation to the proposed objective?	There are several **actors** related to the process of obtaining an objective.
10	What is the best way to begin the strategy, causing the best initial impact?	There are **many ways** of beginning a strategy.
11	What actions could other actors initiate, and how can we neutralize those actions?	Like a chess game, other **actors** interested in obtaining the objective may begin actions that affect the strategy's development.

Adapted from Fuller, G. 1993. Estratégias do negociador. Sao Paulo: Livros Técnicos e Científicos.

Exercise 3.1 Managing Elements to Develop Strategies

Instructor's Guidelines

Objective

✔ Establish logical steps of a strategy to improve PM&E in the agricultural research institution where the participants work, using the guidelines in this sequence.

Required materials

- Photocopies of Sequence 3
- Appendix 9
- Blank transparencies
- Flip chart
- Markers

Suggested time for this exercise: 90 minutes

Instructions

- Work in groups so the participants can reflect on Question 1 and prepare general conclusions about two objectives: strengthening and institutionalizing PM&E in agricultural research institutions (time: 15 minutes).
- A plenary session will be held to share and analyze the contributions of each work group. Ask each rapporteur to present the ideas. In this session, take notes of concepts and key works used, and prepare an overhead transparency with the points derived from each group's presentation (time: 15 minutes).
- Give each participant a photocopy of the transparency you prepared, and ask them to answer Question 2 individually, referring to the institution in which each participant works (time: 30 minutes).
- Choose a person from each group to summarize the group's conclusions in the plenary.

Organize the plenary session so that each of the four rapporteurs can report on the group's conclusions in five minutes at most (time: 20 minutes). Later, the others can make observations and give comments, with a suggested time of 10 minutes.

Exercise 3.1 Managing Elements to Develop Strategies

Participants' Guidelines

Objectives

✔ Establish logical steps of a strategy to improve PM&E in the agricultural research institution where the participants work, using the guidelines in this sequence.

Instructions

- Elect a moderator and a rapporteur within your group.
- Consider Question 1, and propose three main objectives for a strategy to strengthen and institutionalize PM&E in agricultural research institutions (time for group work: 15 minutes).
- Each rapporteur will have five minutes to present the group's contributions in a plenary session.
- Answer Question 2, considering the conclusions of the plenary session and your own knowledge and experience. Remember that you may be asked to present your results in the next plenary, so you should prepare a resume on a transparency or a flip chart (individual work time, 30 minutes).

Suggested time for this exercise: 90 minutes

Question 1 (to be answered in groups)

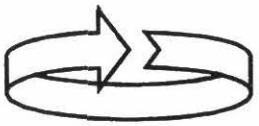
Develop two major objectives for a strategy that will strengthen the process of PM&E in agricultural research institutions, taking into account the information presented in the previous sequences of this module about the status of PM&E in Latin America and the Caribbean.

Question 2 (to be answered individually)

List the elements that you must consider to define the objectives of a strategy to strengthen PM&E in your institution, given the analysis of the previous sequence.

Exercise 3.1 Managing Elements to Develop Strategies

Feedback



There will be two types of feedback from the comments and observations of the participants in the plenary sessions. First, the reactions to the presentations resulting from the group work, and second, the reactions to the individual presentations.

Some possible responses to the two questions:

For question 1

Using the information given in this sequence, and as a result of group brainstorming, the participants should mention the general context of their agricultural research institutions, as well as the main actors and factors to keep in mind when organizing a strategy to strengthen the PM&E process and begin its institutionalization.

Therefore, any mention of objectives that include the elements of a strategy will be acceptable.

For question 2

The answers should refer to the context of the institution in which the participant works. Answers that mention factors, actors, and questions to be considered when defining an objective will be acceptable. Questions such as these are relevant: the price one is willing to pay to achieve the objective, the limits, the concessions one can make, the time to achieve the objective, and the different ways of starting the strategy to achieve the

Summary

This sequence offers conceptual and methodological guidelines for developing strategies. These can be used to strengthen management including PM&E.

This sequence begins by establishing what a strategy is, and what it needs to be considered successful. It emphasizes the importance of a "strategic intention," the acceptance of an explicit commitment and direct participation. These are basic attitudes for those who want to achieve an objective and have the authority to do so.

After presenting these basic ideas, the sequence presents four basic elements to consider in the definition of a strategy and its objective: the actors, the factors, the actions, and the institutional context. A diagram shows the proper combination of these elements to develop a strategy.

Some methodological issues for development of strategies are presented in the second part of the sequence, especially the importance of defining the objectives correctly. The importance of the objectives as motivation and a source of inspiration in strategy development is analyzed briefly. A table shows eleven basic questions and their justification to incite thought in the essential factors to keep in mind when defining an objective.

This is the final sequence of Module 1. The participants are ready for the following modules. They will delve deeper into the fundamentals of strategic planning, monitoring, and evaluation in agricultural research institutions. They will select the methodological tools for managing these activities. These activities should be considered from a strategic approach, and practiced as part of an integral process.

Appendices

Appendix 1 Information about Participants

Instructions

Please fill out this questionnaire at the beginning of the course to share with your colleagues some personal and professional information as well as the expectations you have for the course. Prepare your answers according to the guidelines that your instructor gives you.

Items

1. What is your name? _____
2. What is the highest academic degree you have? _____
3. Do you have a specialty? In what area? _____
4. What experience do you have as an agricultural research manager? _____
5. What is your current position? _____
6. In which institution do you work? _____
7. How many years have you worked there? _____
8. Can you tell us something about your personal and family life? _____

   _____
9. What do you hope to achieve in this course? _____

   _____

Appendix 2 Posttest

Guidelines for the Instructor

After finishing this module, give the posttest. Its purpose is to inform the participants to what extent they have achieved their objectives.

After the participants have finished the test, give them some feedback, offering alternative answers to the question. Each participant can compare these with his or her answers. Then lead a discussion on the participants' answers.

Finally, participants will compare the results of their pretest with the results of thier posttest; in this way they can assess what they have learned in this module.

Remember that this a informative test, whose purpose is not to grade the participants, but to give them the opportunity to affirm the knowledge gained and clarify any doubts they might have.

Posttest

Participants' Guidelines

Below you find a series of questions related to topics we have studied in this module. **The instructor will not score this test**. You will evaluate your own answers, which will show you to what extent you have fulfilled your proposed objectives, and estimate how much you have advanced in the topic.

Date: _____

1. Briefly explain how the organization of regional economic blocs (for example, MERCOSUR, NAFTA), affect agricultural research institutions.

   _____

   _____

   _____

2. Suggest how your institution can use PM&E in internal decision-making and fund raising.

   _____

   _____

   _____

   _____

   _____

3. The summary of the case studies reveals some weaknessess of PM&E in the agricultural research institutions of the region. In your opinion, which weakness is most critical? Justify your answer.

   _____

   _____

   _____

4. Summarize the basics of a well-integrated system of PM&E in an agricultural research institution.

_____

_____

_____

5. If you had to define a plan for improving PM&E in your institution, what steps would you follow? Describe them briefly.

_____

_____

_____

_____

Appendix 3 Feedback for the Posttest

Instructor's Guidelines

After finishing the posttest:

- Give some possible answers.
- Let the participants compare their answers with yours and with those of other participants.
- Discuss the answers briefly.

For Question 1

The following answers for each question are useful to check whether the participants' answers are within the context of the questions.

Some of the following aspects, which can be negative or positive for agricultural research institutions, should be covered:

- Formulation of scientific and technology policies which take into account the policy of other sectors of the economies of member counties in the same bloc
- The possibility of generating transnational policies for science and technology among the counties in a bloc
- The possibility of strengthening cooperation considering the comparative advantages of the agricultural research institutes of the countries in a bloc
- The monopoly of scientific and technological knowledge make it difficult to communicate and interrelate among the countries in one bloc

For Question 2

Any example in which they use the concepts of PM&E as management tools for technical, scientific, political, institutional, or financial negotiation in the agricultural research institutes.

For Question 3

These answers should point out any of the following weaknesses:

- methodological and conceptual weakness for PM&E in the institutions, or lack of a frame of reference
- lack of participation and little decentralization
- inadequate information systems
- inadequate capacity to anticipate changes in the socio-economic context of the institution and to fit the plans within the sectoral policies
- lack of relationship between medium-term planning and annual budget programming
- lack of trained personnel for carrying out PM&E

For Question 4

Answers should include:

- **Principles** such as integration, institutionalization, participation, user orientation, decentralization, and systems approach
- **Characteristics** such as integration of the PM&E components; so that it becomes an institutionalized process that is participatory, with decentralized management mechanisms.

For Question 5

It is important that the participant present any logical combination of factors, actors, and actions to reach the objective, using a participatory methodology. The following steps give an example:

- Diagnosis of the present situation through interviews with different actors, both internal and external, and at different levels
- Formulation of a preliminary proposal to strengthen PM&E, based on the diagnosis
- Sending the proposal to all the interviewed actors, so that critical analysis and suggestions can be collected
- Integrating the suggestions and criticisms
- Formulation of a second version of the proposal
- Discussion of the second version with selected actors among those involved in the process
- Incorporation of the suggestions to obtain a new version of the proposal
- Presentation of the final version of the proposal to the top management for their approval
- Design of a plan of dissemination and implementation for the proposal

Appendix 4 Evaluation of the Instructor´s Performance

To be answered by each participant

Date: _____

Name of the instructor: _____

Topic(s) covered: _____

Instructions

This questionnaire aims to evaluate the performance of the trainer. Please put an "X" in front of each one of the phrases you feel describes the instructor's performance.

Put an "X" in the "YES" column when you are sure the instructor's performance fits the description given; in other words, the instructor did what is specified in the phrase.

Put an "X" in the "NO" column if you did not observe this behavior. Leave the space blank if you are unable to observe said behavior.

Do not sign the questionnaire. In this way, we hope you will feel free to express your opinion.

1. Organization and clarity

The instructor...

		YES	NO
1.1	Presented the objectives of the activity	❑	❑
1.2	Explained the methodology to follow in the activity	❑	❑
1.3	Respected stipulated time limits	❑	❑
1.4	Provided written material on the presentation	❑	❑
1.5	Followed a clear order during the presentation	❑	❑
1.6	Summarized fundamental aspects of the topic covered	❑	❑
1.7	Spoke clearly, using an appropriate tone	❑	❑
1.8	Used teaching aids that made topic easier to understand	❑	❑
1.9	Presented enough information to facilitate learning	❑	❑

2. Knowledge of subject matter
The instructor...

2.10	Seemed sure of the information presented	❑	❑
2.11	Adequately answered the questions the audience asked	❑	❑
2.12	Gave updated bibliographic references	❑	❑
2.13	Related the theoretical aspects of the topic with practical applications	❑	❑
2.14	Gave examples that illustrated the topics presented	❑	❑
2.15	Centered the audience's attention on the most important aspects of the topic	❑	❑

3. Interaction skills
The instructor...

3.16	Established a rapport with the participants	❑	❑
3.17	Used a language level that was appropriate for the audience's level of knowledge	❑	❑
3.18	Inspired confidence so participants would ask questions	❑	❑
3.19	Was interested in the group's learning	❑	❑
3.20	Established eye contact with the audience	❑	❑
3.21	Asked questions to the participants	❑	❑
3.22	Invited the participants to ask questions	❑	❑
3.23	Provided immediate feedback to participants' questions	❑	❑
3.24	Showed interest in the topic covered	❑	❑
3.25	Kept the audience's interventions from diverging from the topic	❑	❑

4. Guidance of exercises (workshop, classroom)
The person in charge of conducting the exercises...

4.26	Explained the objectives of the exercise	❑	❑
4.27	Selected/organized an adequate location for the exercise	❑	❑
4.28	Organized the audience so all could participate	❑	❑
4.29	Explained and/or indicated how to carry out the exercise	❑	❑
4.30	Had all the demonstrative materials and/or necessary equipment on hand	❑	❑
4.31	Provided the participants with the necessary materials and/or equipment to carry out the exercises	❑	❑
4.32	Handed out exercise instructions	❑	❑
4.33	Carefully supervised the exercise	❑	❑
4.34	Gave the participants the opportunity to practice what they were supposed to learn	❑	❑

Appendix 5 Guide for Presenting Reports on Instructor's Performance

Instructions

The questionnaire for evaluating instructor's performance has a total of 34 items pertaining to four aspects on which good training is based. Instructors interested in improving their performance should ask trainees to fill out a form like this one.

Following is a sample page that the instructor or course coordinator can use to record the data obtained in the instructor evaluation form.

Ten participants is a good sample for an evaluation. A large group, for example of 30 participants, can be divided in three subgroups to evaluate three instructors. In this case, we will assume that the form has been distributed to 10 participants in a course to evaluate one of the instructors. If the instructor did all the items listed in the form, according to the participants, the total points for each category would be:

1.	Organization and clarity	90 points (9 items x 10 participants)
2.	Knowledge of theme	60 points (6 items x 10 participants)
3.	Interaction skills	100 points (10 items x 10 participants)
4.	Direction of practice	90 points (9 items x 10 participants)

But very few instructors will earn a perfect score; most likely they will have some weaknesses in some of the categories.

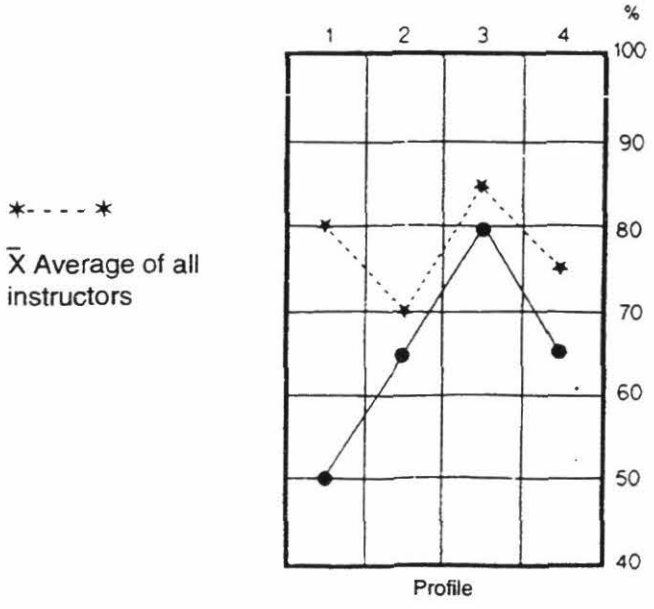
To calculate a score, follow this procedure:

1. Each positive answer is assigned one point. NO answers and blank answers are not counted. **Only YES answers are counted.**
2. Item by item, process all the information from the questionnaires.
3. Next, add and total the points for each box. Put the sum of the boxes of the same category (i.e. organization and clarity) in the central column of the grid labeled *No. of points* (See page A-12). In the column headed by "100%," write down the score that would be obtained if all participants had answered YES for all items. The relation between 100% and the score by the instructor establishes the instructor's percentage. For example, if 100% of the answers of 10 participants in the "organization and clarity" category is 90 and the observed score for an instructor is 45, in the column %, we would write that the observed score is 50%.

4. The central column can show data like the following:

100%	No. puntos	%
90	45	50
60	40	67
100	80	80
90	60	67

5. In the grid below, we can graph the information we have obtained for a particular instructor. We can also indicate, with a dotted (or red) line, the average scores of other instructors in the same training event.



This profile would indicate that the instructor has a better performance in "ability to interact" and that his major weakness is in "organization and clarity." It would also indicate that in the four areas evaluated, his/her percentage is lower than the average for the remaining instructors in the same event.

6. The course coordinator can write comments and send the report confidentially to each instructor, to inform him/her of his/her strengths, and the areas in which he needs to make an extra effort to improve his performance as an instructor.

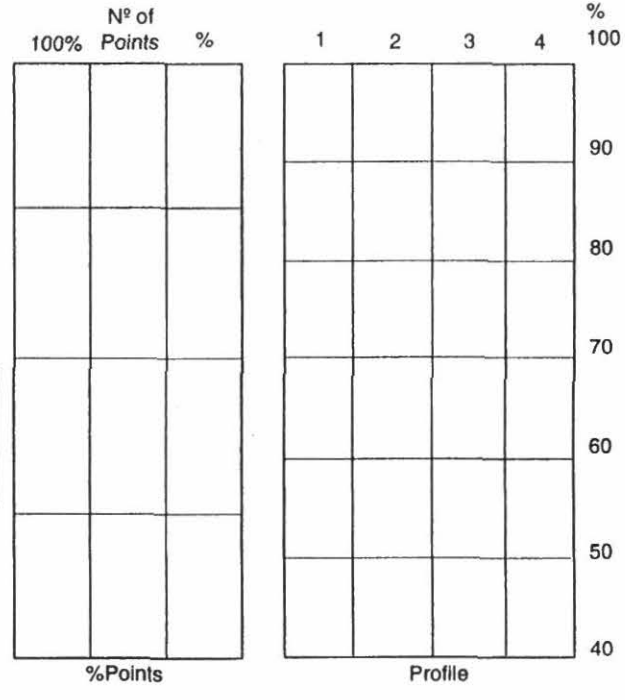
Evaluating Instructors*

Report

Instructor's name: _____ Subject(s) covered: _____

Date: _____

Organization and Clarity	1	2	3	4	5	6	7	8	9
Knowledge of Subject Matter	10	11	12	13	14	15			
Interaction Skills	16	17	18	19	20	21	22	23	24	25
Guidance of Exercises	26	27	28	29	30	31	32	33	34



Comments from course coordinator: _____

*Dotted line in profile indicates the average for all instructors

_____
Signature of course coordinator

Appendix 6 Evaluation of the Module

Participant Worksheet

Instructions

Your opinions regarding the activities, materials, and content of this module will help us improve it.

Please evaluate each component of the module which appears on the left column, by marking an "X" in the space which expresses your opinion. 0 = very bad; 1 = poor; 2 = good, 3 = excellent.

We appreciate your cooperation.

Evaluation Criteria															
Module 1	2. Quality in relation to the audience's level				2. Usefulness in training others				3. Quantity of information provided and according to the participants needs			4. Time given to each item		
Activity, material and/or content	0	1	2	3	0	1	2	3	Little	Adequate	Too much	Little	Adequate	Too much
• Introduction to the module														
• Sequence 1														
- The strategic approach to management														
- Role of PM&E in institutional developement														
- Guidelines for designing a PM&E system														
- Exercise 1.1 Analysis of contributions of the strategic approach														
• Sequence 2														
- Global changes and institutional sustainability														
- PM&E in the region														
- Exercise 2.1 Analysis of global changes and institutional sustainability														
• Sequence 3														
- Guidelines for developing strategies														
- Exercise 3.1 Managing elements to developing strategies														
• Reading materials (lectures)														
• Guidelines for exercises														
• *Transparencies*														

Appendix 7 Evaluation of the Training Event

Instructor Guidelines

Use the following questionnaire at the end of a course, seminar or workshop. The questionnaire is quite general and may be adapted to fit the specific situation of each course. For example, you will probably want to develop some specific questions regarding the objectives and content.

When you are giving a complete course, hand out the questionnaire on the day prior to the course's completion. This way you can process the answers and present the results to the participants at the end of the course. This feedback will be useful for the participants.

Some of the questions at the end of the questionnaire refer to plans which you may wish to implement after the training event. The answers are useful to monitor the proposed activities. If the participants prepare an action plan and implement it these questions can be eliminated from the questionnaire.

Before giving the questionnaire to the participants make sure you emphasize the importance of them answering the questions in helping improve the course. Urge the audience to critically analyze all aspects of the course.

