EVALUATION OF UPLB's INSTITUTIONALIZATION OF THE TECHNOLOGY EVALUATION, DEVELOPMENT AND PROMOTION SYSTEM (TEDPS)

Study Leader:
Jaine C. Reyes

Co-Study Leader:
Ma. Lourdes C. Torno

Implementing Unit:
RESEARCH MANAGEMENT CENTER
College of Economics and Management
University of the Philippines Los Baños

Starting Date:
1 March 1998

Completion Date:
28 February 1999

Source of Funds:
UPLB Basic Research Fund
Accounting Code: 88C7330
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Review of Literature</td>
<td>5</td>
</tr>
<tr>
<td>Methodology</td>
<td>17</td>
</tr>
<tr>
<td>Discussion of Results and Findings</td>
<td>20</td>
</tr>
<tr>
<td>Summary and Conclusion</td>
<td>40</td>
</tr>
<tr>
<td>Problems</td>
<td>44</td>
</tr>
<tr>
<td>Recommendations</td>
<td>45</td>
</tr>
<tr>
<td>Literature Cited</td>
<td>60</td>
</tr>
<tr>
<td>List of Personnel Involved</td>
<td>61</td>
</tr>
<tr>
<td>Financial Report</td>
<td>62</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 1  -  Revised Flow Chart of Processing of R&E Proposal
Figure 2  -  Revised UPLB R&E Proposal Form

LIST OF APPENDICES

Appendix A  -  List of Designated TEDP Coordinators
Appendix B  -  General Framework for Internal Technology Evaluation and Development
Appendix C  -  A Pilot on Technology Assessment and Promotion: The Case of UPLB’s Technology Evaluation, Development and Promotion System
Appendix D  -  Flow Chart of Mature Technology Processing
Appendix E  -  Assignment of TEDP Coordinators
Appendix F  -  Original Flow Chart of R&E Proposal
Appendix G  -  Original UPLB R&E Proposal Form
Appendix H  -  Research Instruments Used
The study generally sought to evaluate and assess the institutionalization of the TEDPS at UP Los Baños. It specifically aimed to: 1) describe how UPLB institutionalized the TEDPS as a strategy in research development management; 2) identify aspect/s of the TEDPS that would need to be either modified or reinforced; 3) pinpoint factors that hindered and facilitated the institutionalization of the TEDPS; and 4) recommend policy and action plan for further improvement of TEDPS implementation.

The study used descriptive statistics and qualitative method. Data were collected using personal interviews and review of secondary information from pertinent documents. An interview schedule with open-ended questions was prepared to serve as a guide for the interviewers. Two seminars/dialogues with all the respondents were conducted to validate results of interviews.

The following key people were interviewed: former UPLB TEDPS coordinators; incumbent research and extension coordinators of UPLB; key personnel from TAPI, a DOST agency; participants of the TEDPS video production; selected staff of OVCIE; and selected staff of DFI and BAO.

UPLB was able to institutionalize the system of TEDPS review process more at the center/institute level than in the college or university level. The system, however, was not identified or recognized as TEDP. The study found that the TEDP system at the university level, was successfully initiated but was not sustained, hence, it eventually weaned.

Among the facilitating and limiting factors in the institutionalization of TEDPS were the lowering of the nexus of decision-making; the bringing about of prototype technologies and delivery of concrete output; unsustainability of TEDPS activities due to change in leadership and no funding for extension/promotion activities; and UPLB’s being not mandated to commercialize research results. Modifications needed to improve TEDPS were also mentioned.

Among the recommendations for UPLB that need to be addressed are: incorporating marketing and commercialization as part of UPLB’s R&E mandate; encouraging faculty and REPS to conduct consultancy/technical assistance to private (local) firm four days a month on official time without compromising instruction, research and extension functions, and performance of tasks; encouraging R&E activities to include development of materials; academic departments to concentrate on instruction, and R&E functions intensified in institutes and centers.
BACKGROUND OF THE STUDY

Many of the researches in the University of the Philippines Los Baños are underutilized, if not unutilized, by end-users. The university may not have subjected the research outputs to financial, economic, and environmental assessment before disseminating them. Aside from this, a clear cut policy or a system that will guide UPLB researchers in technology development, evaluation, and promotion may be absent, unimplemented, or unoperational.

The common allegation that UPLB scientists and engineers produce research outputs (research results or technology) which have no contribution to national development or to meeting the needs of the client can be further verified with a system that will link R&D or technology development to utilization. Should there be research outputs with immediate benefits to the client or industry, their wide utilization has not been realized because of lack of dissemination, uneconomical and unattractive packaging, and limited supply availability.
This scenario indicates downgrading of UPLB's credibility and capability in contributing to poverty alleviation and eventually achieving national development. It also provides the rationale for the Technology Evaluation, Development and Promotion System (TEDPS) which was initiated at UPLB five years ago through a project funded by the International Development Research Centre (IDRC).

The TEDPS was introduced to "develop an institutional mechanism to integrate various technology and development through forging tighter interfaces among concerned offices in the university". Moreover, research will be linked with commercialization and technology transfer.

Hence, this evaluation study is very crucial to UPLB. It is hoped that its strengths can be identified and, therefore, can be reinforced. Also, the flaws and weaknesses of the system will be determined so that the original goal of the project, which was the improvement of UPLB's research utilization, will be achieved.

Moreover, expected outputs of this study like policy recommendations and detailed assessment report on the impact of the institutionalization of the TEDPS, would be very useful not only to the OVCRE but also to the research and extension units of the University.
OBJECTIVES OF THE STUDY

This study, generally sought to evaluate and assess the institutionalization of the TEDPS at UP Los Baños. It specifically aimed to:

1) Describe how UPLB institutionalized the TEDPS as a strategy in research development management;

2) Identify aspect/s of the TEDPS that would need to be either modified or reinforced;

3) Pinpoint factors that hindered and facilitated the institutionalization of the TEDPS; and

4) Recommend policy and action plan for further improvement of TEDPS implementation.

SIGNIFICANCE OF THE STUDY

State colleges and universities in the country realize the importance of a research and extension system (R&E). The matter is not simply putting the system in the organizational structure but what is important is to make the system work.

UP Los Baños, known for having research centers of excellence, caters to the needs of the Filipino people especially in the field of agriculture, forestry and natural resources. Hence, it is a working imperative on UPLB to have monitoring and evaluation system.
This evaluation study aims to assess the institutionalization of TEDPS, a mechanism that is supposed to facilitate the R&E system of UPLB. The result of this evaluation will be useful not only to the UPLB Office of the Vice Chancellor for Research and Extension (OVCRE) but also to the research and extension (R&E) units of the University. Eventually, this system may be adopted by other UP autonomous units as well as other state colleges and universities.
BACKGROUND OF TEDPS

Based on UPLB External Review Committee findings, UPLB’s researches constituted almost 80% of the country’s research outputs in agriculture, forestry, and related areas, but only a few of these outputs were used by end-users. Most of UPLB’s research outputs, were not able to cater to the needs of the producers and businessmen. This may be attributed to a lack of technology assessment. UPLB overloaded to subject its research outputs to practical, financial, economic and environmental soundness tests.