Evaluation of the Training Event

Participant Worksheet

Name of the event: _____

Location of the event: _____ Date: _____

Instructions

Your opinions on different aspects of this course will help us improve the course.

You do not need to sign this form. Please remember that improvements in this activity depend largely on the sincerity of your answers.

The evaluation form should be filled out as follows:

a. Assign a value to each question on a scale of 0, 1, 2, 3, where:
   - 0 = Poor, inadequate
   - 1 = Average, mediocre
   - 2 = Good, acceptable
   - 3 = Very good, highly satisfactory

b. Write your comments about each item in the space provided below each question, according to the score you assigned to it. Please refer to both POSITIVE and NEGATIVE aspects. Leave the space blank when the item did not take place or when you think you did not have a good chance to observe.

Questions about the event

1. Learning objectives

1.1 Did the proposed objectives of the course correspond to your learning expectations? 0 1 2 3

Comments: _____

_____

_____

1.2 Did the course achieve its proposed objectives? 0 1 2 3

Comments: _____

_____

_____

2. Do you think the course filled the gaps in knowledge you had at the beginning of the course? 0 1 2 3
Comments: _____
_____
_____

3. Methodological strategies used
3.1 Lectures/presentations of the instructor(s) 0 1 2 3
3.2 Group work 0 1 2 3
3.3 Amount and quality of teaching materials 0 1 2 3
3.4 Evaluation system 0 1 2 3
3.5 Classroom exercises 0 1 2 3
3.6 Teaching aids (flip chart, projector, videos, etc.) 0 1 2 3
Comments: _____
_____
_____

4. How useful was the content of this course to your current or future work? 0 1 2 3
Comments: _____
_____
_____

5. Coordination of the event
5.1 Information to participants before the course 0 1 2 3
5.2 Sticking to schedule and/or program 0 1 2 3
5.3 Group guidance provided by local coordinator 0 1 2 3
5.4 Logistic support (equipment, materials, stationery) 0 1 2 3
5.5 Supervision of group 0 1 2 3
5.6 Supervision of activities 0 1 2 3
Comments: _____
_____
_____

6. Time dedicated to the event in relation to the objectives and the amount of content to be covered 0 1 2 3
Comments: _____
_____
_____

7. Other general activities or events that positively or negatively influenced your satisfaction with the course

7.1	Lodging	0	1	2	3
7.2	Food	0	1	2	3
7.3	Location of the course and its logistic conditions	0	1	2	3
7.4	Transportation	0	1	2	3

Comments: _____

_____

_____

8. Do you have any specific suggestions to improve the event?

8.1 Course-specific (conferences, teaching materials, exercises)

a. _____

b. _____

c. _____

8.2 General (transportation, food, etc.)

a. _____

b. _____

c. _____

Future activities

9. While attending the course did you plan on how to apply or transfer what you were learning after you return to work? In what way?

_____

_____

_____

10. What resources or support will you need in order to carry out what you have learned during the course? _____

_____

_____

_____

Appendix 8 Terms Used in the PM&E Modules

The training materials on PM&E use a number of general concepts related to agricultural research management. Not strictly limited to definitions of terms, they propose concepts that reflect the thinking of the authors in relation to the general theme.

Accountability
The obligation to report, explain, or justify something. The responsibility of an organization or its staff to provide evidence of research expenditures and performance to donors or higher levels of management.

Assumption
A fact or statement that is accepted as true. In relation to the logical framework, it is a statement about factors that can influence the achievement of objectives but which are beyond the control of researchers, such as political or economic policies or the availability of farming inputs.

Beneficiaries
People, households, organizations, communities, or other units that are affected positively by (or *benefit* from) a research program or activity.

CIPP evaluation model
A conceptual framework for improvement-oriented evaluation. CIPP stands for four kinds of evaluation:

- *Context evaluation.* Assessing the context of a program, identifying target populations and their needs, identifying opportunities and problems in addressing needs, and judging the responsiveness of goals and objectives to assessed needs.
- *Input evaluation.* Identifying and assessing alternative strategies, schedules, budgets, resource requirements, and procedural designs needed to accomplish the goals and objectives of a research activity.
- *Process evaluation.* Assessing the implementation of a plan by recording and judging ongoing activities and accomplishments in relation to the procedural design. It provides information helpful for changing operational plans during implementation.
- *Product evaluation.* Measuring, interpreting, and judging the attainments of a research activity. Intended to interpret the work and merit of an activity's final outcomes in relation to the needs of the group it is intended to serve.

Clients
The intended users of agricultural research products, generally including farmers, agribusiness entrepreneurs, policymakers, extensionists, and consumers.

Criteria
A standard of judgement. The basis for a comparison, a test or an evaluation.

Decision-making level
The level within a research organization or system (for example, the level of the researcher, project manager, experiment station or institute manager, or policymaker) at which a particular decision is made, or to which an evaluator reports.

Effectiveness
The degree to which an activity, project, or program attains its objectives. The extent to which outputs are obtained and effects achieved in relation to objectives.

Efficiency
The degree to which an activity produces outputs at the least cost.

Evaluation
Judging, appraising, or determining the worth, value, or quality of research — whether it is proposed, ongoing, or completed — in terms of its relevance, effectiveness, efficiency, and impact.

Ex ante evaluation
An assessment done before research begins, usually in terms of its relevance, feasibility, potential impact, or expected benefits. Can be used to define a baseline against which progress towards objectives can be measured or to set priorities among several research areas.

Expert review
(See *peer review.*)

Ex post evaluation
An assessment of an activity or its outputs after the activity has been completed. The purpose is usually to estimate benefits in relation to costs.

External analysis
Sometimes called prospective analysis of the external environment (or context analysis). The process of assessing and evaluating the external environment, to identify present and potential opportunities and threats, which can influence the institution's ability to achieve its objectives. (See also *organizational analysis.*)

External environment
In the case of agricultural research the macro-environment that affects an institution, program, or project. At this level, events are practically beyond the organization's control. Examples are governmental policies, consumption trends and development of new scientific knowledge.

External review
Evaluation of a research system, organization, program, or project carried out by persons from outside the unit being evaluated. Usually conducted by experts or peers, but research clients, supporters, or stakeholders may also participate in the evaluation.

External validation
The process by which internal decisions are discussed within external stakeholders, in order to confirm or revise them. In strategic planning, conclusions about threats and opportunities, and the mission, objectives, and policies are generally validated externally.

Formative evaluation
An evaluation aimed at providing information to planners and implementors on how to improve an ongoing program or project.

Gap analysis
An assessment of the requirements of a research plan in terms of the resources needed (financial, human, and physical) to achieve the desired goals.

Goal
Used in the logical framework, a goal is the ultimate end or objective towards which a research activity, project, or program is directed. It is usually something like improving incomes for farmers. (See also *objective*, *purpose* and *output.*)

Impact
The broad, long-term effects resulting from research, usually economic, social, and environmental.

Input
In terms of the logical framework, inputs refer to the resources needed to implement a project, including personnel, operating funds, facilities, and management.

Institutional sustainability
An organization's condition of being accepted and considered legitimate by society. Institutional sustainability has several requirements including (a) an institutional project (clearly defined mission, objectives, policies, and strategies); (b) institutional competence; (c) institutional credibility.

Institutionalization
A process that impersonally establishes a structure, plan, program, project, or activity in the day-to-day operation of an organization.

Internal review
Evaluation of a research project, program, or organization that is organized and carried out by the management and staff of the unit. (See also internal program review).

Logical framework
Often called the *logframe,* it is a tool for planning, monitoring, and evaluating projects in the broader context of programs and national goals. It clarifies the logical links between project inputs and a hierarchy of objectives: direct outputs, broader purposes, and the ultimate goal.

Means of verification
The sources and methods used to obtain and assess information about the achievement of research objectives.

Metaevaluation
Critical assessment and overview of evaluation procedures and experiences. Metaevaluation is done to learn from past evaluations and improve future ones.

Mission
The offiCial statement of the reason for an organization's existence — its basic goals and purpose. (See also *strategic planning.*)

Objective
The expected output, purpose, or goal of a research effort; something towards which efforts are directed. Objectives may also be specific operational statements regarding the desired accomplishments of an activity. (See also *goal, output* and *purpose.*)

Objectively verifiable indicator
Specific measures of progress or results at a specific level of a project's hierarchy of objectives.

Ongoing evaluation
Evaluation carried out during implementation of an activity. It involves observing or checking on research activities and their context, results, and impact. Ensures that inputs, work schedules, and outputs are proceeding according to plan (in other words, that implementation is on course). It also provides a record of input use, activities, and results and warns of deviations from initial goals and expected outcomes. (See also *monitoring.*)

Operational planning
A process for defining what an organization intends to accomplish, how and when this will take place, and who will be held accountable.

Organizational analysis
Internal analysis carried out by gathering and assessing information on the inputs, processes, and products of an organization. The purpose is to identify strengths and weaknesses in relation to opportunities and threats posed by the external environment, and in relation to the organization's objectives.

Output
The specific product or service that an activity produces or is expected to produce. Used in the logical framework to refer to specific results for which the project manager may be held accountable, such as the release of a new maize variety. See also *goal*, *purpose* and *objective*.

Participatory management
Creating a culture of effective participation of an organization's members at all levels. It involves sharing ideas and responsibilities, and getting members' commitment to design and carry out activities that will contribute to institutional objectives and bring about desired institutional changes.

Peer review
Process by which the scientific merit (conceptual and technical soundness) of a research proposal, publication, or activity is evaluated by other scientists working in the same or a closely related field.

Planning
A process for setting organizational goals and establishing the resources needed to achieve them. It is also a way of building a consensus around the mandate, direction, and priorities of a research program or organization.

Policies
Major guidelines for reaching ends in accordance with priorities. Policies should be formulated after, or as a consequence of, the formulation of the organization's mission and objectives. Policies give direction to decisions on inputs and processes.

Products
Specific goods or services produced by an organization program, project or activity. (See also *outputs*.

Program
An organized set of research projects or activities that are oriented towards the attainment of common set of objectives. A program is not time-bound, as projects are, and programs are higher in the research hierarchy than projects.

Programming levels
The areas that encompass activities of an agricultural research institution, according to the specificity of the objectives. The two most common levels are projects and programs.

Project
A set of research activities designed to achieve specific objectives within a specified period of time. A research project is composed of a group of interrelated research activities or experiments that share a rationale, objectives, plan of action, schedule for completion, budget, inputs, outputs, and intended beneficiaries.

Project cycle
A framework for planning and managing projects. It is composed of distinct phases through which a project moves during its lifetime. Variations of the project cycle are used to manage large-scale investments, development-agency activities, and various kinds of research.

Project management
A framework for the systematic planning, implementation, monitoring, and evaluation of research projects and activities.

Purpose
The desired effect or impact of a project. (See also *goal, output,* and *objective.*)

Quality control
A set of planned and systematized activities to guarantee that the products and services of an

institution will fulfill the expectations of the public, beneficiaries, and stakeholders.

Relevance
The appropriateness and importance of research activity's objectives in relation to broader (e.g. regional or national) goals or clients' needs.

Scenario
The simulation of a probable future situation, in the context of the institution's location, taking into consideration the interaction among economic, political, social, and cultural factors, and how these may affect the institution's ability to act.

Stakeholders
Groups whose interests are affected by research activities. The stakeholders of a research organization include staff members, farmers, and extension agents, among others.

Strategic planning
A process by which an organization builds a vision of its future and develops the necessary structure, resources, procedures, and operations to achieve it. The process is generally participatory, and based on analyses of the external environment, the organization, and "gaps". External opportunities and threats and internal strengths and weaknesses are assessed. This is followed by formulation of the organization's mission, objectives, policies, and strategies. Strategic planning is long-term in nature (e.g. for 10 or more years.) It serves as a base for tactical and operation planning. (See also *tactical planning* and *operational planning*.)

Strategy
A course of action involving a logical combination of actors, factors and actions chosen to reach a long-term goal or vision. It is important to distinguish policy from strategy. Policies are general guidelines to achieve given objectives. In addition, Strategies incorporate a logical sequence of steps. (See also *strategic planning*.)

Summative evaluation
A summary statement about the accomplishments, effectiveness, value, and impact of programs. Summative evaluations are made for accountability purposes and for policy-making.

Survey
A technique for gathering information from individuals or groups. It can be done by observing, administering questionnaires to, or having discussions with members of the group being surveyed.

Tactical planning
A process of organizational planning at the intermediate management level. The objectives, goals, policies, priorities, and strategies defined through tactical planning are for the medium term (generally 3-5 years); they are based on the strategic planning, and are the guidelines for the operational planning.

Appendix 9 Strategies for Solving Complex Problems

All institutions frequently face problems. Institutions generally do not have a systematic method for solving such problems, which may have serious implications for institutional development, and for the quantity and quality of its products or services. Without systematic methods, institutions waste time, talent, and financial resources while looking for solutions that are not necessary the most appropriate.

The search for solutions to complex problems can be organized in different ways. We will present two strategies, each with a participatory component.

Eight-step Strategy

The eight-step strategy (Figure A9.1), requires the participation of different groups of actors involved in the problem to be solved. These groups answer the following questions for each step:

- What is the problem?
- What do we know about the problem?
- What caused the problem?
- What can be done?
- What is the best solution?
- How can we implement the solution?
- Was the problem resolved?
- Can we improve on what was done?

Five-stage Strategy

The five-stage strategy for solving complex problems is a variation of the eight-step strategy, and combines the elements in a different way. Here, the groups complete five stages, which include: proposal, analysis and planning; education and communication; operational plan; and implementation and evaluation of the results. Figure A9.2 shows the five stages with the corresponding eight steps.

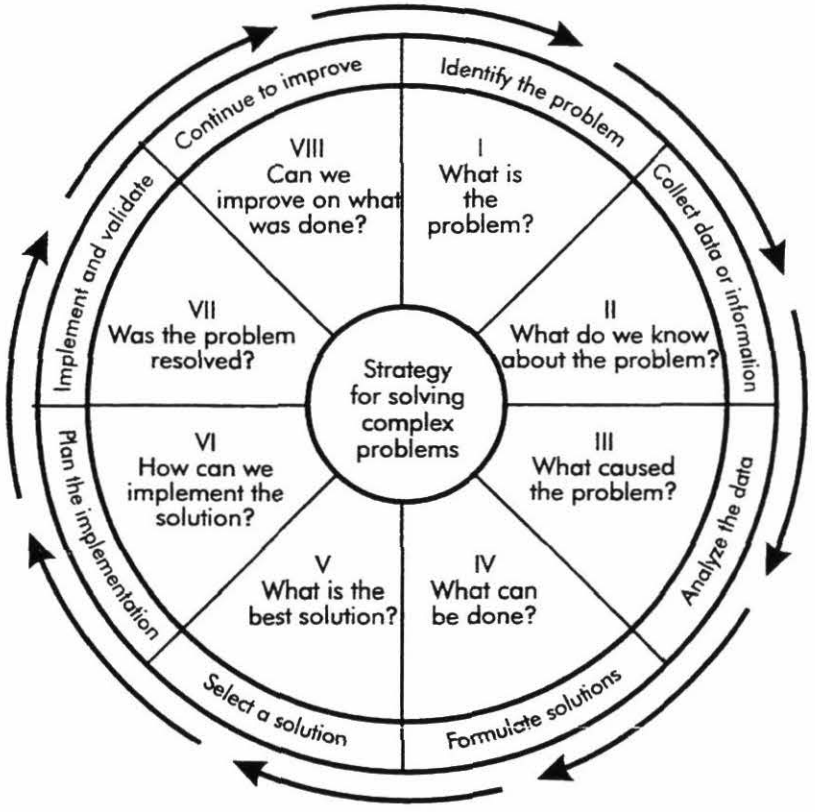


Figure A9.1. Eight-step strategy

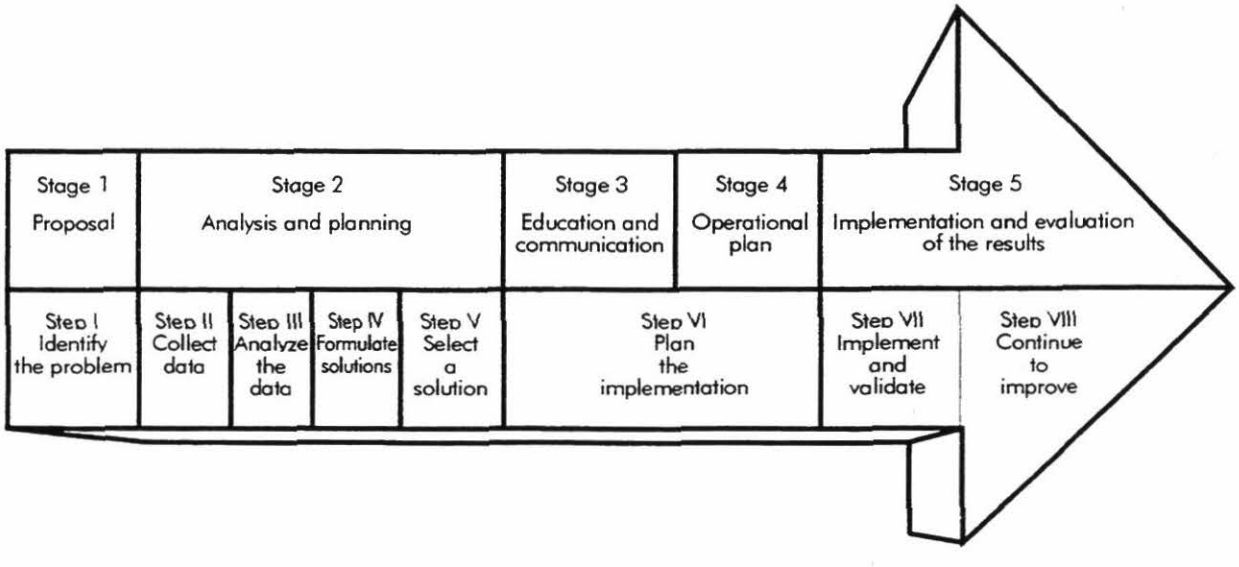


Figure A9.2. Five-stage strategy

Strategy Implementation

In practice, a group of no more than three people should coordinate the activivities and distribute copies of Figures A9.1 and A9.2, to each of the groups involved in the solution of the problem. Ask them to answer the questions, as fully as possible, and in the order shown in the Figure. After about 3 to 5 days, each group presents both an oral and written analysis of the problem, its original cause, possible solutions, how to implement solutions, and how to recognize if the problem has been solved.

The coordinating group will consider criticisms and suggestions once the groups have presented their opinions. It will study all the choices and present an oral and written summary to the top management of the institute. Management will study this summary, and announce and explain its final decision to those participating in the problem-solving process.

The explanation by the management is one of the most important aspects of this strategy. Without it, participants may refuse to get involved in another problem-solving process; in which case the institution will lose the creative potential of its human resources for solving relevant problems.

Appendix 10 Bibliography

References

DAVIS, S.; DAVIDSON, B. 1993. Visão 2020: Administrando sua empresa hoje para vencer amanhã. Editora Campus: Rio de Janeiro, Brasil.

DEAN, B.V.; CASSIDY, J.C. (eds.). 1990. Strategic management: Methods and studies. North-Holland: New York, USA.

DRUCKER, P.F. 1989. As novas realidades: No governo e na política, na economiae nas empresas, na sociedade e na visão do mundo. Pioneira: São Paulo, Brasil.

GAJ, L. 1987. Administração estratégica; série Fundamentos. Editora Atica: São Paulo, Brasil.

GAJ, L. 1990. Tornando a administração estratégica possível. McGraw-Hill: São Paulo, Brasil.

GODET, M. 1987. Scenarios and strategic management. Butterworths: London, England.

HANNA, N. 1987. Strategic planning and the management of change. Finance and Development 24(1): 30-33.

HORTON, D.; BALLANTYNE, P.; PETERSON, W.; URIBE, B.; GAPASIN, D.; SHERIDAN, K. 1993. Monitoring and evaluating agricultural research: A sourcebook. CAB International in association with ISNAR: Wallingford.

JOHNSON, G. 1987. Strategic change and the management process. Basil Blackwell: New York, USA.

NOVOA B., A.R. 1989. Evaluación de la investigación agraria en América Latina: Síntesis y comentarios analíticos. **In**: Novoa B., Andrés R. (ed.). Agricultura, tecnología y desarrollo; Cómo se evalúa la investigación agraria en América Latina. CIID y Tercer Mundo Editores: Bogotá, Colombia.

NOVOA B., A.R. 1993. Resumen de los resultados de los estudios de caso sobre PS&E. Document presented in the Taller para Formación de Capacitadores en Administración de la Investigación Agropecuaria. ISNAR/CIAT. Palmira, 10-28 de mayo, 1993.

NOVOA B., A.R.; HORTON, D. 1994. Planificación, seguimiento y evaluación de la investigación agropecuaria en las Américas: Una síntesis. **In**: Novoa B., A.R.; Horton, D. (eds.). Administración de la investigación agropecuaria: Experiencias en las Américas. Tercer Mundo Editores en asociación con ISNAR y PROCADI: Santafé de Bogotá, Colombia.

PORTER, M.E. 1990. The competitive advantage of nations. The Free Press: New York, USA.

SOUZA SILVA, J. DE 1993. Instituções públicas sustentáveis, estudos prospectivos e estrategistas para a construção do futuro. Revista Telebras 17: 57-71.

SOUZA SILVA, J. DE; FLORES, M.X. 1993. Strategic management of agricultural research: The EMBRAPA experience. Public Administration and Development 13 (3): 249-259.

TOFFLER, A. 1990. Powershift: As mudanças do poder. Editora Record: Rio de Janeiro, Brasil.

WRIGHT, J. 1985. A técnica delphi: Uma ferramenta útil para o planejamento no Brasil. **In**: III Encontro Brasileiro de Planejamento Empresarial "Como Planejar 86". Sociedade Brasileira de Planejamento Empresarial: São Paulo, Brasil.

WRIGHT, P.; PRINGLE, C.D.; KROLL, M.J. 1992. Strategic management: Text and cases. Ally and Bacon: Boston, USA.

Literature Consulted

AGOR, W.H. (ed.) 1989. Intuition in organizations: Leading and managing productively. Sage Publications: London, England

ALVAREZ HEREDIA, B. 1992. Las instituciones del conocimiento y su contexto. **In**: Alvarez Heredia, B.; Gómez Buendía, H. (eds.). Ciencia y tecnología: Retos del nuevo orden mundial para la capacidad de investigación en América Latina. CIID/IEL: Santafé de Bogotá, Colombia.

ARDILA V., J. 1992. Investigación agropecuaria en América Latina. **In**: Alvarez Heredia, B.; Gómez Buendía, H. (eds.). Ciencia y tecnología: Retos del nuevo orden mundial para la capacidad de investigación en América Latina. CIID/IEL: Santafé de Bogotá, Colombia.

BRYSON, J.M. 1990. Strategic planning for public and non-profit organizations: A guide to strengthening and sustaining organizational achievements. Jossey-Bass Publishers: San Francisco, USA.

BUSCH, L.; LACY, W.B.; BURKHARDT, J.; LACY, L.R. 1991. Plants, power, and profit: Social, economic, and ethical consequences of the new biotechonologies. Basil Blachwell: Cambridge, USA.

CAPRA, F. 1986. O ponto de mutação. Circulo do livro: São Paulo, Brasil.

COLLION, M.H. 1989. Strategic planning for national agricultural research systems:An overview. Working Paper No.26. International Service for National Agricultural Research: The Hague,The Netherlands

DAVIDSON, J.D.; REES-MOGG, L.W. 1991 The great reckoning: How the world will change in the depression of the 1990's. Summit Books: New York, USA.

DRUCKER, P.F. 1992. Managing for the future: The 1990s and beyond. Truman Talley Books: New York, USA.

EMBRAPA, Secretaria de Administraçao Estratégica. 1990. Cenários para a pesquisa agropecuária: Aspectos teóricos e aplicaçao na EMBRAPA. Documento No. 2. Empresa Brasileira de Pesquisa Agropecuária, Secretaria de Administraçao Estratégica: Brasilia, Brasil.

FLORES, M.X.; DE SOUZA SILVA, J. 1992. Projeto EMBRAPA II: Do projeto de pesquisa ao desenvolvimento sócio-economico no contexto do mercado. Documento No. 8. Empresa Brasileira de Pesquisa Agropecuária, Secretaria de Administraçao Estratégica: Brasilia, Brasil.

FLORES, M.C. 1993. Planejamento estratégico de alto nível governamental. EMBRAPA: Brasilia, Brasil. (mimeographed).

FULLER, G. 1993. Estratégias do negociador. Livros Técnicos e Científicos: São Paulo, Brasil.

FUKUYAMA, F. 1992. El fin de la historia y el último hombre. Editorial Planeta: Buenos Aires, Argentina.

GOMEZ BUENDIA, H. 1992. Las instituciones del conocimiento como organizaciones formales: Un balance inicial. **In**: Alvarez Heredia, B.; Gómez Buendía, H. (eds.). Ciencia y tecnología: Retos del nuevo orden mundial para la capacidad de investigación en América Latina. CIID/IEL: Santafé de Bogotá, Colombia.

HOBBS, H. 1990. Problems and solutions for "decentralizing" national agricultural research systems. Working paper No. 36. International Service for National Agricultural Research: The Hague, The Netherlands.

KENNEDY, P. 1993. Preparing for the twenty-first century. Random House: New York, USA.

MARTINEZ NOGUEIRA, R. 1992. Lineamientos para una agenda. **In**: Alvarez Heredia, B.; Gómez Buendía H. (eds.). Ciencia y tecnología: Retos del nuevo orden mundial para la capacidad de investigación en América Latina. CIID/IEL. Santafé de Bogotá, Colombia.

MINTZBERG, H. 1987. Crafting strategy. Harvard Business Review 65(4): 66-75.

NAISBITT, J.; ABURDENE, P. 1990. Megatrends 2000: Ten new directions for the 1990's. Avon Books: New York, USA.

OLIVEIRA, D.P.R. 1991. Planejamento Estratégico: Conceitos, metodologia e práticas. Atlas: São Paulo, Brasil.

PAEPKE, C.O. 1993. The evolution of progress: The end of economic growth and the beginning of human transformation. Random House: New York, USA.

ROSSETTI, J.P.; GAJ, L.; COBRA, M.; CABRERA, L.C.Q. 1993. Transicao 2000:tendências, mudanças e estratégias. Makron books de Brasil Editora Ltda.: São Paulo, Brasil.

SCHNAARS, S. 1987. How to develop and use scenarios. Long range planning 20 (1): 105-114.

SOUSA, I.S.F.; SOUZA SILVA, J. DE 1992. Parceria: Base Conceitual para reorientar as relaçoes interinstitucionais da EMBRAPA. Documento No.9. Empresa Brasileira de Pesquisa Agropecuária, Secretaria de Administraçao Estratégica: Brasilia, Brasil.

STOFFAES, C. 1991. A crise da economia mundial. Dom Quixote: Lisbon, Portugal.

URIBE, B.; HORTON, D. (eds.). 1993. Planeación, seguimiento y evaluación de la investigación agropecuaria: Experiencias en las Américas - Informe del taller regional. CIMMYT, México, 15-22 de octubre, 1992. International Service for National Agricultural Research: The Hague, The Netherlands

WAHLSTROM, B. 1993. Europa 2002: Uma visao futurista da Europa no século XXI. São Paulo: Makron books do Brasil Editora Ltda.

ZAPATA, V. 1995. Training trainers in agricultural research management. International Center for Tropical Agriculture (CIAT), in association with ISNAR. Cali, Colombia..

Appendix 11 Overhead Transparencies

Cover

APPRO A	Flowchart for module 1
APPRO B	Terminal objective

Sequence 1

APPRO 1	Flowchart for Sequence 1
APPRO 2	Times of crisis, times of change
APPRO 3	Strategic approach — CIPP model
APPRO 4	Social/institutional changes
APPRO 5	Problems, problems!!!
APPRO 6	Attitude toward planning
APPRO 7	Institutional sustainability
APPRO 8	The logic of survival during crises and institutional changes
APPRO 9	Reasons to adopt strategic management
APPRO 10	Basic strategic management system
APPRO 11	Comprehensive strategic management system
APPRO 12	The principles of total quality
APPRO 13	The design of an integrated PM&E system—CIPP approach
APPRO 14	Principles and characteristics of PM&E
APPRO 15	Principal features of the strategic approach
APPRO 16	Principal features of the strategic approach
APPRO 17	Components of the strategic approach
APPRO 18	Management cycle
APPRO 19	Components of a management system

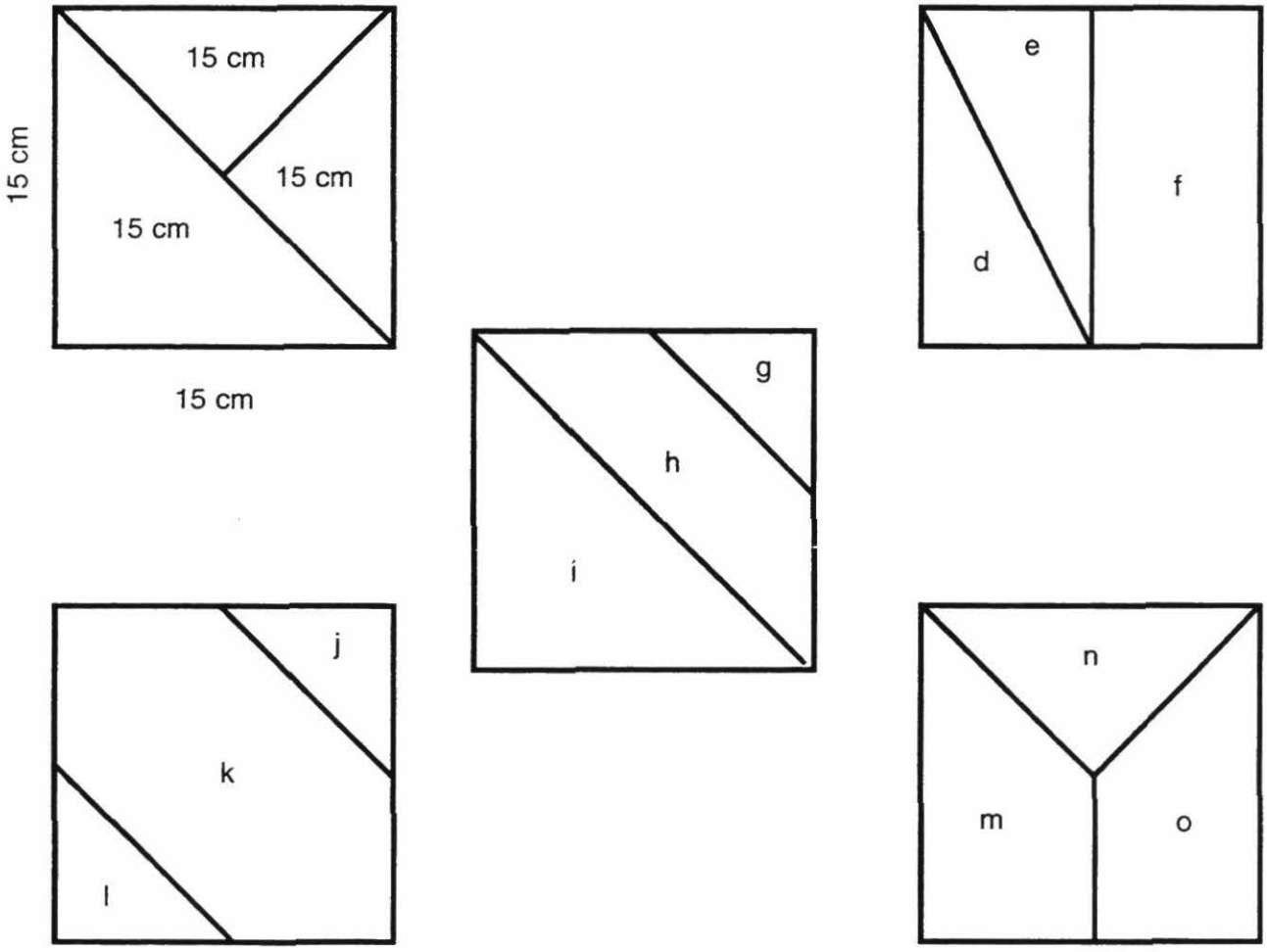
Sequence 2

APPRO 20	Flowchart for Sequence 2
APPRO 21	Context changes; questions
APPRO 22	Rise and fall of the development models
APPRO 23	Relationship between global and institutional changes
APPRO 24	Relationship between global and institutional changes
APPRO 25	13 case studies
APPRO 26	Status of PM&E in the region
APPRO 27	Status of M&E in the region
APPRO 28	Status of M&E in the region
APPRO 29	Status of planning in the region
APPRO 30	PM&E: Challenges and perspectives
APPRO 31	Contributions of PM&E

Sequence 3

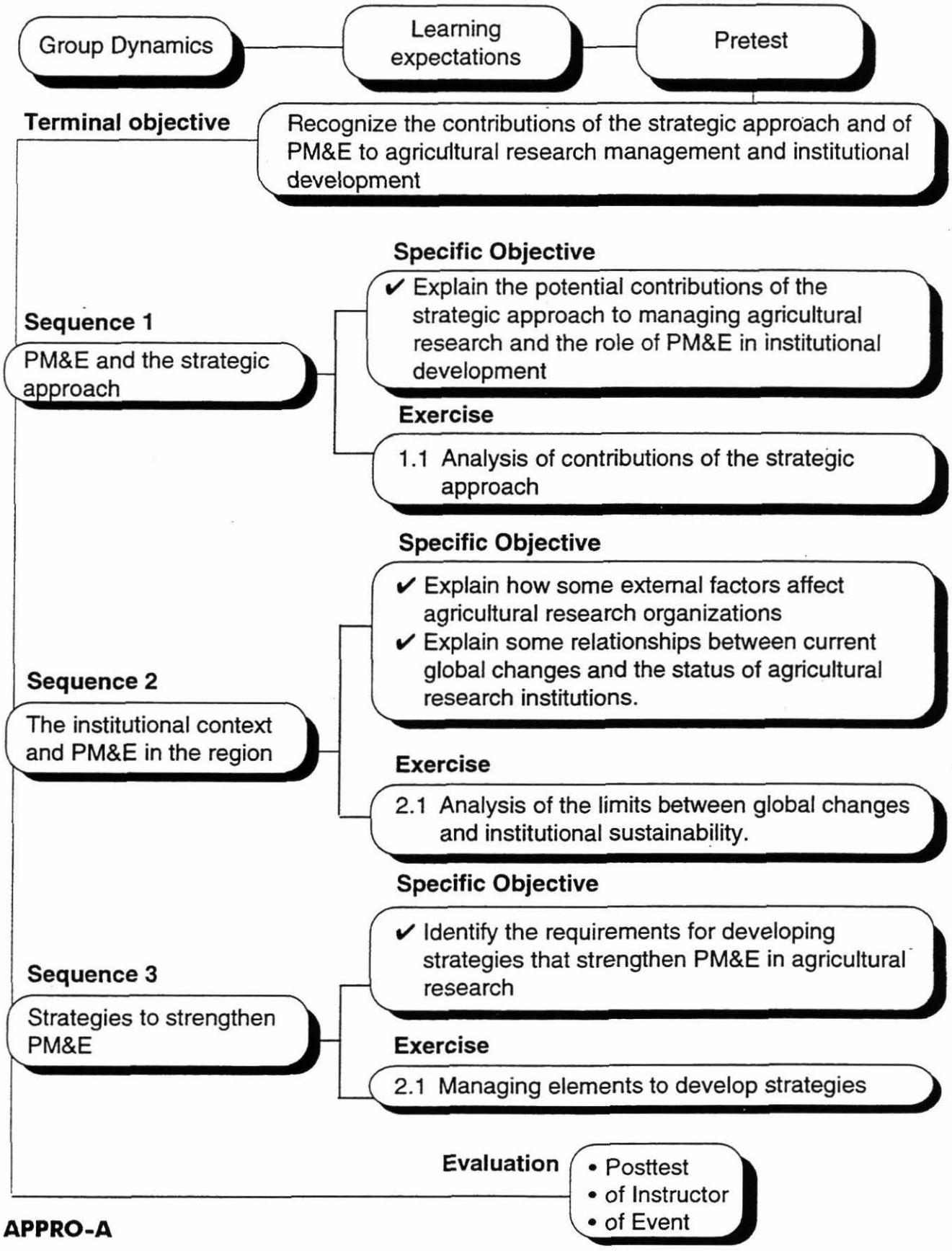
Appendix

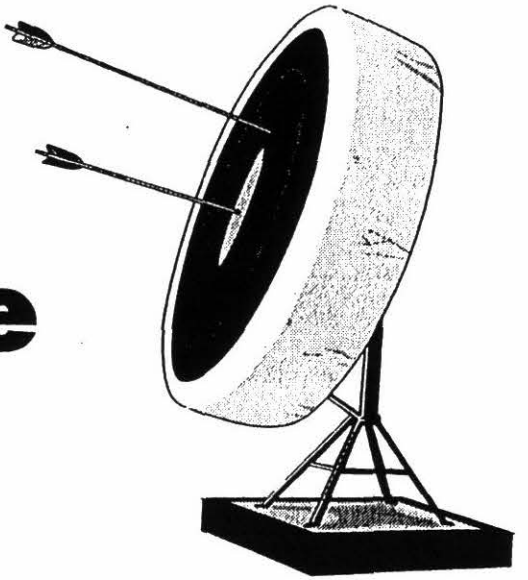
Appendix 12 Design of Squares for Group Dynamics Exercise



Envelope 1: Pieces a, o, j
Envelope 2: Pieces b, n, g
Envelope 3: Pieces c, m, b
Envelope 4: Pieces d, l, i
Envelope 5: Pieces e, k, f
Please note that:
a = b = n
c = i
g = j = l