While there was a standard (R&E) system that the UPLB followed, it still lacked an institutional mechanism that will integrate and interlock research evaluation, development, and promotion system among the different units. This institutional mechanism was introduced as the Technology Evaluation, Development and Promotion System (TEPDS). This system was envisioned to link the University’s commercialization, technology transfer and extension-communication function.

The TEDPS was designed to “develop a mechanism that would facilitate the use of research results/outputs”. It was a two-year project implemented in March 1991 with
the financial support from the International Development Research Centre (IDRC), Canada.

The long-term goal of the project implementors was to institutionalize the TEDPS in UP Los Baños. The specific objective was to assist UPLB research units in focusing their research and technology development program and in promoting their research results and technologies.

The project was able to accomplish the following outputs. It was able to

1) Designate a TEDP coordinator at the research unit level such as department, center, and institute (Appendix A).

   In fact, it was able to encourage the UPLB management to designate 20 TEDP coordinators from the different colleges/institutes and centers.

2) Train TEDP coordinators on Technology, Assessment and Promotion

   The seminar-workshop was held from April 25 to May 3, 1991. It aimed to train TEDP coordinators to lead in designing a system of technology evaluation, development and promotion for their respective units.
3) Help the research units in developing an internal TEDP system and procedure with the TEDP coordinators as the lead.

The TEDP coordinators were assisted in accomplishing the following requirements: (1) checklist for evaluating research proposals considering the seven parameters: technical, social, financial, economic, environmental, institutional and political (Appendix B); (2) standards in determining mature technology; (3) identification of two mature technologies (based on their unit's standards); (4) internal procedure of peer evaluation (for research proposal and determining mature technology); (5) list of members of Technology Assessment and Promotion Committee; and (6) technology profile of their unit's mature technology.

4) Conduct a one to two-year "road test" of the TEDPS.

The TEDPS was pilot tested for two years in UPLB. Results of the pilot test can be found in Appendix C.

5) Have the Chancellor proclaim the TEDPS a university policy after it has been shown to be working.
The Chancellor at the time of the project assigned TEDPS coordinators to take the lead in each unit. Every unit was encouraged to use the standard forms and follow the flow of processing research proposals and mature technologies.

The following were the training activities that were conducted since the formal approval of the TEDPS on March 1991:

1) Training on Economic Assessment for Non-Economists;
2) Seminar-Workshop on Technology Assessment for TEDPS Coordinators;
3) Follow up Workshops for the TEDPS Coordinators;
4) Symposium on Cases of Research Commercialization and Utilization;
5) Seminar on Integrated Technology Promotion Campaign; and
6) Seminar-Workshop on Technology Assessment and Promotion for the Research and Development Institutes of the Department of Science and Technology, different State Colleges and Universities, and the Bureau of Agricultural Research of the Department of Agriculture.

Aside from trainings, to operationalize the project the following related outputs were produced:

1) Production of a Learning Module on Research Utilization;
2) Publication of the In-House Newsletter entitled “The TEDP Update”;
3) Documentation of Mature Technologies;
4) Evaluation of Mature Technologies at the University Level and
5) Production of Video and Print Cases of Mature Technologies

TEDPS had the following distinguishing features which encouraged its participants to be involved and have its system be put in place. TEDPS had criteria for evaluating research proposal (i.e. technical, institutional, political, economic, financial, social, and environmental safety). It was also able to make a chart indicating flow of processing proposals. TEDPS had routing slip to document action in every level. It had prescribed deadline for each level and if there is no action within which, the proposal is automatically endorsed to the next higher level. It had also encouraged researchers to collect certain standard data for evaluation and other purposes.
EVALUATION DEFINED

Since this is an evaluation study, it is important to discuss first what is evaluation compared to research. Worthen and Sanders (1973) distinguished evaluation from research. They explained that both are inquiry activities, only research is more of producing new knowledge while evaluation is more of judgment of worth of a program or project. In particulars, the authors defined the terms as follows:

1. **Research** is the activity aimed at obtaining generalizable knowledge by contriving and testing claims about relationships among variables or describing generalizable phenomena. This knowledge, which may result in theoretical models, functional relationships, or descriptions, may be obtained by empirical or other systematic methods and may or may not have immediate application.

2. **Evaluation** is the determination of the worth of a thing. It includes obtaining information for use in judging the worth of a program, product, procedure, or objective, or the potential utility of alternative approaches designed to attain specified objectives.

Based on these differences in definitions, this study's objectives were tailored more on doing evaluation than research.

The key words here are *obtaining information for use in judging the worth of a program, product, procedure* and providing *useful information for judging decision alternatives*. Evaluation, in this study, was used to determine the value of the institutionalization of TEDPS from which decision alternatives may be made for the R&E system of the University.
According to Mikkelsen (1995), evaluation results may be useful only if they would be put into action. It should not only cater to the needs of its stakeholders but to others as well who wish to use them. He enumerated the following uses of evaluation results which are very much useful for this study: (a) improve project organization and management; (b) improve planning; (c) assist decision-making; (d) assist policy-making; indicate where adjustments and further action is needed; (e) indicate where research and studies are needed; and provide information for a wider public.

INSTITUTIONALIZATION DEFINED

The question of whether TEDPS was institutionalized was a main concern of this study. According to Cuyno (1993), the theory guiding the TEDPS was the concept of institutionalization. He believed that institutionalization takes place if the organization has survived the following indicators: change in the leadership of the organization; continued appropriation of internal resources even for a lengthened period of time; assurance of certainty on the behavior of the organization; and the presence of a focus of responsibility for an innovation.

Cuyno (1993) stated that the principle of internalization is preceded by internalization and the process of acceptance and learning. If an innovation has been internalized or has been inculcated in the organization's mainstream, and
adaptability has taken place, then it is the only time that the innovation has been institutionalized.

RELATED STUDIES

One offshoot of the introduction of TEDPS was the awareness of university constituents to extend their research output to their end-users. Several studies were made on university-industry linkages and research utilization.

The common concern of TEDPS and other U-I studies are the linkages that need to be established between the university and the industry.

One of the related studies was the “University-Industry (U-I) Collaboration for Effective Research and Technology Utilization” conducted by Lumanta, et al in 1996. This involved U-I research collaboration in UPLB.

Their findings revealed that collaboration with the industry is possible with UP Los Baños. Most of the unit heads were receptive to such linkage but subject to restrictions. Industry preferred a “person-to-person” and “informal” type of linkage. They would rather deal with the researcher than with the institution due to the fear of going through bureaucratic procedures.
This research generated the following management implications which could be useful for the formulation of policy recommendations for the institutionalization of TEDPS:

- Creation of motivating factors to encourage more U-I linkages (i.e. elimination of bureaucracy and giving of incentives to researchers involved in industry-related undertakings)
- Emphasis on market-pull approach to technology commercialization
- Formulation of guidelines in promoting U-I collaboration
- Defining of market for UPLB’s technologies
- Consideration of perception on U-I linkages of university administrators/staff and important people in the industry

Another U-I linkage study in UPLB was done by Araral (1996). The study was about the case of the UPLB Dairy Training and Research Institute (UPLB-DTRI). Findings revealed that DTRI had to improve its performance in initiating linkages with the private sector. DTRI’s linkage performance was the outcome of its organization structure, resources, mandate, style of management, shared value, thrusts and programs, and monitoring and evaluation.

TEDPS favored “end-user oriented, problem-solving, and livelihood or income-generating research” Cuyno (1992) so it also addressed concern on research
utilization. Several research utilization studies could justify the importance of TEDPS at UPLB.

Reyes (1985), using the R&D Clear Flow Model, showed that six interrelated systems from the source to the client (research generation, research verification, formal organization, mass producer, communication, and client) can serve as “linking systems”. In other words, the process is not an inflexible linear flow where one system has to strictly follow another system. Moreover, Reyes (1995), in another study, presented the coping mechanisms of research and development organizations ways to facilitate the flow of technologies from the source to the client. In this study, the Institute of Plant Breeding was included as one of its sample academic research organizations.

Among those mentioned coping mechanisms which could be useful as basis for this study are the following:

1. Inclusion of research utilization in the RDOs policies and programs
2. Manifestation of high organization productivity prevention of administrative and financial difficulties affecting R&D activities
3. Redesigning of organizational structure to establish “interdisciplinary and matrix relationship”
4. Resourcefulness and flexibility in rectifying lack of resources for research operations
5. Manifestation of high organization productivity and competence
In the study, it was also emphasized that the research system should be provided with adequate policy and resource support. The need of close linkage between extension and client system and the research system to facilitate the research utilization process was also mentioned.

Navarro (1992) also traced and analyzed the process of generation to utilization of a technology (ethanol production technology). The focus was on the importance of communication in technology transfer. It was stated that if communication actors would be aware of the process of information exchange vis a vis the research-extension continuum, this research process could be cut short.

The study also emphasized the significant role of "industry linker or champion" in the research continuum. Active participation in all phases of the continuum encouraged the industry to become an "effective partner in realizing more relevant research and in producing applicable technology".

Another study made by Garcia (1994) entitled "An Exploratory Study on the Intellectual Rights as Applied to UPLB Commercialized Technologies". The study aimed to assess UPLB's technology generation, identification of commercializable technology, modes of technology transfer and the application of intellectual property
rights (IPR). Findings showed that most of the UPLB technologies, as viewed by the industry lacked industry testing (i.e. market potential analysis and long term viability).

Issues on technology commercialization like the low level of awareness of UPLB constituents as regards patent, duplication and overlapping of commercialized technology and piracy of ideas were also raised. This was attributed to inefficient record keeping and monitoring on the part of the UPLB administration. Without a clear cut policy, the same problems may perpetuate and these may be a never-ending issues in the R&D system of UPLB.
The objectives of this evaluation study were achieved through qualitative research method and descriptive statistics.

**LOCALE OF THE STUDY**

Since TEDPS was really meant to be initiated and institutionalized at UPLB, the researchers limited the interview to selected personnel of UPLB. Therefore, most interviews were done inside UPLB campus. However, an outside-the-campus interview was also conducted with TAPI personnel who were once participants of TEDPS. The said interview was done in the DOST, Bicutan.

**DATA COLLECTION/ANALYSIS**

The needed information were collected from both primary and secondary sources:

The following were the data collection procedures used:

a) Review of secondary data from pertinent documents was done

   Documents from OVCRE, from the Planning Conference, materials of the TEDPS Project (1991-1993) and other pertinent papers from Research and Extension units in the University were used as sources of secondary data for this study.
b) Primary data were gathered through personal interviews. An interview schedule with open-ended questions was prepared to serve as a guide for the interviewers. They were taped and later were transcribed. The interview was conducted with the following key people:

- Former TEDPS coordinators of the different units in UPLB
- Incumbent research and extension coordinators of UPLB
- Key personnel from TAPI, a DOST agency, who were involved in TEDPS
- Participants who were involved in the TEDPS video production
- Selected staff of OVCRE
- Selected Staff of DFI and BAO

c) Two seminars/dialogues with all the respondents were done to validate results gathered from the interviews. The first was held on 7 December 1998 at the College of Economics and Management Multi-Purpose Hall and the second on 25 February 1999 at the Abelardo Samonte Hall.

After compiling and categorizing the data gathered from the interviewees, the result of the study was presented in a seminar/dialogue for confirmation and validation. Revisions were made on some issues after coming up with a consensus.
On the first dialogue, among the matters discussed were: (1) Objectives of the Study; (2) Features of TEDPS; (3) Present Situation of UPLB R&E vs. Recommendations (from TEDPS Study); (4) Facilitating and Limiting Factors in the Institutionalization of TEDPS; (5) Aspects to Modify in TEDPS.

Prior to the first dialogue, a UPLB Planning Workshop was held on 3 December 1998 where the study leader of this study was one of the participants. Among those discussed were about UPLB R&E concerns.

On 8 December 1998, the initial presentation of results was presented to the Review Panel of the OVCRE. Among those presented were UPLB R&E concerns vis a vis the recommendations derived from TEDPS.

On 25 February 1999, highlights on policy recommendations such as systems and procedures in facilitating R&E proposal evaluation, conduct and promotion were presented to the respondents of this study for validation.

**SCOPE AND LIMITATION OF THE STUDY**

Due to limited time frame of the study, the researchers failed to interview the TEDP coordinators who, at the time of the interview, were on study leave or who were on consultancy.

Personal interview with the target client of the promotional materials of TEDPS was not done. Only two of those who were involved in the video production and symposia of those considered mature technology, were interviewed.
DISCUSSION OF RESULTS AND FINDINGS

A total of 28 respondents were interviewed. Out of 20 former TEDPS coordinators, only 11 were interviewed. One was on study leave, seven were no longer connected with the university and one was not interviewed because of his busy schedule. Eight R&E coordinators from each college in UPLB were interviewed except for one college when at the time of the study, there was no R&E coordinator assigned yet. The rest were key personnel from the university who have witnessed the implementation of TEDPS.

INSTITUTIONALIZATION OF TEDPS

The respondents were asked if they could recall TEDPS and its features. The following findings were derived from the results of interviews.

- TEDPS was associated with the activities it conducted.

When the TEDPS participants were asked to recall TEDPS, most of them associated TEDPS with the seminar-workshops, training programs, video production, and development of promotional materials which were activities of the project.
• TEDPS review process (the system) was internalized more at the center/institute level than in the college or university level.

All of the interviewees could no longer vividly recall TEDPS’ features. According to most of them, the review process was institutionalized but not the nomenclature or the label “TEDPS”. Some believed that TEDPS started was successfully initiated but was not sustained so it eventually weaned. When asked to rate the institutionalization of TEDPS in UPLB, with “5” as failing, “3” as passing and “1” as the highest score, the respondents gave an average score of 2.61. Most of them claimed that the idea got a passing score but the implementation and its integration in the system of the university got a failing score.