Flowchart for Module 1

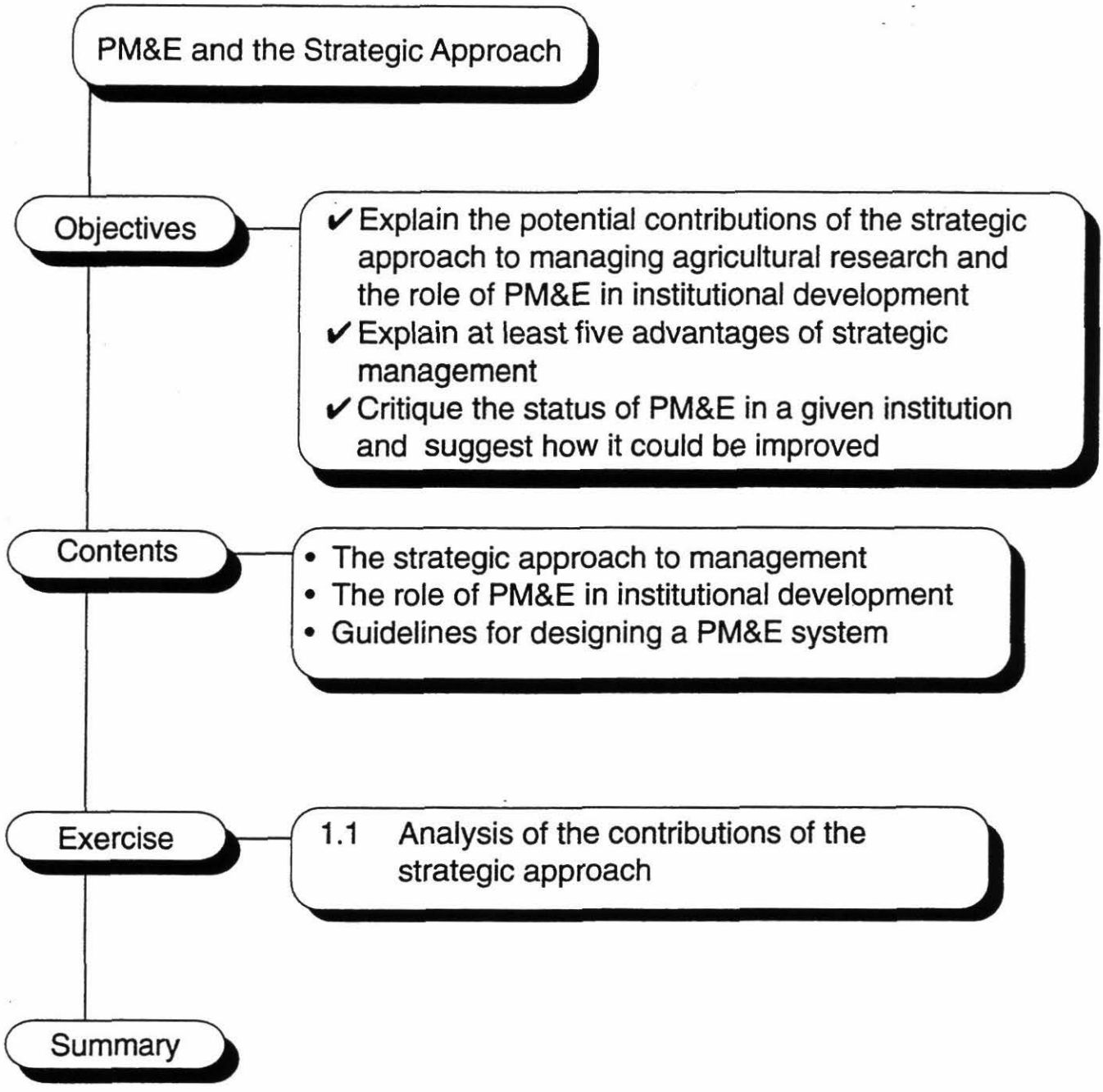




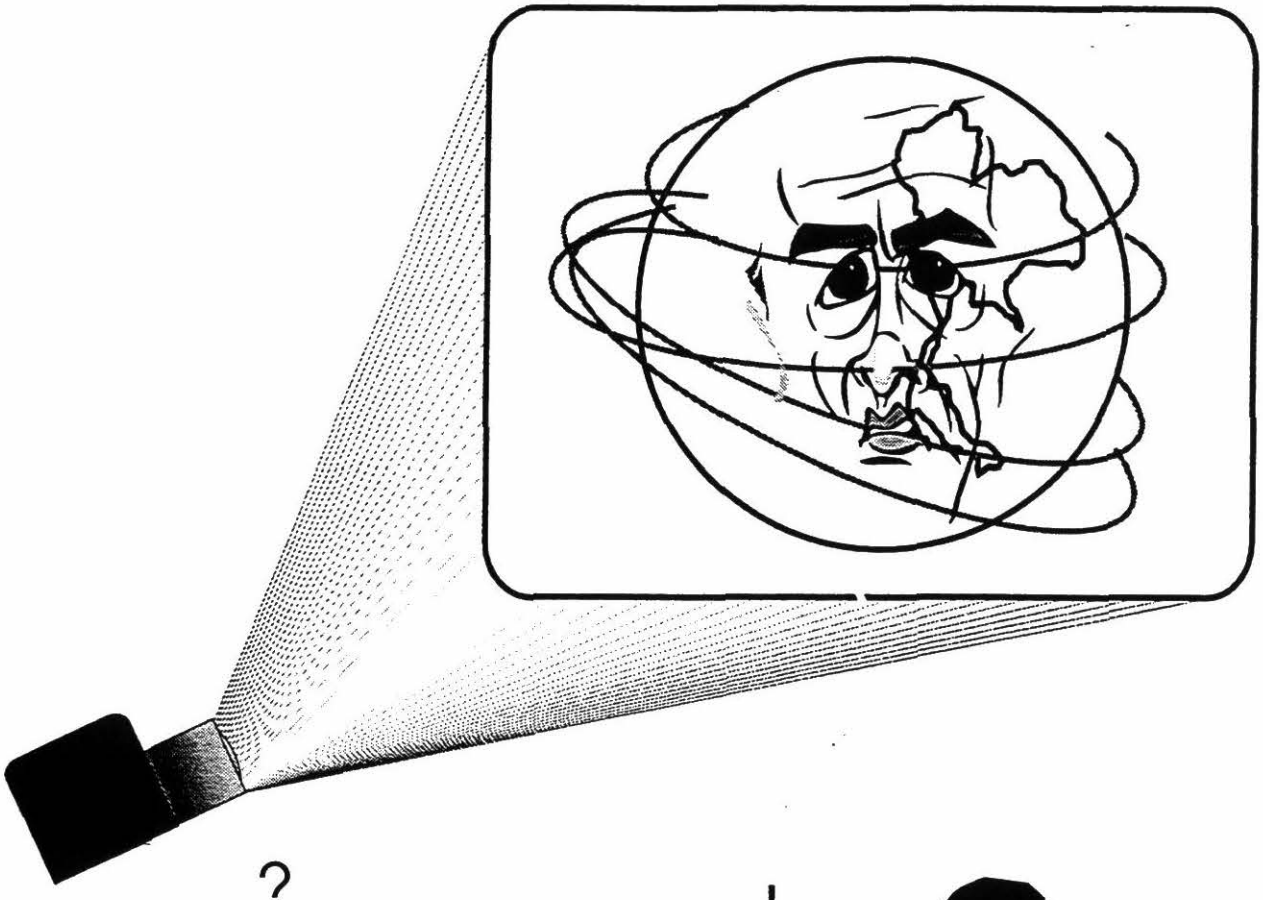
Terminal Objective

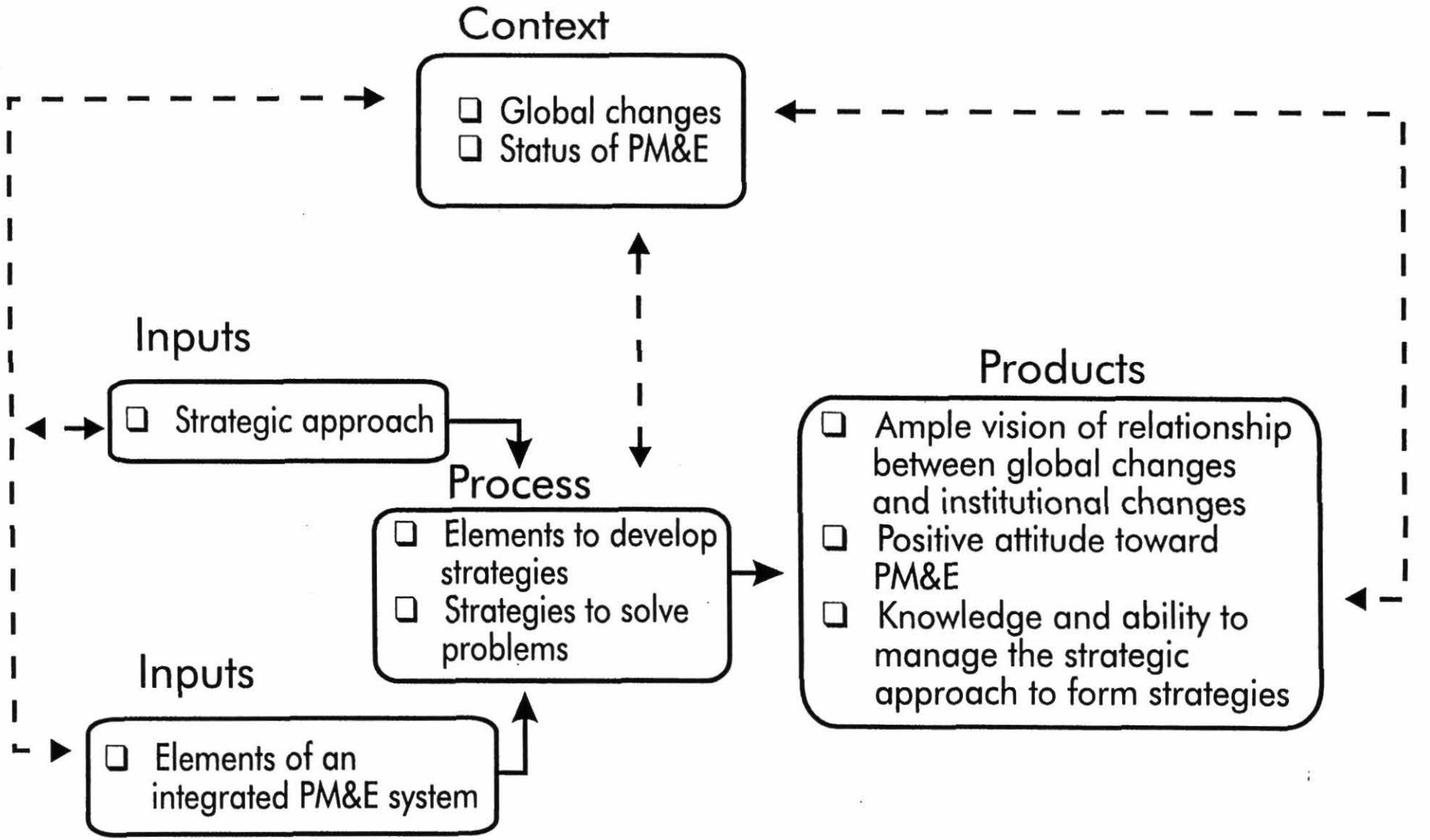
Recognize the contributions
of the strategic approach and of PM&E
to agricultural research management
and institutional development

Flowchart for Sequence 1



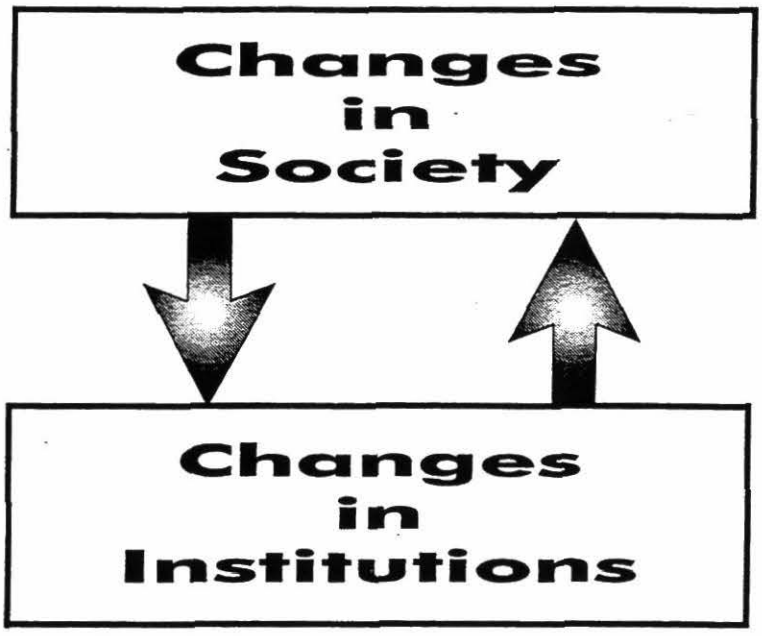
Times of crisis
Times of change



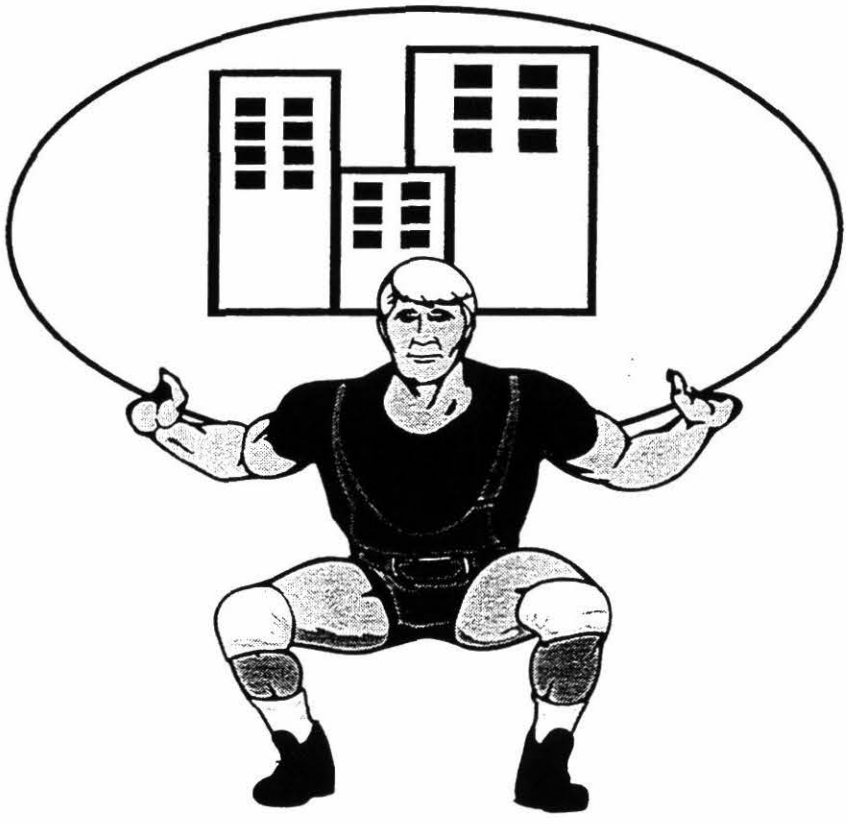


The Strategic Approach CIPP Model

Social/institutional changes

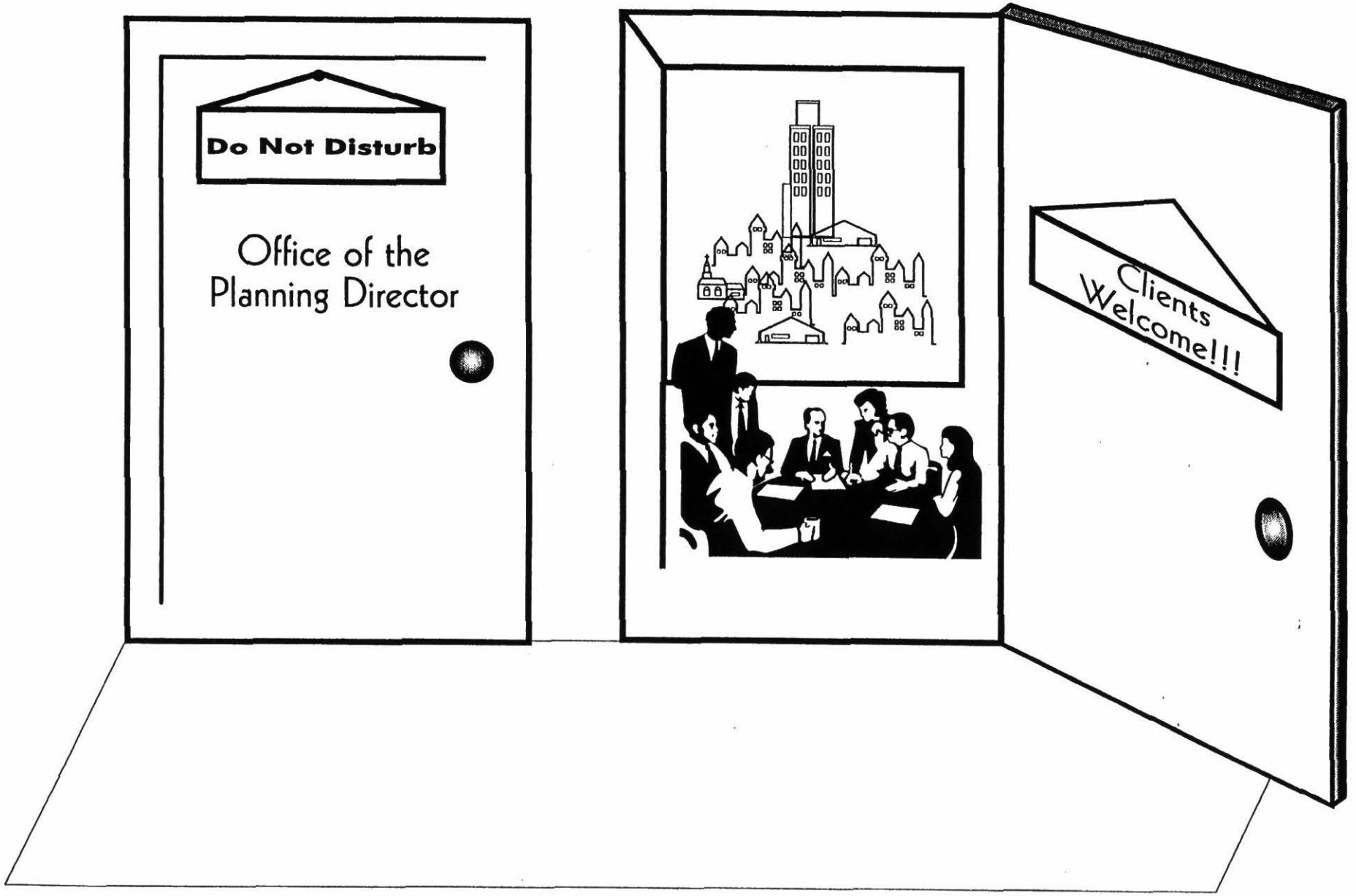


PM&E is part of the solution

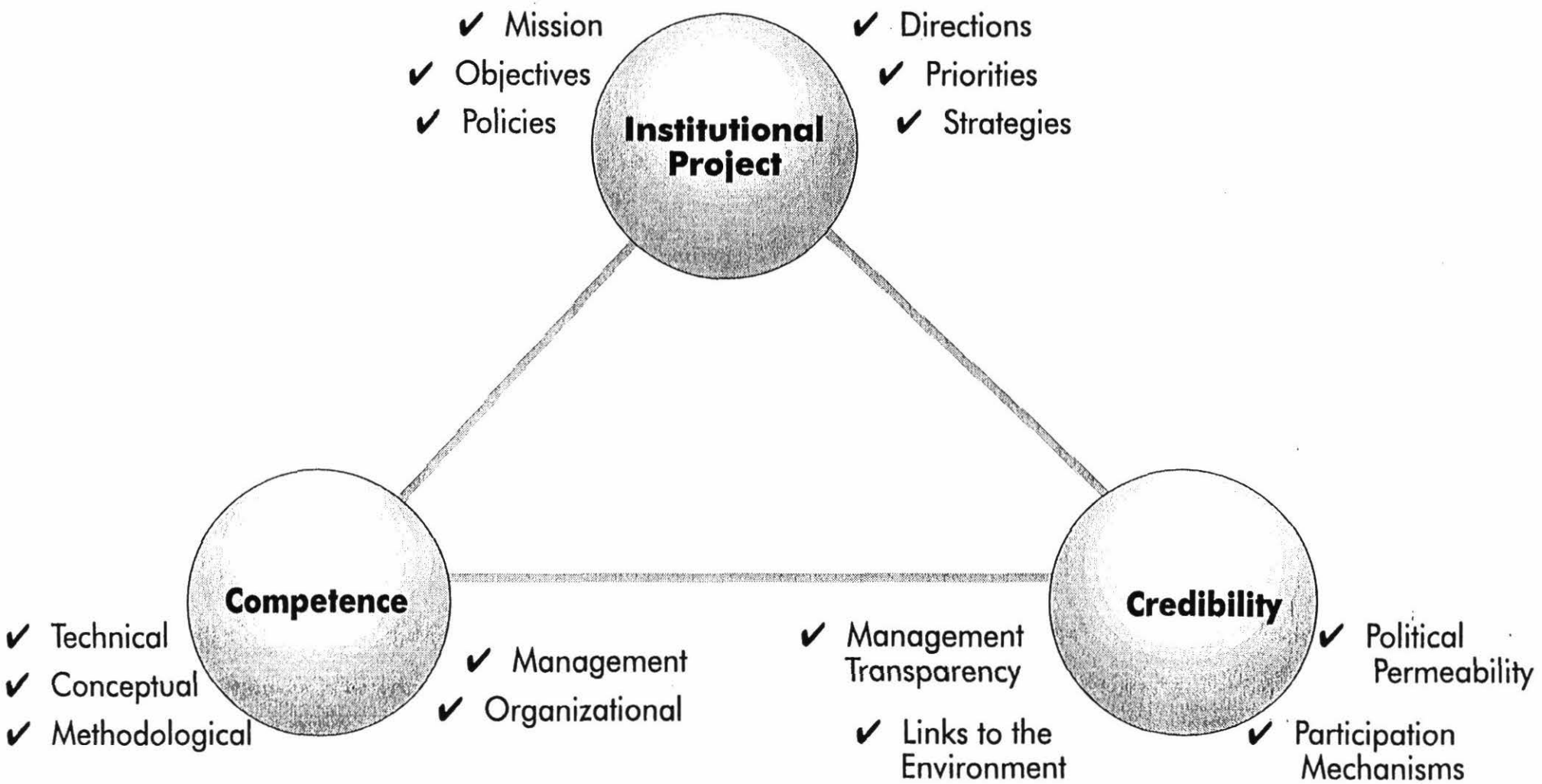


Problems, problems!!!

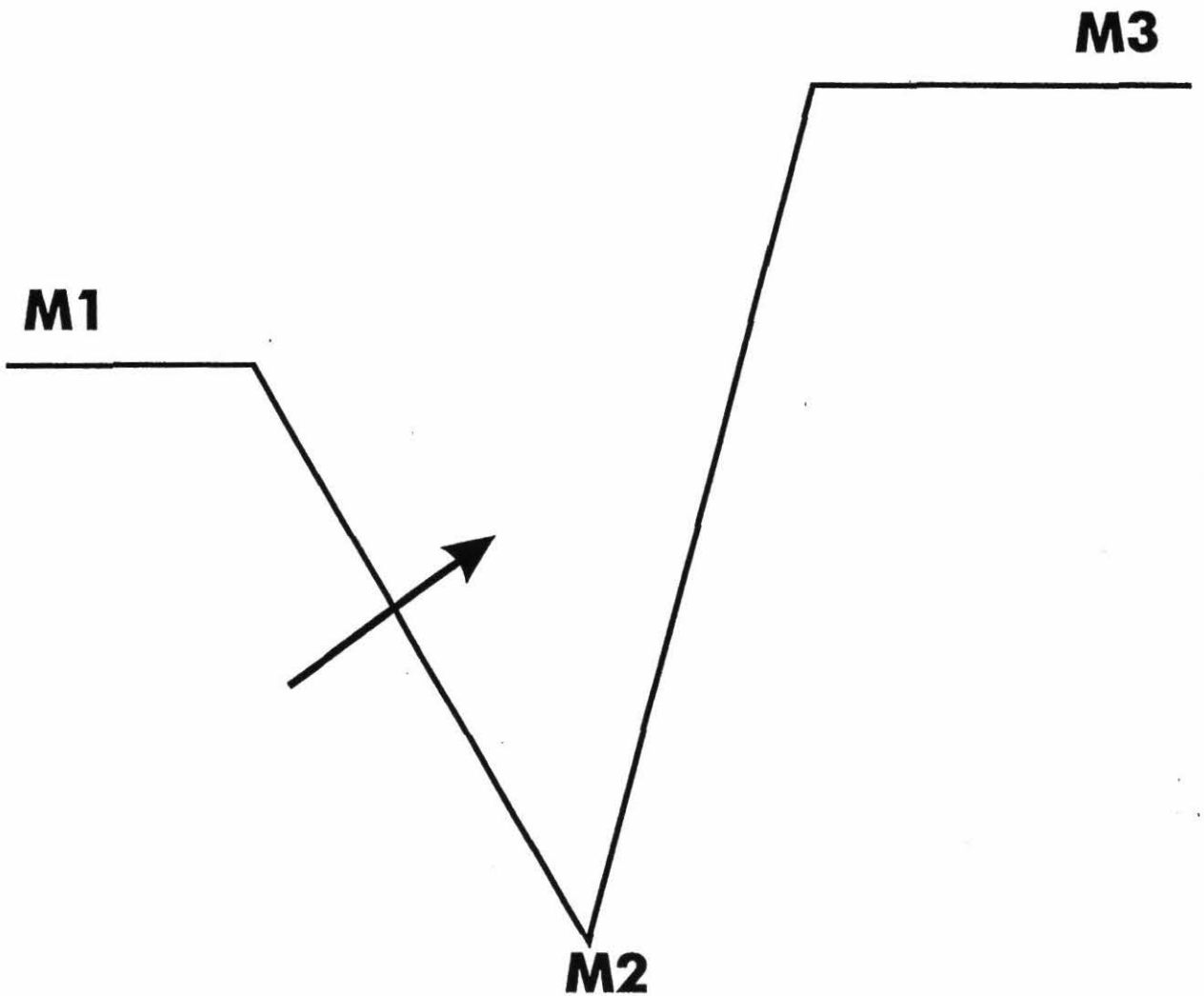
Attitude toward planning



Institutional Sustainability



The logic of survival during crises and institutional changes

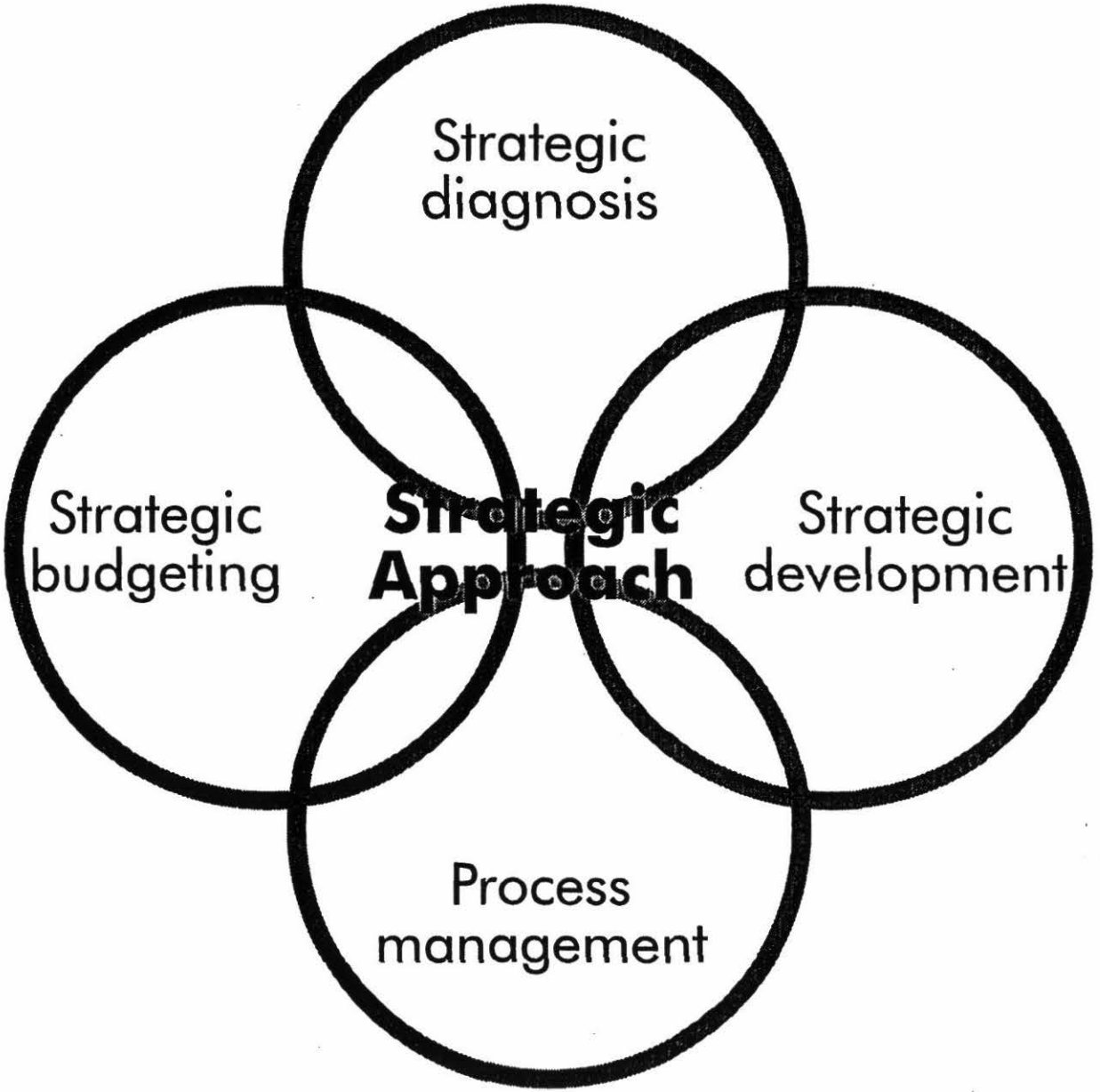


Reasons to Adopt Strategic Management

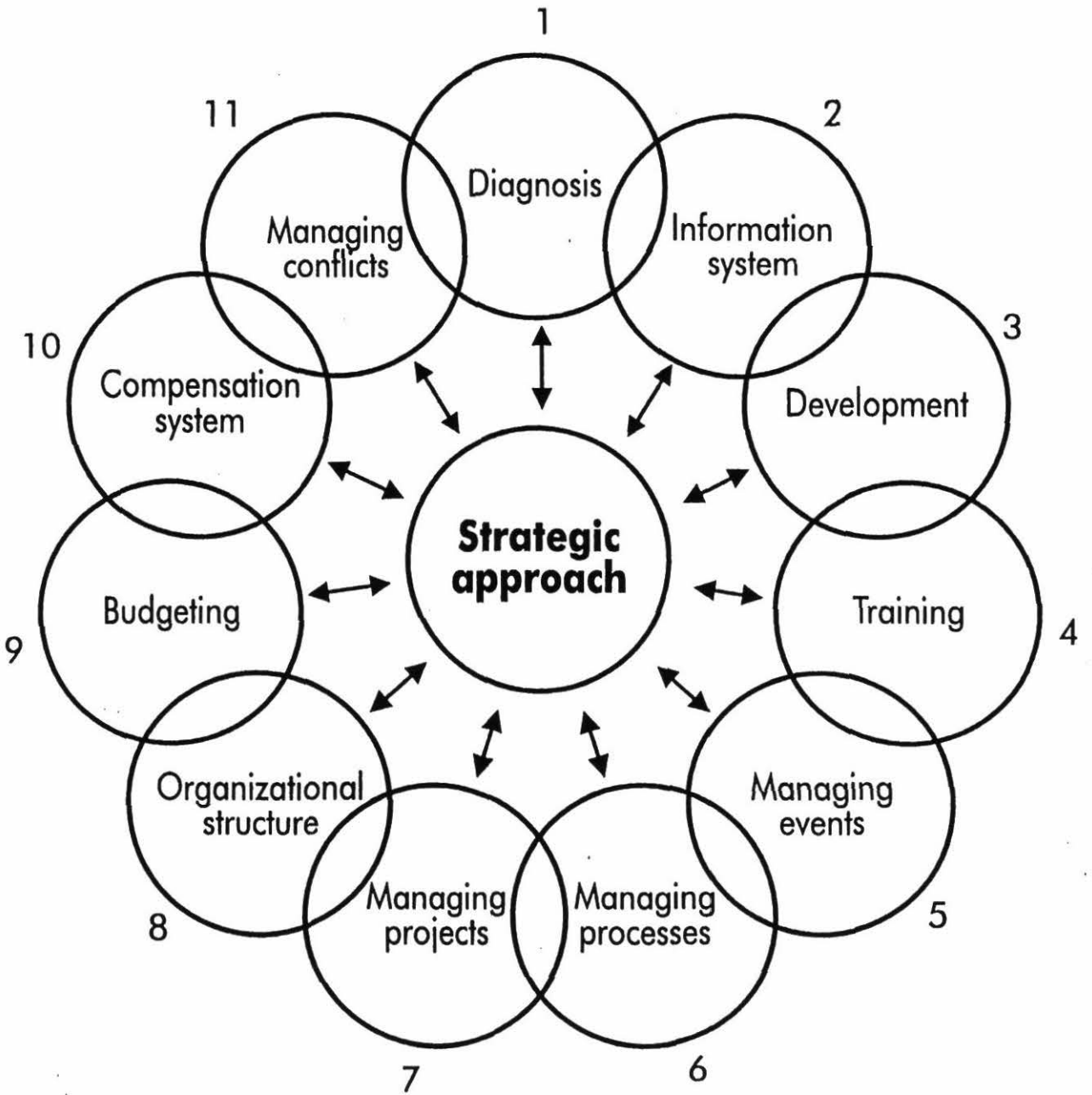
1. Institutional sustainability
   - Project
   - Competence
   - Credibility