FACILITATING AND LIMITING FACTORS IN THE INSTITUTIONALIZATION OF TEDPS

The interviewees identified the factors that facilitated as well as restrained the institutionalization of TEDPS. The following were among those commonly mentioned factors:
**FACILITATING FACTORS**

- **TEDPS lowered the nexus of decision-making by focusing on collegial, interdisciplinary review process at the unit level.**

  TEDPS encouraged every unit to develop its own criteria and standards based on the framework proposed by TEDPS (Appendix B). Decision is made first at the unit level as to which proposal can be endorsed for approval by the dean then by OVCRE. This is one of the features that some preferred because they believed that it is in the unit level where the technical aspect of the proposal can be best evaluated.

- **TEDPS served as an evaluation, development and promotion system facilitates monitoring and evaluation by providing basic criteria for technology assessment.**

  TEDPS provided criteria for assessing if a technology was mature or not (Appendix C). Some interviewees found them useful especially before they could be promoted to the end-users.

- **TEDPS coordinator continued the flow from R&D to technology promotion and technology utilization.**

  One distinct factor that some respondents wanted in TEDPS was the appointment of a TEDPS coordinator for each college. A TEDPS coordinator was given assigned tasks (Appendix D) to monitor the R&D flow up to the technology promotion and utilization.
• **TEDPS came up with prototype technologies and delivered concrete output.**

Some interviewees could recall the activity they did in assessing the technologies that the different units presented. They found it very useful that they were able to trace how technologies were evaluated then promoted. Some TEDPS coordinators witnessed how TEDPS brought the technologies right before the eyes of its end-users through the video and other promotional materials that were produced.

• **TEDPS facilitated technology transfer.**

The project was basically designed to develop a system that will facilitate the use of the research output. The TEDPS was intended as this mechanism to facilitate technology transfer. In the study, 10 out of 11 of the TEDPS coordinators could recall some of the activities they did. Among these were the seminar on technology assessment, development of promotional materials like video production, and the documentation of mature technologies.

• **TEDPS ensured technology-client fit in the promotional activity.**

With the TEDPS in place, promotional activity will focus on the needs of the technology generator and the client as well.
LIMITING FACTORS

- **TEDPS activities were initiated but not sustained due to change in leadership and no funding for extension/promotion activities.**

  After the piloting in the span of five years, TEDPS underwent a transition in leadership. Although support was also given by the succeeding administrators, the university fund was not sufficient to continue the program. When the international funding stopped, the system eventually was not sustained particularly in extension and promotion activities. The review process reverted to the traditional university system which was biased on evaluation of proposals and completion of reports rather than what happens after research (promotion and utilization).

  Limited funds were available for research and but none for extension.

- **TEDPS was not effective under a separate research (ODR) and extension (ODE) office.**

  When TEDPS was implemented in UPLB, the University had two separate offices (ODR and ODE) for research and extension. As early as 1991, the TEDPS Project recommended the merging of these two offices (Appendix G). TEDPS would have been more successful then if UPLB had strengthened coordination between the two offices.
TEDPS needed integration of information through a functional data bank and retrieval system.

Some mentioned the discrepancy between the list of researches recorded in the unit or college and that of OVCRE (formerly ODR and ODE). This factor led to a big number of "unofficial researches". TEDPS failed to reconcile this because of the reluctance of some researchers to report their "clandestine" or personal projects.

TEDPS evaluation criteria were too strict and idealistic hence, at that time, few technologies passed the criteria.

Some claimed that only few would pass the criteria set by TEDPS in assessing technology. There were researchers who were not willing to pass through this bureaucratic process especially if there were funding agencies who were willing to support their project even without the approval of the administration.

The following were the limiting characteristics of TEDPS as viewed by the respondents:

TEDPS was more product-oriented.

Some respondents claimed that TEDPS was only good for products that were technologies in nature but not for outputs like management practices, etc.
• TEDPS had short duration to really permeate the behavior of the researchers and the whole organization

TEDPS was introduced so short a time (one year piloting) that before it could be internalized by every unit, it was already outmoded by the traditional system of evaluation in the university.

• TEDPS monitoring and evaluation system was too bureaucratic; TEDPS should be supported, and initiated by top management regardless of change of leadership.

Some researchers were not amenable to going through bureaucratic procedures. Some contended that their funding agencies were willing to pursue with their projects even without passing through this long process. On the other hand, the management could have considered the benefits of TEDPS for the university had there been continuous support regardless of change of leadership.

• TEDPS project provided funding for promotion/extension but UPLB did not sustain the allocation for extension.

After the financial support of IDRC, the funding agency of TEDPS, UPLB was not able to continue to provide funds for the development/packaging and piloting of promotional materials and extension activities. This, however, needs more budget allocation than research itself. The University had funds only for basic research.
quality outputs. There were some who are fearful of negotiating with private firms or the industry which in the long run hindered them from reaching out to their end-users. There were some who claimed that peer review would only lengthen the process of evaluation especially if vested interest was involved.

- **Researchers did not want to release their technologies/ product/results**

  There was a tendency for researchers to be overprotective of their products, thus no commercialization was done. TEDPS, however, would not be effective if this would be the attitude of researchers.

- **Points given to TEDPS coordinators in the QFPS not really a motivating incentive for active participation in the process.**

  Some TEDPS coordinators were not even aware of the points given them as TEDPS coordinators. Only a few appreciated and considered it as an incentive.

**ASPECTS TO MODIFY IN THE TEDPS**

Suggestions were also given by the interviewees as to what aspects should be modified in TEDPS to improve it and be used by the university.

- **Functional computerization of databank R&E information system installed**

- **Promotion to industry not only to the farmers’ sector**

- **Catering to processes/practices not only products**
• Simplification of monitoring and evaluation system;

• Provision of calendar of activities (including when requirements should be submitted)

• Strengthening of peer review (research proposal and technology assessment) process at the unit level

• Allocation of funds for extension and promotional activities both at the unit and university levels (not part of the basic research fund)

• Inclusion of publication and other promotional activity in the budget of proposals/projects

• Giving of authority and support to R&E coordinators (for them to work even without “points”) by the unit and the administration

• Provision of continuing education/re-tooling to researchers and extensionists (not only R&E coordinators) in the evaluation, development and promotion of technologies.

• Encouragement for the training participants to “re-echo” to their units in informal, “intellectual”, peer meetings.

• Conduct of annual R&E symposium at the university level to disseminate information on new technologies, emerging areas of concerns, products/research results to promote, staff expertise, and avenues for inter-unit/disciplinary work collaboration
• Conduct of less frequent monitoring and evaluation: bi-annual instead of quarterly reports be submitted for researchers and extensionists to focus on their technical activities instead of paper work

• Encouragement for more demand-pull, business/private sector participation in research and technology development

Considering that TEDPS was implemented more than five years ago, it is important to look at the application of TEDPS to the present situation of the UPLB. However, it is important to picture first what is the present situation of the R&E system in UPLB as well as describe the function of OVCRE in addressing one of the main thrusts of UPLB.