2. Mobilization of human resources

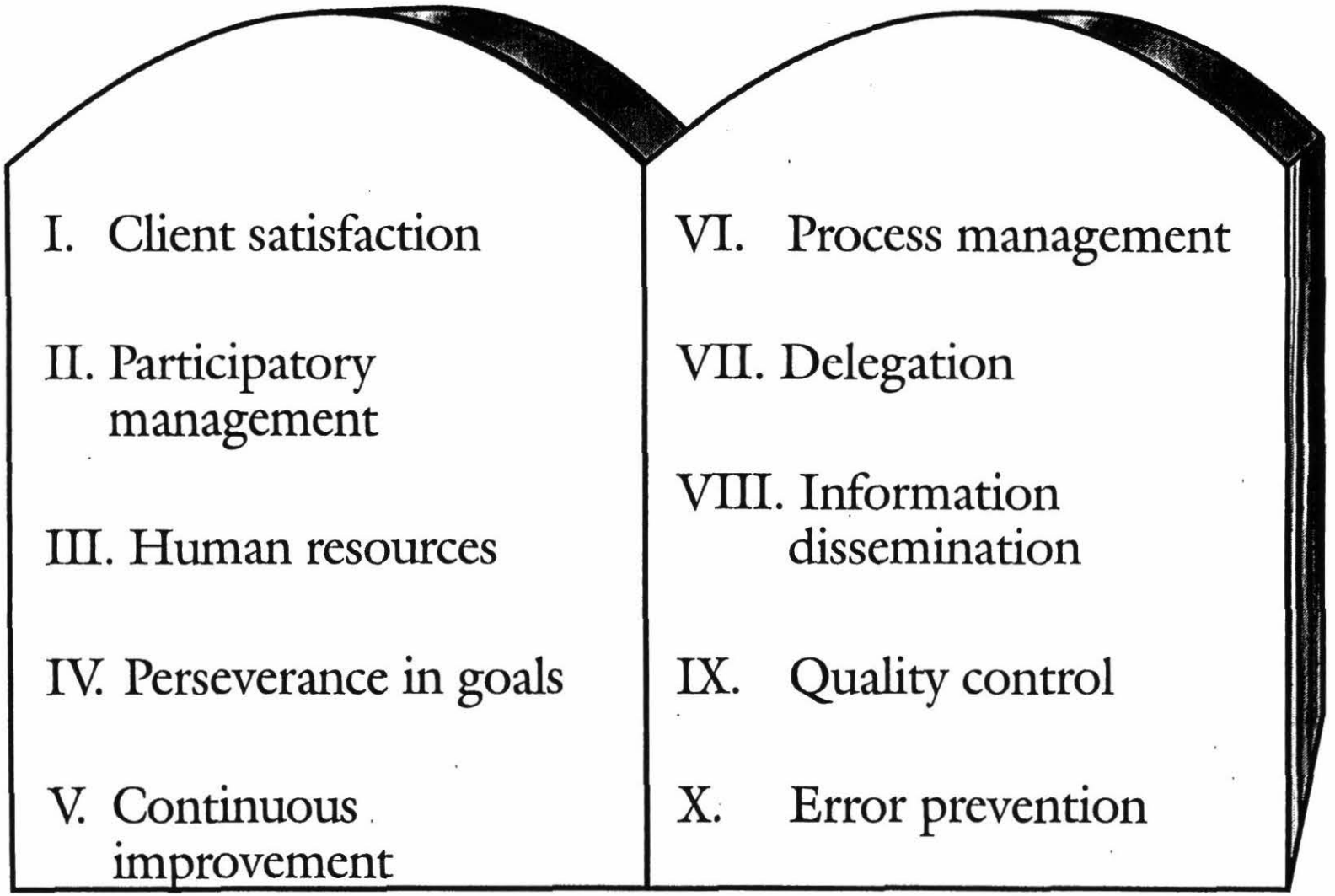
Basic strategic management system

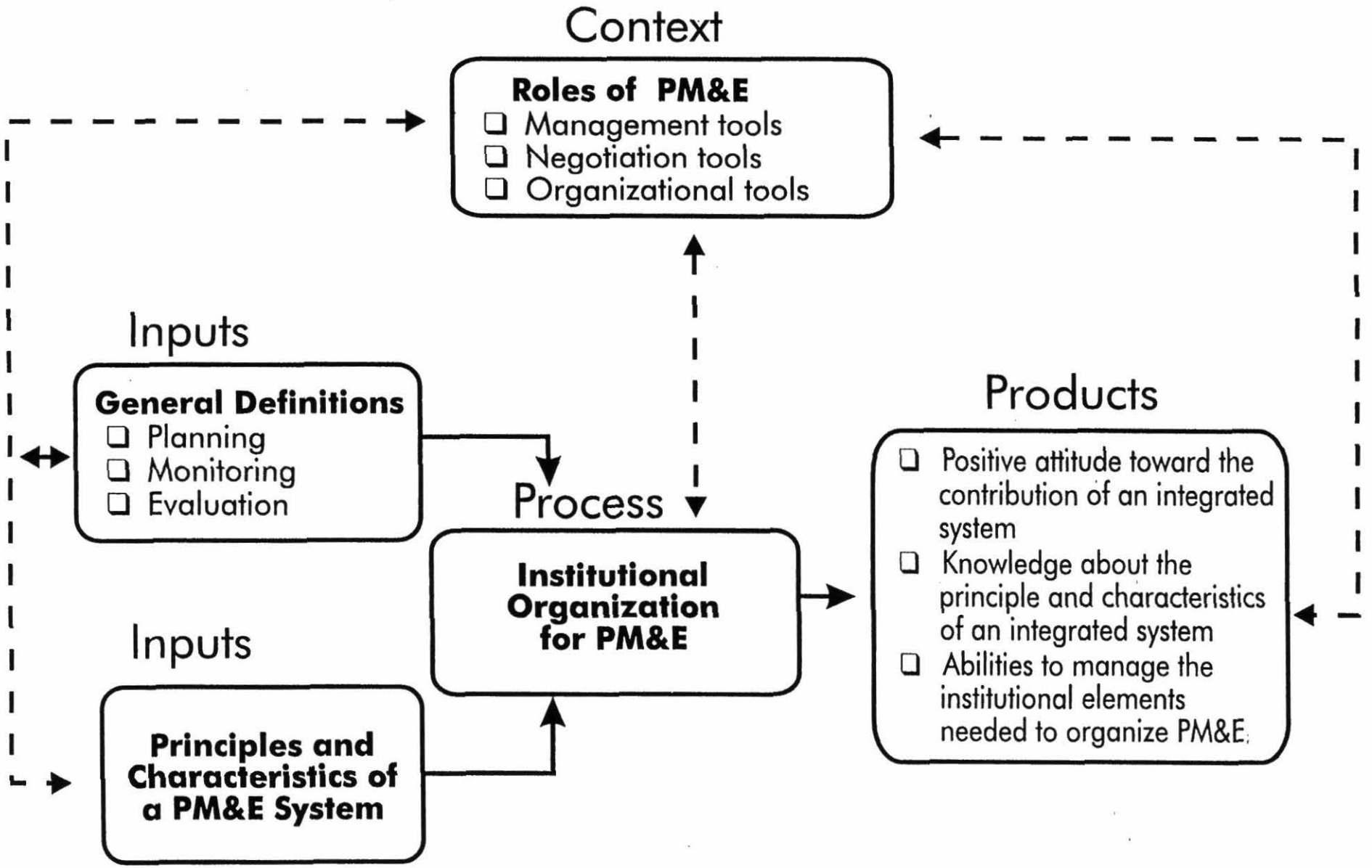


Comprehensive strategic management system



Ten Principles of Total Quality





The Design of an Integrated PM&E System
CIPP Approach

Principles and Characteristics of PM&E

- ✔ Integration
- ✔ Participation
  - Commitment
  - Sharing
  - Articulate decision — action
- ✔ Decentralization
- ✔ User-oriented
- ✔ Systems approach
- ✔ Management-oriented
- ✔ Institutionalization

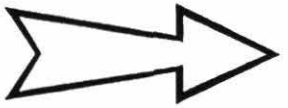
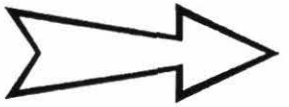
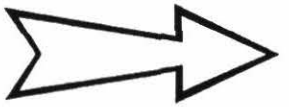
Principal features of the strategic approach

- Plans on the basis of turmoil and lack of continuity
- Builds alternative scenarios
- Focused on market demands
- Build flexible culture that adjusts to changes
- Employs a holistic approach to explore the reality
- Recognizes the importance of environmental factors
- Principal result: New institutional behavior
- Accepts changes because they can adjust the course of an organization

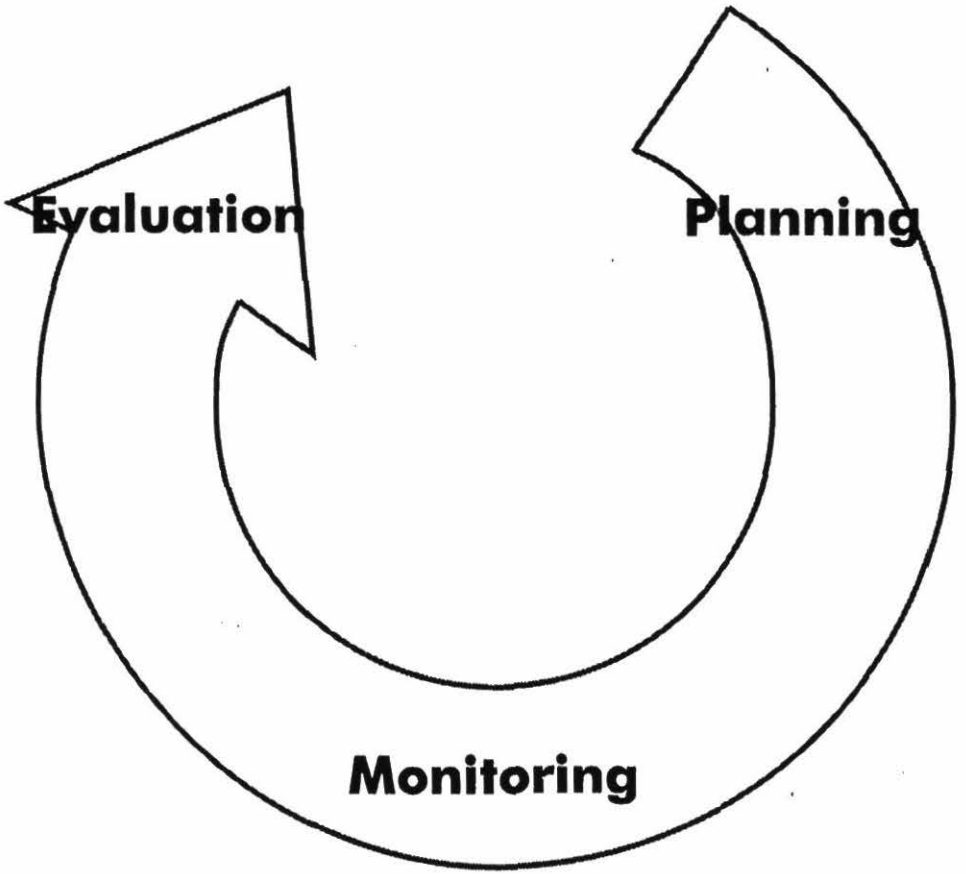
Principal features of the strategic approach

- Gives priority to "intelligent investments"
- Uses an interdisciplinary approach
- Promotes decentralization
- Prefers collegial decisions
- Order of planning priorities: strategic, tactical, operational
- PM&E viewed as a system
- Values quantitative and qualitative variables and data
- Commitments are long-term, medium-term, short-term, in that order

Components of the Strategic Approach

In management policy		A strategic intention
In the time dimension		A long-term commitment
In the institutional dimension		A strategic culture

Management Cycle



Planning

- Context
- Problem
- Objectives
- Results expected
- Resources
- M&E indicators

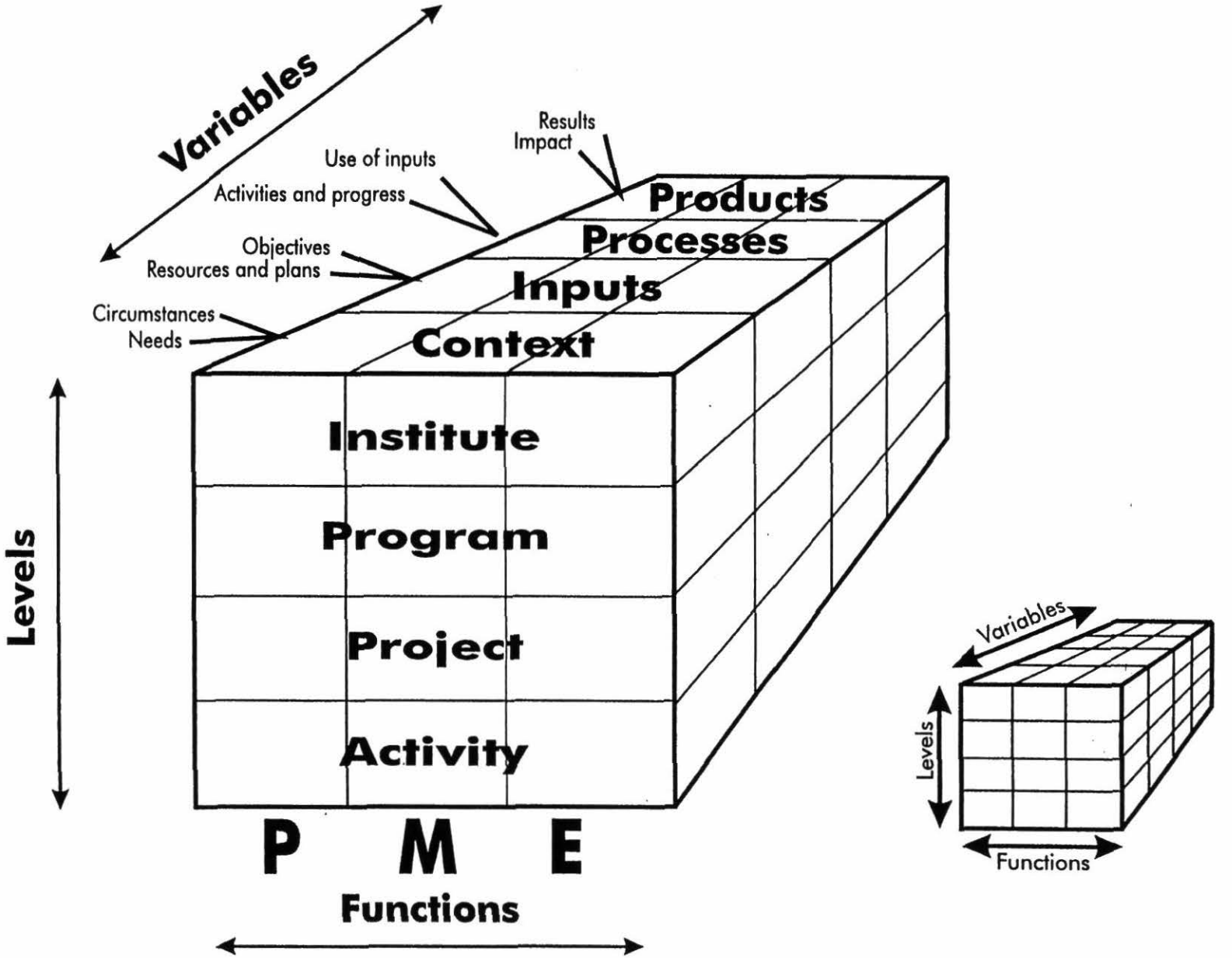
Monitoring

- Adjust
- Continue
- Finalize

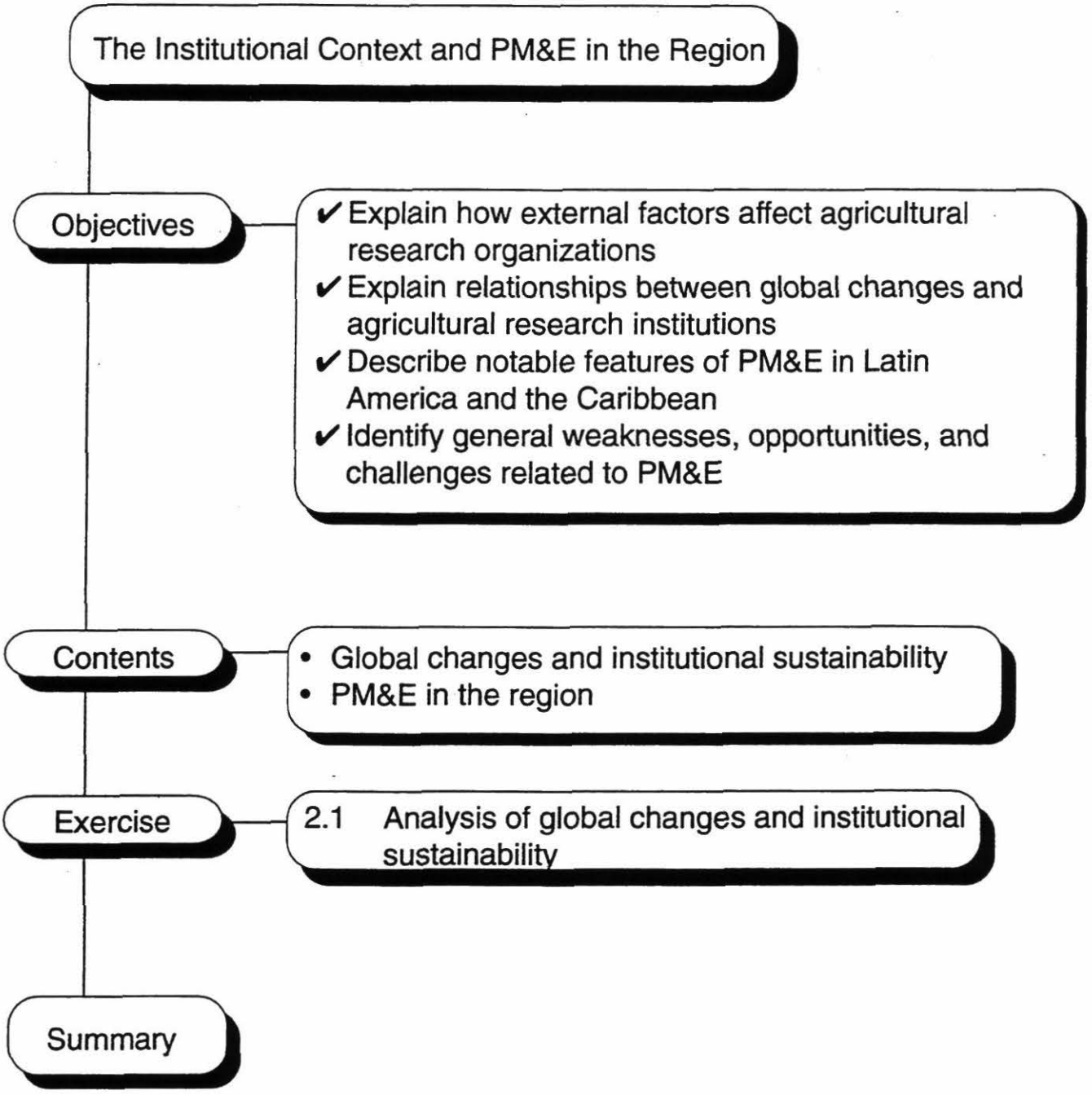
Evaluation

- Disseminate results
- Redesign research
- Negotiate policies
- Report

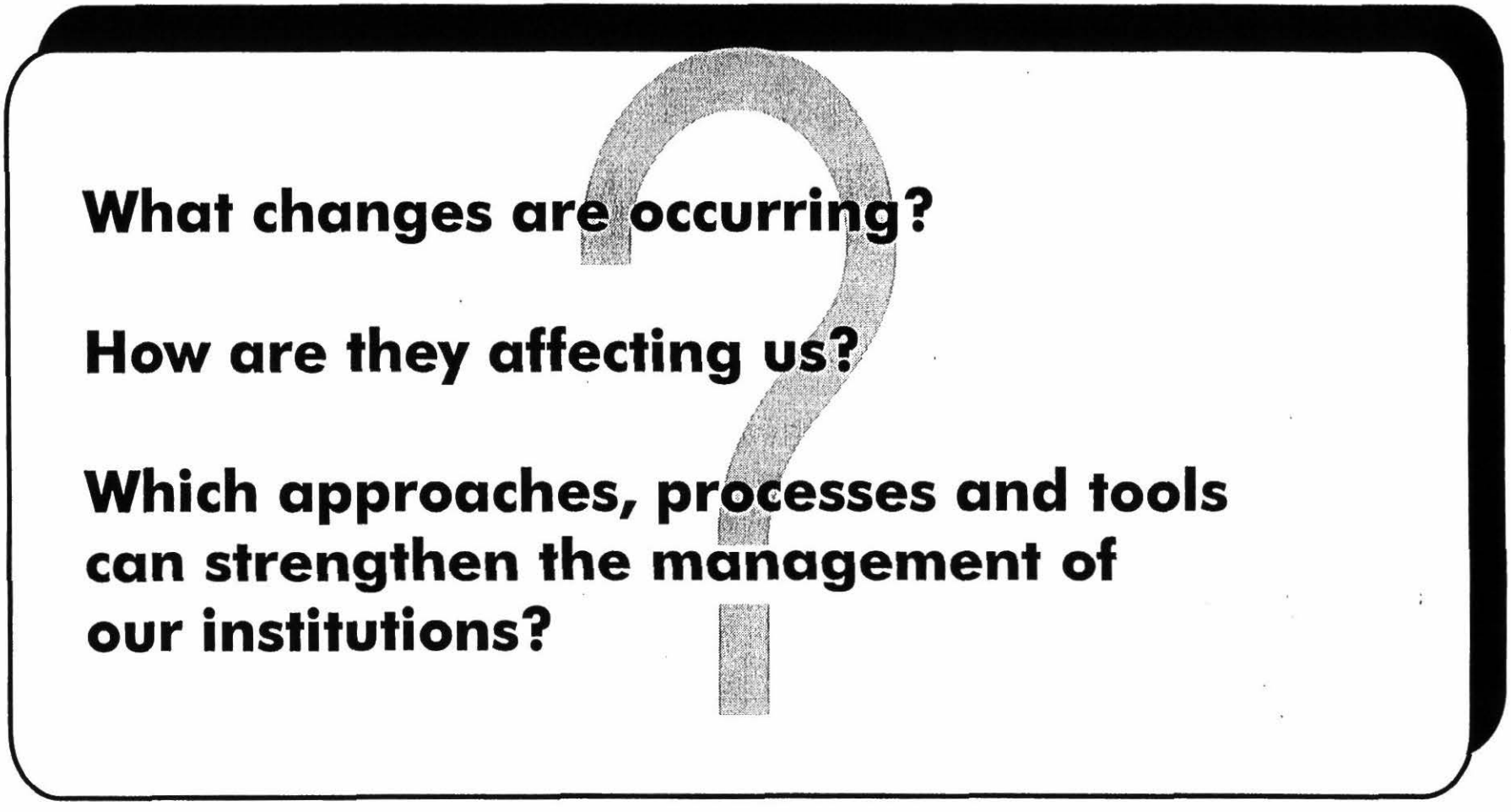
Components of a Management System



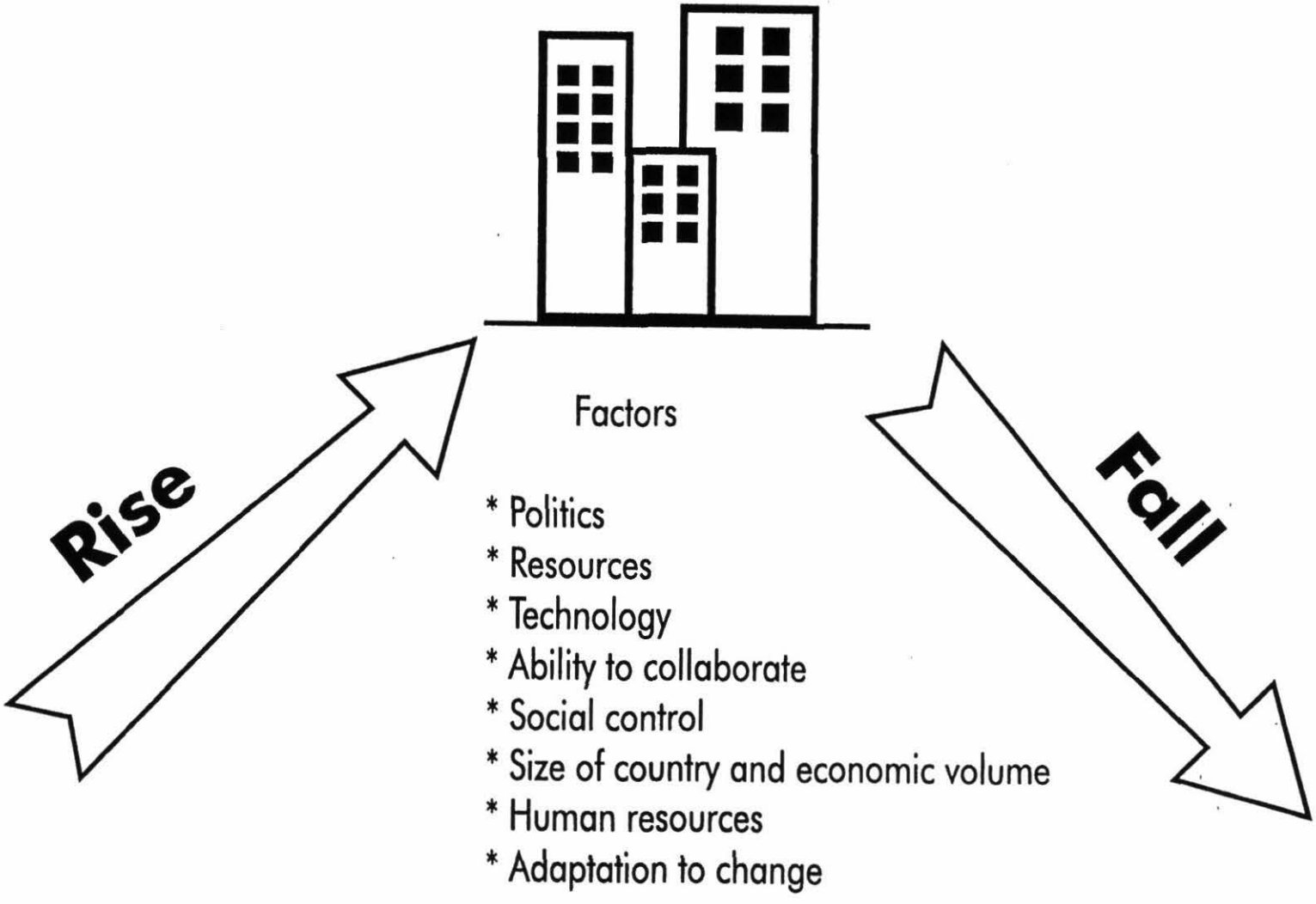
Flowchart for Sequence 2



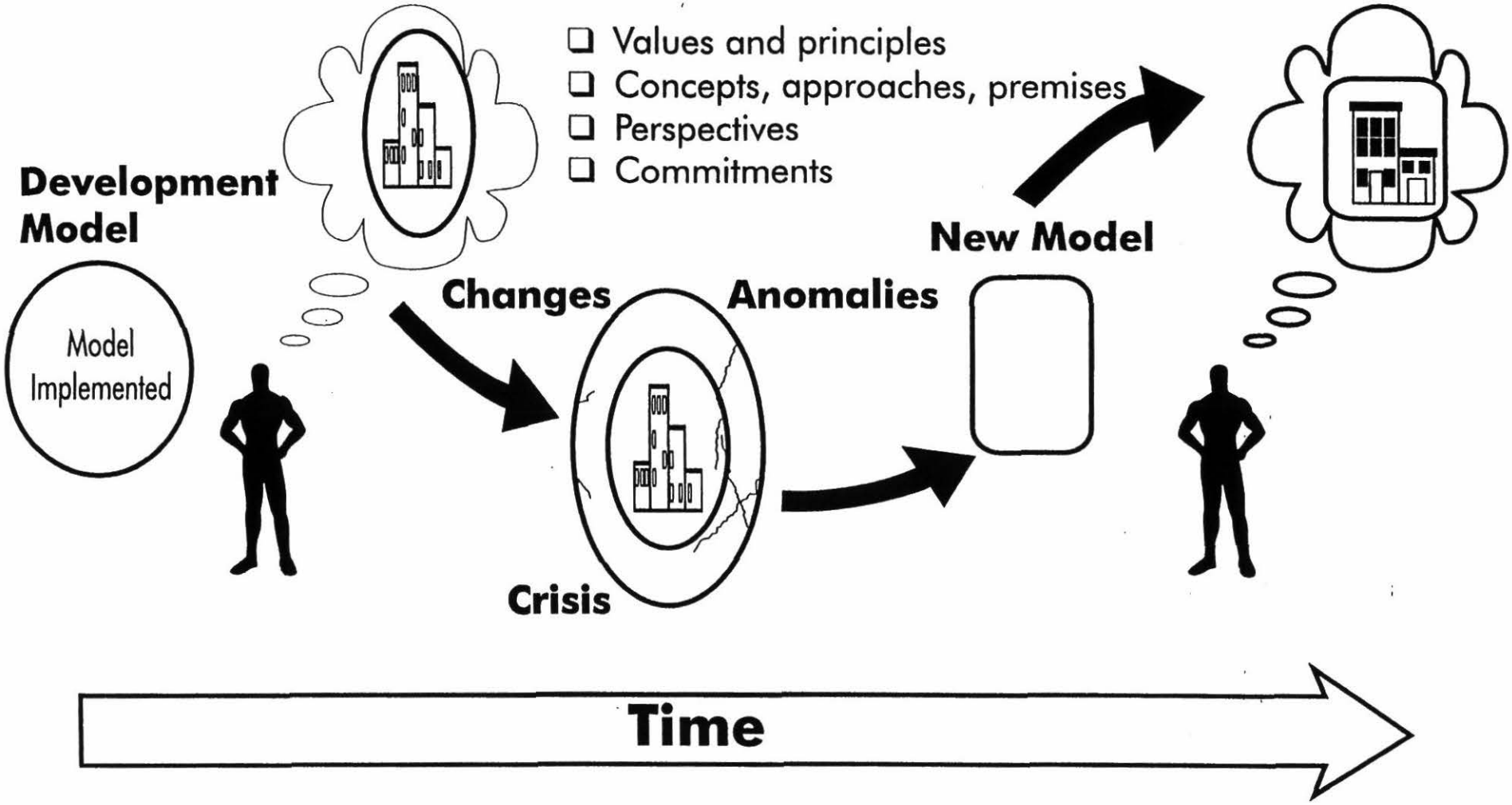
Context changes — Questions



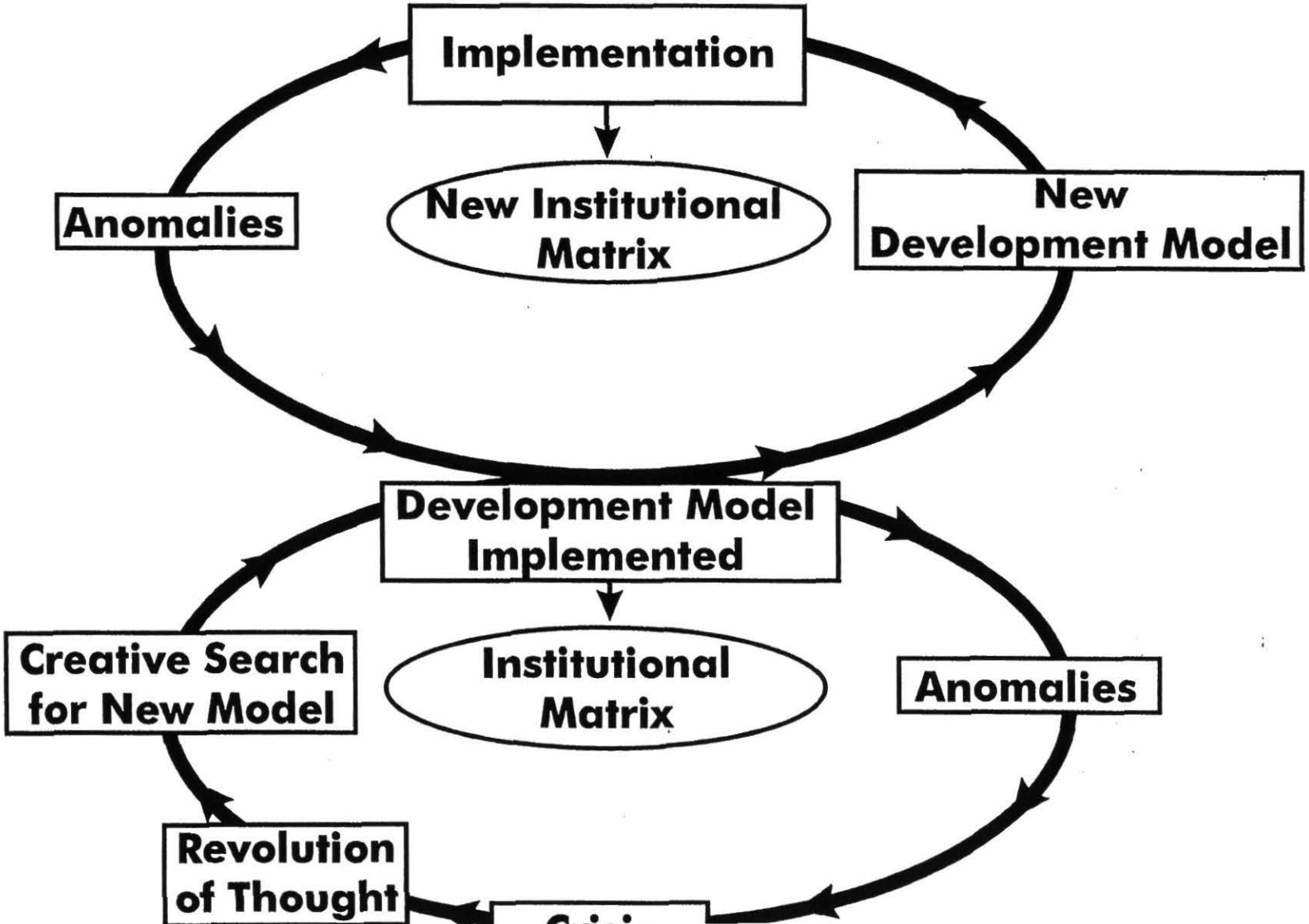
Rise and Fall of Development Models

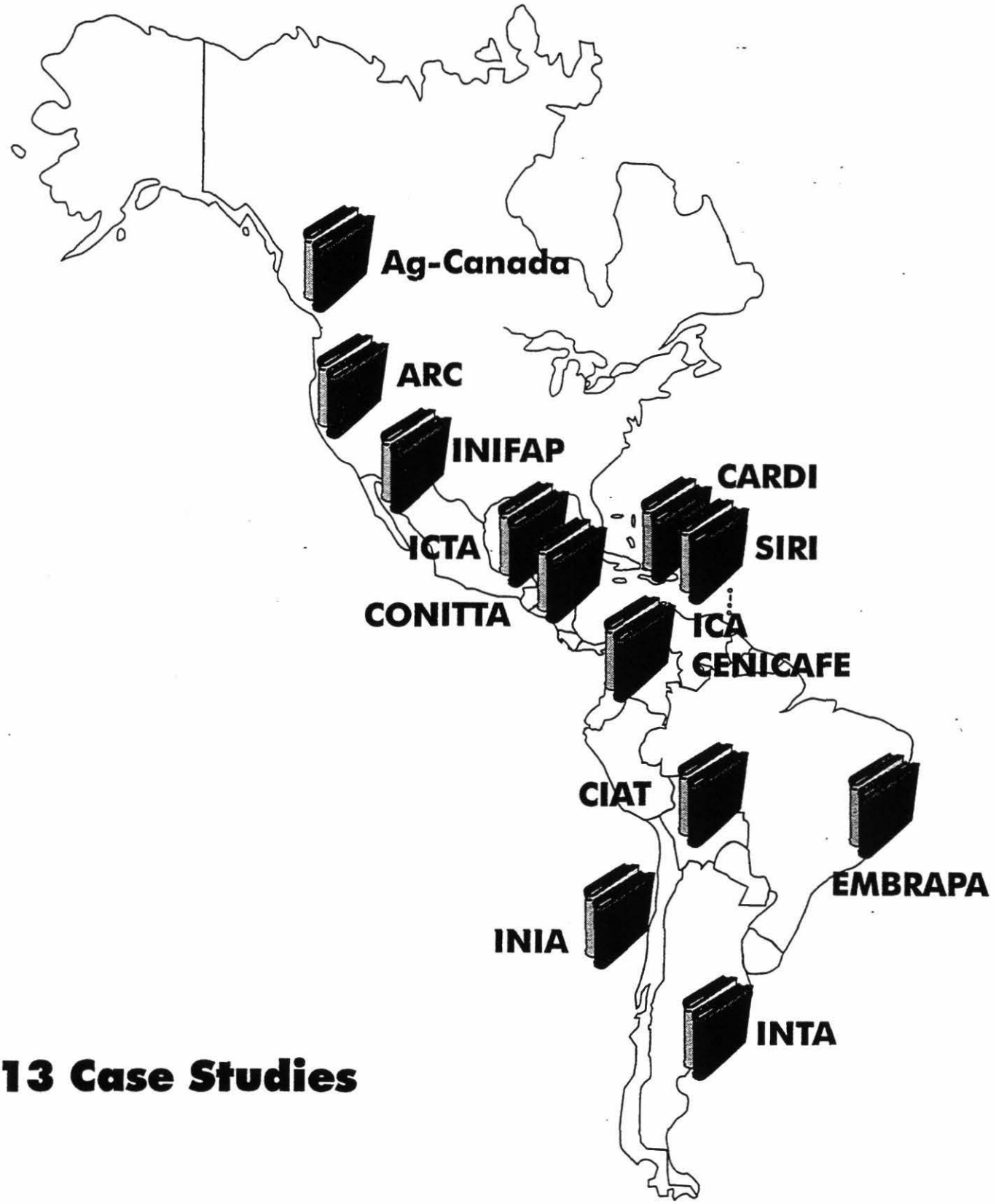


Relationship between Global and Institutional Changes



Relationship between Global and Institutional Changes





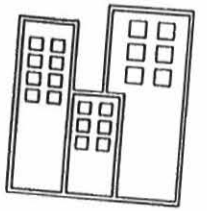
13 Case Studies

Status of PM&E in the region

- ✔ Much experience
- ✔ Little systematization
- ✔ Little strategic planning
- ✔ Little institutional evaluation
- ✔ Little user participation
- ✔ Little use of the results
- ✔ Lack of training

Status of M&E in the Region

Size of Institutions



Complex, bureaucratic, successful models

Beginning to develop

Monitoring

Methods and formats for frequent and informal use

Operative level

Few cases of verification of development

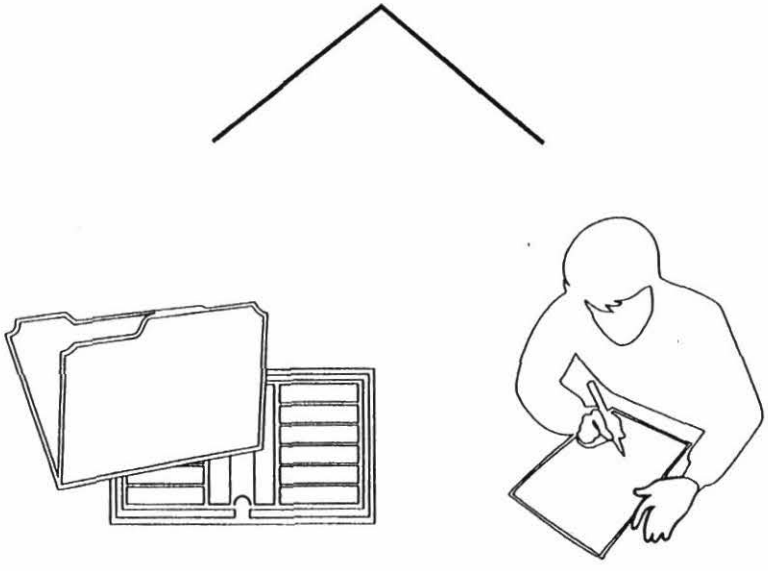
Evaluation

External ⟶ Projects/Centers

Internal ⟶ Programs

Status of M&E in the Region

Monitoring



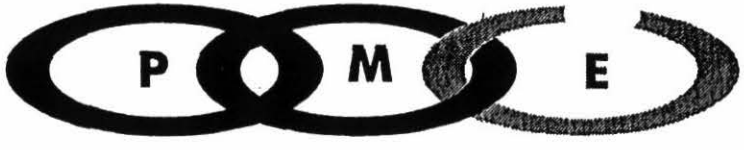
Bureaucratic

Operative level

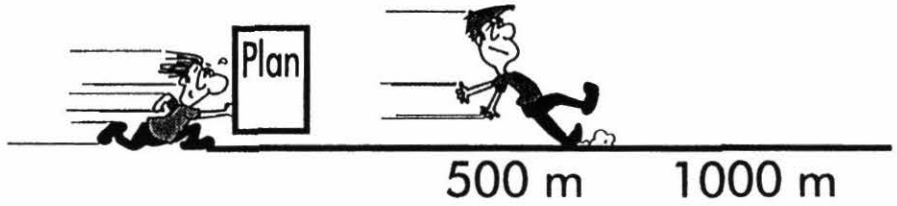
Evaluation

Weakest link in the process

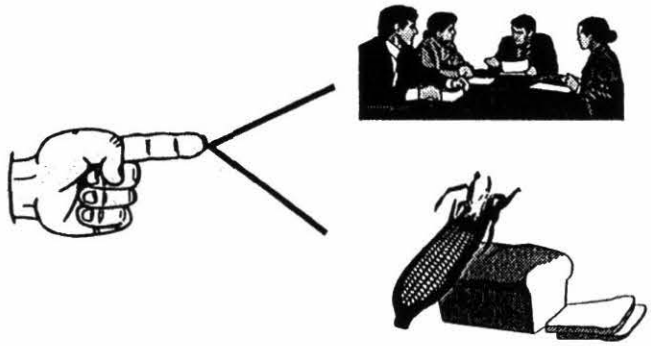
Cannot distinguish from other components