• Some researchers still do not want their work to be reviewed although technology assessment is appreciated and need for promotion is felt

• General framework and policy for technology assessment, development and promotion has yet to be established

• An Intellectual Property Office has already been set up under OVCRE

• There is a need to intensify resource generation to accommodate investment for product packaging, piloting and development of promotional materials not only for R&D

• A review of the present R&E thrusts is needed.

• An office of Vice Chancellor for R&E has been set up and now is operational.
An overlap/duplication of research efforts takes place because:

- research proposals are submitted directly to funding agency
- proponents do not furnish ODR/OVCRE copies of proposals/research reports
- inadequate database/information system in support of ODR/OVCRE’s monitoring function

Life of most researches stops at research reports because no fund allocation for the development of promotional materials (videotapes, brochures, exhibit panels, business fora) as well as in assessing and evaluating research products

THE R&D ARM OF UP LOS BAÑOS

The Office of the Vice Chancellor for Research and Extension, aside from assisting the Chancellor in coordinating research and extension programs of UPLB, it also performs the following functions:

- Oversees the development and implementation of research and extension programs of the University.
- Serves as Secretary of the University Research and Extension Council (UREC)
- Initiates innovation techniques for efficient planning, implementation, performance evaluation, and reporting of research and extension in the University
- Effects increased output of technical and popular publications and implement an extensive and efficient distribution system
• Coordinates staff development of personnel in research, extension and professional categories
• Assists in resource generation and in the establishment of inter-institutional linkages in research and extension; and
• Undertakes related activities that the Chancellor may assign

The research thrusts of the OVCRE are the following:
• sustainable productivity and efficient resource utilization premised on ecological balance;
• optimal rural and urban development;
• appropriate technologies for processing industries;
• basic research and cutting-edge technologies;
• indigenous knowledge systems and Philippine culture.

The OVCRE extension program is geared towards its goal of promoting rural development through equitable, sustainable and ecologically balanced agro-industrial production systems and enriching Philippine culture.

Among its extension agenda are:
• to develop or test extension policies, models and approaches toward their wider application in the country;
• to respond to development issues, problems, changing needs and demands of its various clientele;

• to disseminate and apply the results of research and other relevant information and social technologies, towards addressing issues and problems from the environment;

• to contribute towards improving the quality of life of the people in the countryside through the improvement of agricultural production, environment protection, better nutrition and health, and moral upliftment

In the December 1998 Year-End UPLB Planning Workshop, the OVCRE presented its R&D and Extension concerns which when analyzed, the TEDPS report in 1993. The following table shows the present UPLB R&E concerns with the corresponding recommendation that the researchers have inferred based on the interviews and the materials gathered.
<table>
<thead>
<tr>
<th>UPLB R&amp;E CONCERNS (Year-End 1998 UPLB Planning Workshop)</th>
<th>RECOMMENDATIONS (From TEDPS Study)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* R&amp;E not in line with mandate</td>
<td>* Revise/simplify M&amp;E system (modified TEDPS)</td>
</tr>
<tr>
<td>* Unregistered R&amp;E activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inter-unit/disciplinary R&amp;E to avoid duplication</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>* UPLB’s R&amp;E thrusts not updated</td>
<td>* OVCRE - initiated R&amp;E strategic planning workshop to identify and update thrusts and priorities</td>
</tr>
<tr>
<td></td>
<td>* OVCRE to have a yearly calendar of activities</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>* Weak R&amp;E coordination</td>
<td>* R&amp;E coordinator in each college/institute/center</td>
</tr>
<tr>
<td></td>
<td>* Upgrade functions of R&amp;E coordinators to include those of TEDPS coordinators</td>
</tr>
<tr>
<td></td>
<td>* Encourage inter-unit/disciplinary R&amp;E team</td>
</tr>
<tr>
<td></td>
<td>* More business fora</td>
</tr>
<tr>
<td></td>
<td>* More participation in exhibitions</td>
</tr>
<tr>
<td></td>
<td>* Strengthen TBI and S&amp;T park</td>
</tr>
<tr>
<td></td>
<td>* Encourage technical assistance/consultancy to private industries (especially local firms)</td>
</tr>
<tr>
<td>Need for electronic R&amp;E database</td>
<td>* Clarify/Identify client/public</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>* Expedite; necessary for the OSIS (One-Stop-Information Shop)</td>
<td></td>
</tr>
<tr>
<td>* In any project, an SOP for R&amp;E personnel (like TEDPS coordinator) to collect standard data for evaluation and other purposes (regardless of formats)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>An OSIS (separate from STARRDEC)</th>
<th>* Inventory/consolidate R&amp;E promotional materials (e.g., video, exhibit panels, brochures)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Scout for viable location of the OSIS</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Not all R&amp;E personnel aware of UPLB’s role in STARRDEC/PCARRD’s NARRDN</th>
<th>* A seminar/dialogue on STARRDEC/PCARRD- NARRDN</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Credit for R&amp;E activities</th>
<th>* “Reward” or credits beyond the point system (e.g. support facility, award)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Need to develop strategies to commercialize technology and generate funds to support R&amp;E activities</th>
<th>* Contract research for limited/selected commodity or areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Encourage technical assistance/consultancy to private industries (especially local firms)</td>
<td></td>
</tr>
<tr>
<td>Ownership of research outputs</td>
<td>* Pro-active resource generation (e.g., visits to embassies/development funding agencies/NEDA/CALABARZON industries/firms for potential resource of funds/collaborative R&amp;E activities)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| * Need to develop strategies to commercialize technology and generate funds to support R&E activities | * Review MOA/MOU with funding agencies  
* A separate corporate/patent lawyer  
* Encourage researchers to patent work before publications (and increase “point” allocation for patents, higher than publication)  
* UPLB to promote its own R&E activities (except for contact research) |
|                           | * More business fora  
* More participation to exhibitions using “classy” promo materials  
* Clarify types of technologies and encourage product-oriented/tangible technologies  
* Funds for extension activities classified under “basic research”  
* Lobbying; legislative support  
* More media exposure |
Suggested Modifications in Flow Chart and Form Processing of R&E Proposals

A flow chart showing the complete procedure in processing R&E proposal as well as the units involved and their roles in the processing of R&E proposal is shown in Appendix E. Slight changes were suggested by the respondents as regards the duration of processing at the unit level and at the Chancellor's Office.

Most of the respondents agreed to change the duration at the unit level from 7 days to 5 working days. At the Chancellor's Office the duration of processing was changed from 5 days to 3 days. The modified version of the flow chart is shown in Figure 1.