Status of Planning in the Region



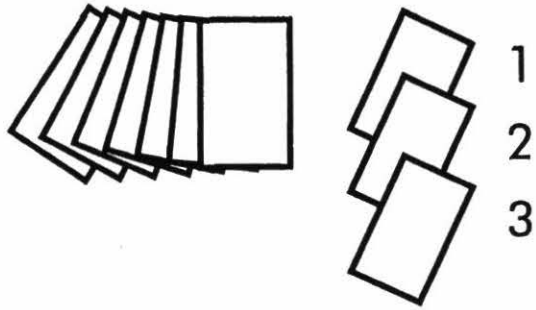
Medium-term plans



Initiative by

- Programs
- Products

At the regional level

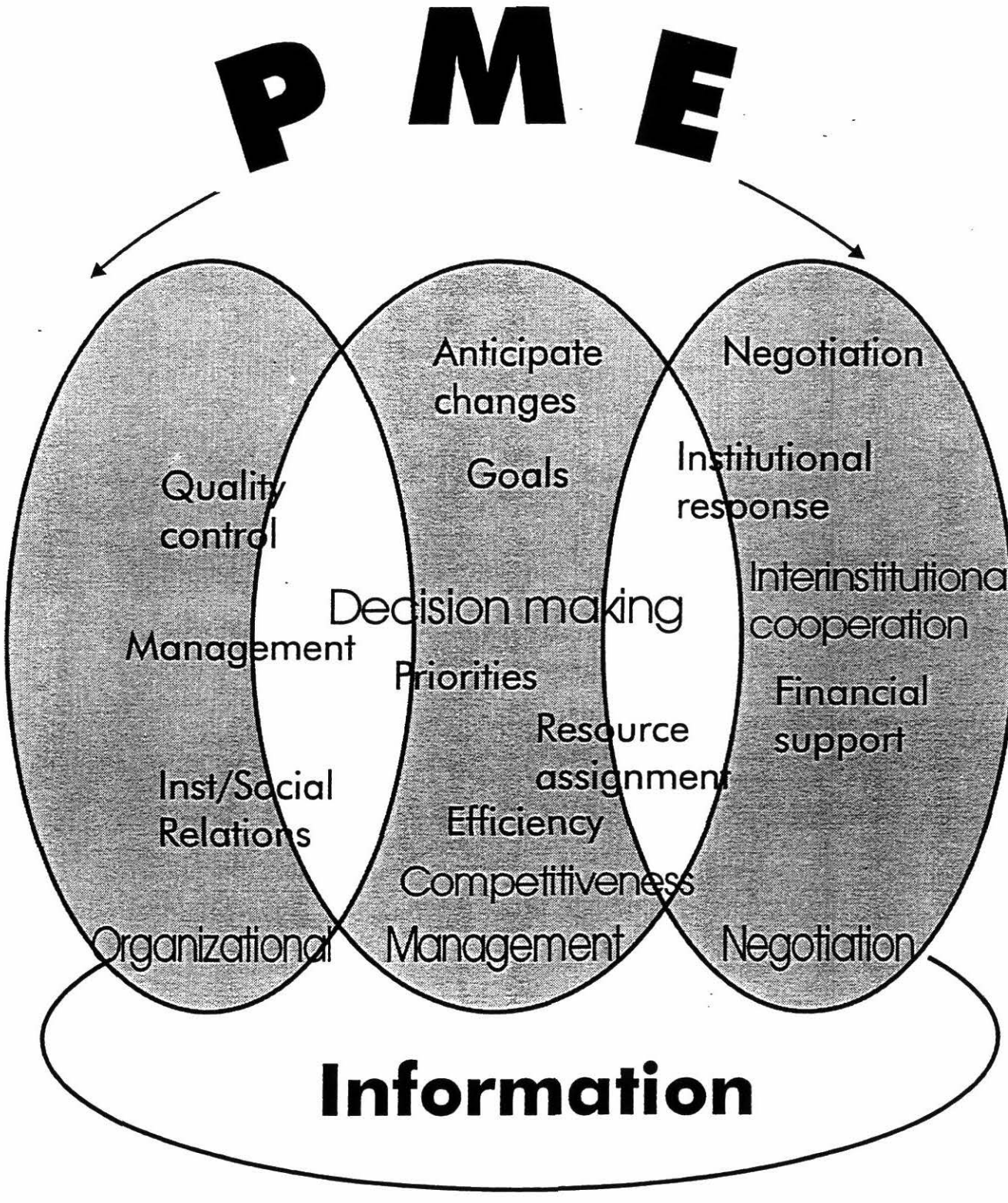


Prioritized and by projects

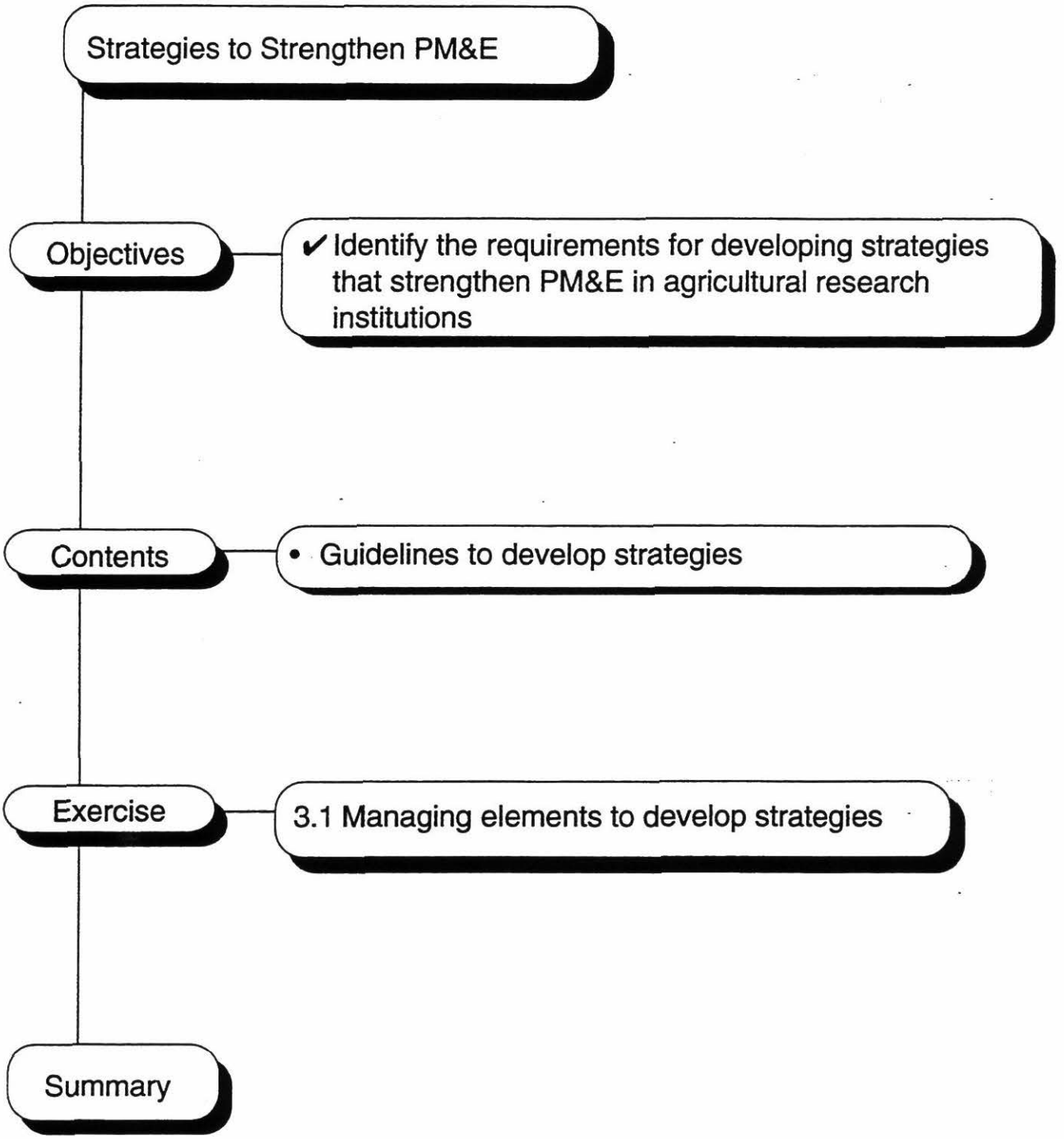
PM&E: Challenges & perspectives

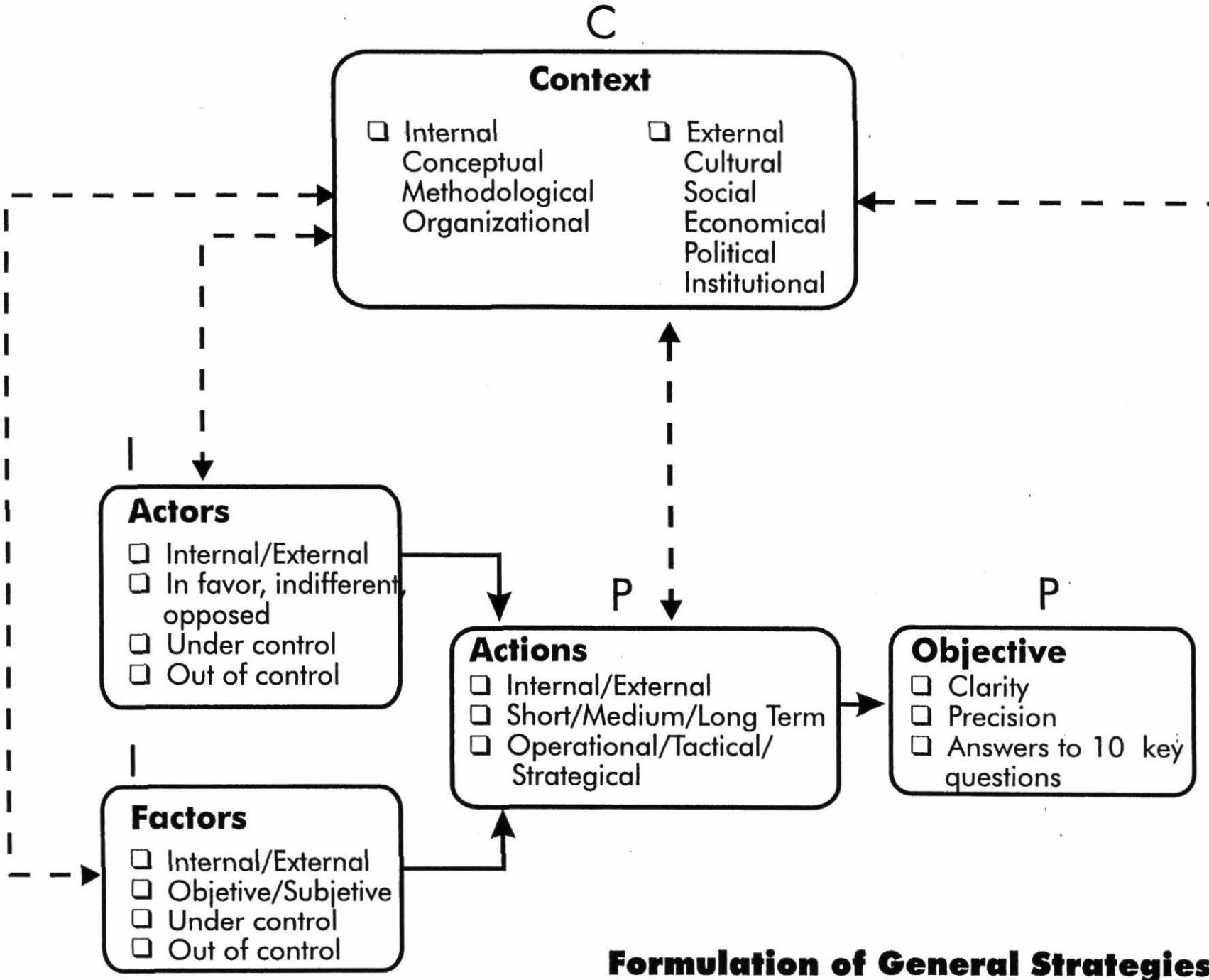
- Strengthen conceptual frameworks
- Highlight pros and cons
- Use PM&E in management
- Participation and decentralization
- Implement strategic planning
- Manage PM&E
- Strengthen human resources

Contributions of PM&E



Flowchart for Sequence 3





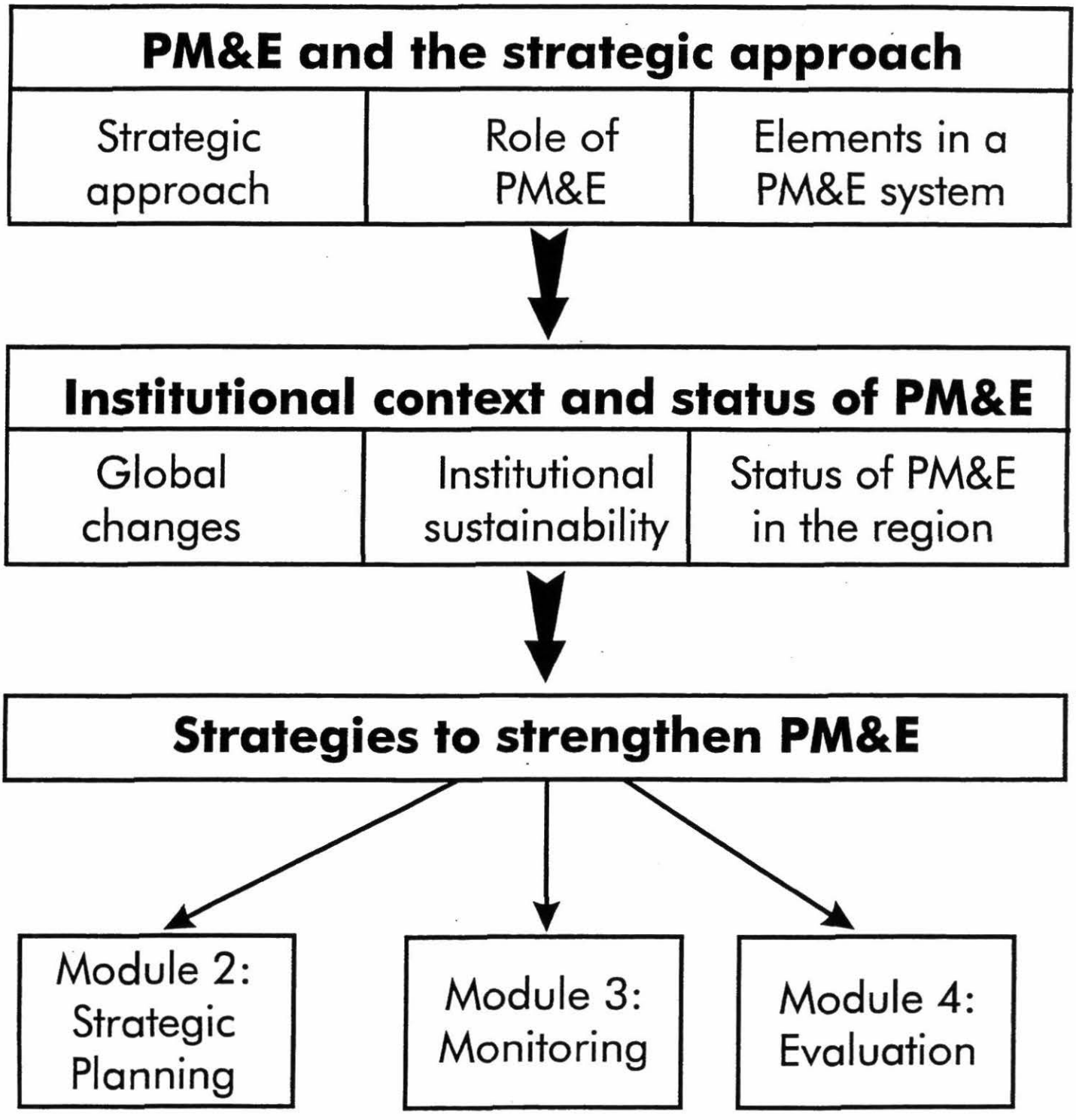
Formulation of General Strategies
CIPP Approach

APPRO 33

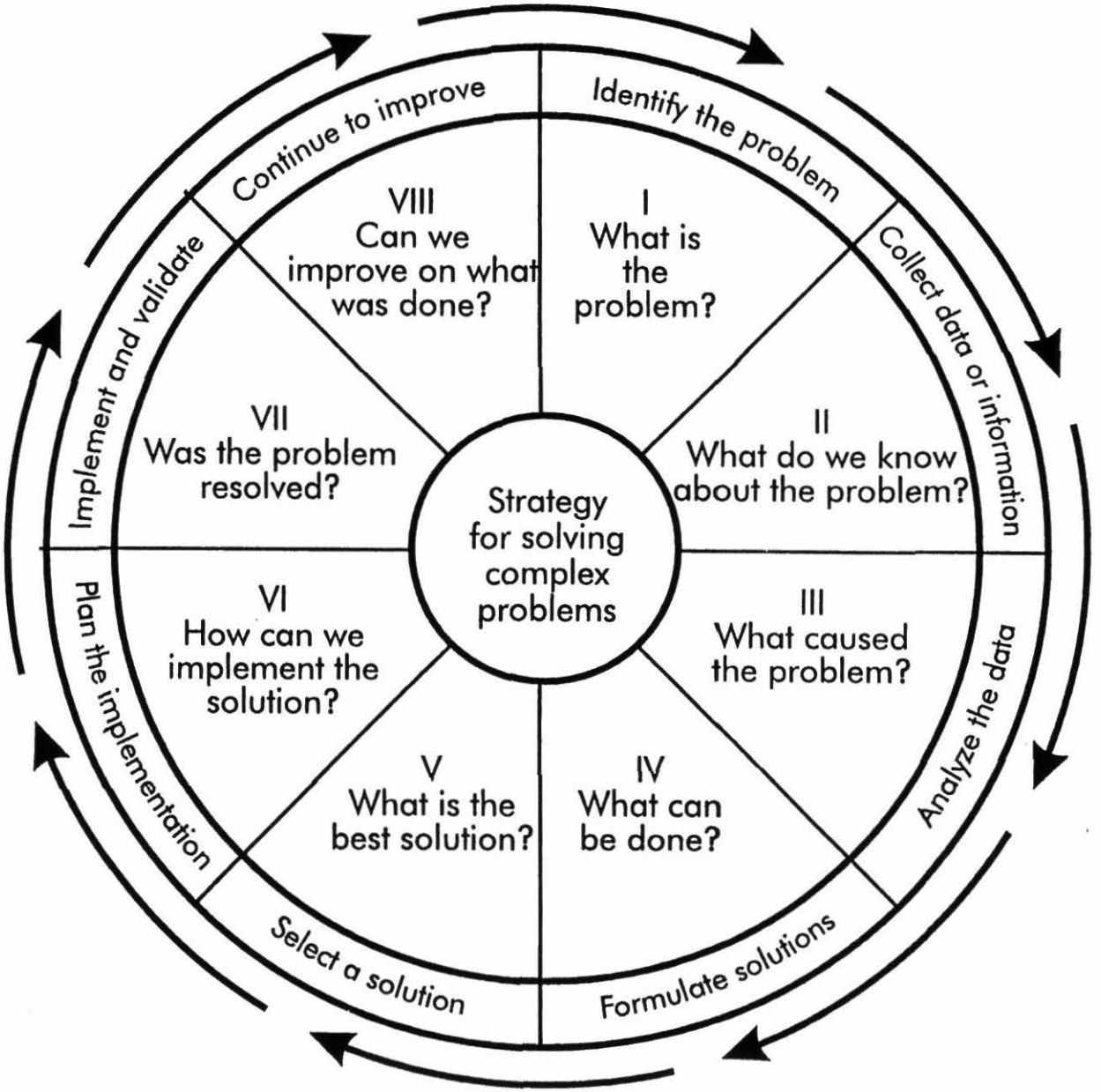
Steps to develop a strategy to improve PM&E

- ✔ Diagnosis
- ✔ Formulate preliminary proposal
- ✔ Review proposal with actors involved
- ✔ Circulate draft for comments and suggestions
- ✔ Review second draft with selected actors
- ✔ Incorporate new suggestions
- ✔ Present proposal to top management for approval
- ✔ Design a diffusion and implementation plan

Summary of Module 1



Eight-step strategy for solving complex problems



Five-stage Strategy to Solve Complex Problems