TEDPS also came up with a research proposal processing form (Appendix F) which was revised in this study in accordance with the suggestions of the respondents and with the change of the present structure of the UPLB administration. Only the name of the offices of research and extension were changed to OVCRE. Figure 2 shows the revised form.
START

R&E PROPOSAL/TECHNOLOGY PROFILE

UNIT HEAD DEPT./INSTITUTE/CENTER
- Receipt of proposal
- Instruct REC to review Proposal
- Record REC endorsement
- Endorses proposal to College Dean

COLLEGE DEAN
- Review (Administrative, Resource, Institutional) for:
  - duplication
  - resource requirement
  - inter-unit & inter-unit/ institutional/interdisciplinary coordination
  - other implication
- Endorses to OVCRE

REC
- Review proposal in the presence of proponent for using internal unit criteria/standard.
  Headed by REC Chair/Coordinator

URERC
- Review/Evaluation (Comprehensive Interdisciplinary)

OVCRE
- Receipt of Proposal
- Creates Review Body
- Endorses to OVCRE

OC
- Approval of final document
- Official endorsement to funding agency
- Transmits to individual unit concerned

Abbreviations:
REC Unit Research and Extension Committee
URERC University Research and Extension Review Committee
OVCRE Office of the Vice Chancellor for Research and Extension
OC Office of the Chancellor

END
Revised UPLB Research & Extension Proposal Form No. 1

<table>
<thead>
<tr>
<th>A. UNIT</th>
<th>B. COLLEGE</th>
<th>C. OVCRE</th>
<th>D. CHANCELLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td>Received by College of</td>
<td>Received by OVCRE</td>
<td>Date Received by OC</td>
<td>Date Received by OC</td>
</tr>
<tr>
<td>Unit Head by OC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACTION TAKEN:</td>
<td>ACTION TAKEN:</td>
<td>ACTION TAKEN:</td>
<td>ACTION TAKEN:</td>
</tr>
<tr>
<td>✦ Forwarded to Unit Research and Extension Committee (REC)</td>
<td>✦ Returned to proponent for revision</td>
<td>✦ Sent to Referee</td>
<td>✦ Approved</td>
</tr>
<tr>
<td>✦ Returned to proponent for revision</td>
<td>✦ Received Revision</td>
<td>✦ Received Revision</td>
<td>✦ Official endorsement to funding agency</td>
</tr>
<tr>
<td>✦ Received Revision</td>
<td>✦ Favorably endorsed by Dean to OVCRE</td>
<td>✦ Favorably endorsed to the Chancellor</td>
<td>✦ Official endorsement for promotion and marketing</td>
</tr>
<tr>
<td>✦ Favorable endorsement by REC</td>
<td></td>
<td></td>
<td>✦ Copy furnished to proponent unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REC Chair</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✦ Favorably endorsed by Unit Head to Dean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Head</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2
UPLB was able to institutionalize the system of TEDPS review process at the center/institute level than in the college or university level. However, the system was not called TEDP. It was successfully initiated but was not sustained so it eventually weaned. When asked to rate the institutionalization of TEDPS in UPLB, most of them claimed that the idea got a passing score but the implementation and its integration in the system of the university got a failing score.

The TEDPS participants could recall TEDPS through the seminar-workshops, training programs, video production, and development of promotional materials which were conducted as part of the project.

The respondents suggested that the following aspects be modified in the TEDPS:
(a) functional computerization of databank; (b) R&E information system installed;
(c) promotion to industry not only to the farmers’ sector; (d) catering to processes/practices not only products; (e) simplification of monitoring and evaluation system; (f) provision of calendar of activities; (g) strengthening of peer review process at the unit level; (h) allocation of funds for extension and promotional activities both at the unit and university levels; (i) inclusion of publication and other promotional activity in the budget of proposals/projects; (j) giving of authority and support to R&E; (k) provision of continuing education/re-tooling to researchers and extensionists in the evaluation,
The following are the policy recommendations that the UPLB management, particularly the Office of the Vice Chancellor for Research and Extension (OVCRE) and the Business Affairs Office (BAO) and the UPLB-Development Foundation, Inc. (UPLB-DFI) may want to address.

These recommendations were based on the consensus of the respondents on the role of UPLB and affiliate agencies in the institutionalization of TEDPS. They were called to a dialogue to discuss what they perceive the UPLB management should consider in managing research and extension. Written comments of those respondents who were not able to attend the dialogue were also incorporated in the following recommendations.

For UPLB

- **Make marketing and commercialization as part of UPLB’s R&E mandate (study its fiscal and administrative implication)**

UPLB should not only concentrate on conducting research but also on commercializing and marketing its research outputs. It is about time that a mechanism to bring to the end-users these technologies, such as what is being proposed by TEDPS, should be adopted. It was suggested by one of the respondents that repacking or “retailing” UPLB technology to smaller economies of scale as an approach in transferring technology to client. The university can think of restructuring or assigning an office which can take care of these functions. The
administration will have to study its fiscal and administrative implications considering that it will mean additional human and physical resources.

One unit of UPLB tried to start proposing this recommendation but unfortunately, it was not considered by the Board of Regents. One interviewee suggested that the proposal should give emphasis to the role of the industry in this scheme. Such move should therefore be properly backed up by the UPLB management.

One respondent suggested that OVCRE should have a strong tie-up with the UPLB Science Park, considering that the latter is mandated to provide commercialization for UPLB technologies for entrepreneurship.

- **Encourage faculty and REPS to conduct consultancy/technical assistance to private (local) firm four days a month on official time without compromising instruction, research and extension functions, and performance of tasks**

  There should be a guideline for this recommendation aside from the existing permission to do limited practice of profession with private enterprise. A formal arrangement between the university and the staff should be set so as not to affect performance of the regular university functions. One respondent even suggested to have corresponding workload units for the “outside” service rendered.

- **Encourage REPS & Faculty to be “entrepreneurs”**

  The definition of entrepreneurship here was adopted from Left, as cited by Fajardo (1994). It is “the capacity for innovation, investment and expansion in new markets, products and techniques”.
Researchers and extensionists should be encouraged to sell and market their products especially to their end-users. If the university does not have the capacity to do this for them, maybe they should be encouraged to find the market for their research outputs. However, this does not mean that this should be done individually. Of course, this should be done in coordination with the unit concerned. They can also be encouraged to be “development entrepreneurs”. They should learn to consider first their users needs and be less profit oriented.

- **Let incentives/rewards be beyond honorarium or point system**

  The administration should be able to think of other ways of encouraging researchers to do researches not just because of the honorarium and credit points they receive. Respondents suggested that promotion (in steps, if not possible with grades) be done even without any call for promotion from the Department of Budget and Management.

  Also, basic research projects funded by OVCRE in UPLB should be provided with personal services allotment and not only for its MOOE.

- **Encourage R&E activities to include development of materials (e.g. products as research output, promotional video as extension output)**

  In writing research proposals, encourage researchers to include the implementation of the extension part which is to produce promotional materials about the research output/technology.
• **Do contract research and technical service only on limited areas/commodities.**

Contract research is only good for certain kinds of commodity. Studies on microorganisms, pathogens and the like are not advisable to be engaged in contract research. They can easily be “smuggled” especially if it is contracted by foreign funding agencies or local agencies with vested interests.

• **Academic departments to concentrate on instruction, and R&E functions intensified in institutes and centers.**

This recommendation may resolve the problem of research duplication. Academic departments usually end up having similar research with those of their affiliated research institutes/centers. This can be overcome if a formal agreement can be made as to which thrust should be given priority. Faculty from academic departments are encouraged to do their researches in collaboration with their research centers/institutes. Some suggested that if this happens the department should share with the administrative cost.

**For OVCRE**

• **Conduct strategic R&E planning workshop**

The Office of the Vice Chancellor for Research and Extension should conduct their own planning workshop for them to identify their vision, mission and goal (R&E thrusts and priorities). These can serve as their guide posts in planning their activities.
for the R&E system of the university. It is also through this that they can set direction and lead the research activities of the university toward targeted goals.

- **Revive features of TEDPS to strengthen marketing and promotion of UPLB research results and technologies**

  * **Technology evaluation and piloting before promotion**

  TEDPS proposes that only research findings that have undergone verification, validation, end-user reality testing and technical, social, environmental testing will be endorsed by the institution for promotion.

  * **Conduct of business fora and participation in exhibition**

  The OVCRE is in the best position to sponsor and to scout for business fora. It should also be active in leading the university in participating in exhibitions. The university should be given seed money for publication of research results, production of video or other promotional materials. This will encourage researchers to include in the proposal their extension plans for their research outputs.

  * **Inclusion of extension/promotion/publication allocation in R&D proposal/project budget**

  Researchers should be encouraged to include budget for extension plans like budget for possible promotional materials.
* R&E coordinator in each college, center or institute provided with authority, support and functions (similar to a TEDPS coordinator)

An R&E coordinator’s function is not a one man role. A recognized office with enough staff should be provided for each college R&E unit. Its function requires enough resources. One College (CFNR) had a set up similar to what is being recommended here.

- **OVCRE should not only deal with administrative matters only; technical supervision should be done by technical staff.**

OVCRE should start hiring technical staff who can facilitate the processing of technical matters. This office does not serve only to facilitate administrative matters. This office needs technical staff especially that projects that they have to review do not only address administrative concerns.

- **Fiscal control be separated from technical supervision in monitoring and evaluation**

OVCRE should see to it that the fiscal control of projects is different from managing the technical aspects of the project especially during monitoring and evaluation.

- **OVCRE Personnel**

  * **Review staffing pattern**

    The administration should include technical staff with defined technical functions. The existing administrative functions should be reviewed, they might just be duplicating other offices’ administrative functions.
* **Staff to undergo job enrichment/re-tooling/re-deployment of assignment**

OVCRE staff should undergo re-tooling by allowing them to attend job enrichment courses. It is also advisable to review their functions, they might be more efficient doing jobs in other offices. Some staff have been doing specific task for more than 5 years which can be rotated or re-assigned to other staff.

* **The additional personnel that OVCRE might need are the following:**

(a) an economist/business-oriented person who can be a “shrewd” assessor/valuator/negotiator to head marketing/commercialization of UPLB’s technologies/products.

(b) a specialized and assertive/aggressive corporate/patent lawyer to support IPO and expedite processing of copyright, patenting and technology valuation (royalties, market price).

© a staff to assist project development needs (e.g. packaging of proposals, preparing economic/financial feasibility) of UPLB units/R&E personnel (study implications to DFI and BAO).
Review Process: Monitoring and Evaluation of Proposals and Completed Works

* Review process operationalized at the unit level

Technical review process should be done at the unit level. This can be made possible by developing a standardized criteria in reviewing research proposals. This will minimize taking sides and can be less threatening especially if personal interests are involved.

* Re: Proposals submitted directly to funding agencies (FA)

- Proposals are being evaluated by FA, hence, they need not be evaluated by OVCRE (monitoring though is still necessary)
- OVCRE should be furnished with a copy of proposals and reports submitted to the FA for monitoring, facilitating process of appointments/payment "crediting" to work load, and protecting rights of researchers/extensionists and UPLB

* Transparency in selecting members of the panel reviewing proposal for basic research

A panel or a colloquium type is preferred in reviewing proposals.

* Install mechanism on how recommendations and research results of studies/projects be used

The following questions should be considered: Who reads/uses quarterly reports? How quarterly reports used? How are recommendations in the reports followed?
* Bi-annual instead of quarterly reports for monitoring purposes

Doing reports just for filing purposes is a burdensome task. Researchers instead of conducting their studies were writing administrative reports. Bi-annual monitoring is just enough so as to give more time for the researcher to discover more new knowledge.

If funding agencies require quarterly reports, OVCRE should be responsible to deal with the concerned agencies to let them realize its implication to the researchers.

- Computerization of database system to ensure completeness of information as well as efficiency in retrieval

It is about time that OVCRE considers computerizing its database. The information age requires a systematic retrieval of data at the shortest time.

- Before the start of the fiscal year or school year, a detailed calendar of R&E activities and SOP’s be prepared and distributed to all units

OVCRE can design a system of reminding all concerned constituents as regards the deadline of submission of reports, colloquium, dialogue, and other similar to that of the academic calendar being prepared by OVCI/Registrar.
• OVCRE should be strict in following agreement with Funding Agency

FA promotes and gets the credit for UPLB technologies/researches as well as expertise rendered by faculty and REPS.

Faculty and REPS are summoned to FA's meetings/activities without following the protocol.

OVCRE should seek legal rights over proposals which are pirated by FAs.

• Implement a proactive resource generation to supplement R&E funding

Make a directory of funding agencies (contact persons, addresses and numbers) to be distributed to units.

Visit embassies, development/funding agencies, CALABARZON firms for possible R&E collaboration and resource generation.

Use formal and informal linkages, as well as intermediaries.
Role of DFI (UPLB-FI)

- Financial administration
  The services of the DFI can be utilized for administering the fiscal needs of researches of the university, aside from the services that the accounting division renders. The university should set guidelines when a research project should pass through the DFI.

- Project development
  Although, at present, it has stopped doing project development, the university can still explore how OVCRE can coordinate with DFI as regards project development. Some suggested that UPLB-FI should be involved again in project development which it used to do. It may be instrumental in facilitating the administrative and financial aspect of conducting research project for UPLB faculty and researchers.

Role of the Business Affairs Office (BAO)

- Preparation of financial feasibility study
  This is one of the present basic tasks of the Business Affairs Office. However, they are only concentrating on doing feasibility studies for other commercial business of the university which are not R&E oriented.

  There were suggestions that they can also be tapped to help in commercializing marketing research outputs/technologies of the university.
- **To serve as mediator/negotiator between scientist and industry**

  BAO, together with OVCRE can serve as intermediary between the university and the industry. It will take care of the needs of both parties. It will facilitate processing of papers, etc. as regards the agreement of both parties.

  Some suggested that the BAO should have more staff who can be tasked to do the marketing of research outputs of UPLB faculty and researchers.

  At present, the BAO assists the Science and Technology Park so it can be its take-off point to mediate/negotiate between the industry and the university. Once it has established the system, it can start doing external negotiations.

- **To be placed under OVCRE (related to IPO’s function) or OVCPD (related to TBI and S&T Park)**

  The staffing pattern of BAO should be reviewed so that its role in the university can be defined. Its dealing with intellectual property rights can be controlled by OVCRE’s IPO while its functions with the S&T Park should be monitored by the OVCPD.
Role of UPLB Units

- Submit reports promptly (on time) and completely

Every unit in the university should be responsible in submitting reports or whatever requirements to OVCRE on time. Since OVCRE was requested to prepare a “Research and Extension (R&E) calendar”, people concerned in the university should see to it that they meet the deadline set by the said office.

- Furnish OVCRE with proposals submitted directly to Funding Agency

For monitoring purposes, the OVCRE should be provided copies of research or training proposals which are sent directly to funding agencies. This will enable the OVCRE to determine the research and extension outputs of each unit in the university.

- Subject Memoranda of Agreement (MOA)/ Memoranda for Understanding (MOU) for review to legal office/IPO-OVCRE

The OVCRE should be aware of the MOA/MOU that each unit has entered into. Each agreement should be in accordance with the university rules and not only with that of the researcher. This is also to protect the researcher from demanding and stingy funding agencies.
In relation to the role of the IPO-OVCRE, intellectual property protection should also be observed during and after the developmental stage of the technology. Based on the experience of two respondents, UPLB researchers tend to be open to anybody who shows interest in their technology. They tend to forget that those people may be would-be pirates of the technology. The IPO office should do something about this to protect the interest of the University and later the future entrepreneur of the technology.

- **Source out funding for packaging proposals and developing promotional materials**

  UPLB should be active in looking for sources of fund that will help researchers in developing promotional materials for its research output.

- **Contribute/share promotional materials with OVCRE’s OSIS**

  It is about time that OVCRE considers activating the One Stop Information Shop. It is up to them which office they would like to put OSIS in place.

**Role of Other Agencies**

- **Source out fund (Funding agency)**

  Outside agencies can assist UPLB in sourcing out funds for the utilization of UPLB research outputs.
- **Commercialization of UPLB research outputs**

  Some respondents suggested that private agencies are in the best position to commercialize UPLB research outputs.

- **Information and research exchange**

  Government or private agencies with direct link with UPLB should be open with their information and research exchange.


C. List of Personnel Involved

The following personnel from the Research Management Center were responsible for completing this study:

1. Jaine C. Reyes - Study Leader and Director, RMC
2. Ma. Lourdes C. Torno - Co-Study Leader and University Researcher, RMC
3. Evelyn E. Bite - Administrative Support Staff and Administrative Officer, RMC
4. Myrna A. Davac - Administrative Support Staff and Data Entry Machine Operator, RMC
**Financial Report**

Technology Evaluation, Development and Promotion System (TEDPS)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Research Grant</td>
<td>₱ 75,000.00</td>
</tr>
<tr>
<td>88C7330</td>
<td></td>
</tr>
<tr>
<td>Less: Obligated Amount:</td>
<td></td>
</tr>
<tr>
<td>(1) Supplies and Materials</td>
<td>₱ 47,399.00</td>
</tr>
<tr>
<td>(2) Travel</td>
<td>₱ 7,400.00</td>
</tr>
<tr>
<td>(3) Sundries (communication, Photo processing, meals, Xeroxing, posters,</td>
<td>₱ 20,201.00</td>
</tr>
<tr>
<td>Publications, etc.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>₱ 75,000.00</td>
</tr>
</tbody>
</table>

Zero balance                  0
List of Designated TEDP Coordinators

1. MS. EDNA A. AGUILAR
   Farming Systems and Soils Research Institute
2. DR. VALENTINO G. ARGAÑOSA
   College of Agriculture
3. DR. RAYMOND F. BADER
   Institute of Plant Breeding
4. DR. DOMINADOR S. TORRES
   National Crop Protection Center
5. DR. JOSE CLAR I. DE JESUS
   Department of Soil Science
6. DR. RICARDO R. DEL ROSARIO
   Institute of Food Science and Technology
7. DR. FLORDELIZA B. JAVIER
   Department of Horticulture
8. DR. ANGEL L. LAMBIO
   Institute of Animal Science
9. PROF. PORTIA G. LAPITAN
   Department of Forest Biological Sciences
10. DR. RITA P. LAUDE
    Institute of Biological Sciences
11. MS. ANTONIA P. LORESCO
    Dairy Training and Research Institute
12. DR. BEN S. MALAYANG III
    Institute of Environmental Science and Management
13. DR. BERNARDO P. GABRIEL
    Department of Entomology
14. DR. JOSE Q. MOLINA
    College of Veterinary Medicine
15. MRS. LUZ OPEÑA
    National Institutes of Biotechnology and Applied Microbiology
16. DR. ENRIQUE C. PALLER  
Department of Agronomy

17. DR. FLOR C. QUEBRAL  
Department of Plant Pathology

18. DR. EDRALINA P. SERRANO  
Postharvest Horticulture Research & Training Center

19. DR. DELFIN C. SUMINISTRADO  
College of Engineering and Agroindustrial Technology

20. DR. RAMON A. RAZAL  
Department of Wood Science and Technology
## General Framework for Internal Technology Evaluation and Development

### Checklist

#### I. Technical

- Is it relevant to the identified problem of the client?
- Does it have a good chance of succeeding technically?
- Is knowledge available already?
- Is objective attainable/reachable?
- Can this be sustained?
- Can it be supported by existing support systems?
- Is the research procedure & design technically satisfactory?

<table>
<thead>
<tr>
<th>Criteria/Aspect of Technology Evaluation</th>
<th>A. Technical</th>
<th>B. Ease of Use?</th>
<th>C. What is its quality?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Project Identification</td>
<td>Technical Soundness</td>
<td>Does it work?</td>
<td>What is its competitive edge over similar technologies?</td>
</tr>
<tr>
<td>Research End of Research of Technology</td>
<td>Is it efficient?</td>
<td>What is its quality? (workmanship, reliability, durability, generalizability)</td>
<td></td>
</tr>
</tbody>
</table>

#### II. Institutional

- Is it supportive of institution's mission?
- Is it consistent with institution's mandate?
- Is it in line with institution's priorities?
- Does the institution have the capability to implement the research considering technical training of researchers and

<table>
<thead>
<tr>
<th>Criteria/Aspect of Technology Evaluation</th>
<th>A. Technical</th>
<th>B. Ease of Use?</th>
<th>C. What is its quality?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Project Identification</td>
<td>Technical Soundness</td>
<td>Does it work?</td>
<td>What is its quality? (workmanship, reliability, durability, generalizability)</td>
</tr>
<tr>
<td>Research End of Research of Technology</td>
<td>Is it efficient?</td>
<td>What is its quality? (workmanship, reliability, durability, generalizability)</td>
<td></td>
</tr>
</tbody>
</table>

### Appendix "B"
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>availability of facilities and equipment?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the project along the strength of the institution?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there prospects for external assistance?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Political (Same as in column B)</td>
<td></td>
<td>III. Political (Same as in column B)</td>
<td></td>
</tr>
<tr>
<td>Does it support national policies &amp; development agenda?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does it support the programs of the relevant Departments (i.e., incentives, barriers)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV. Economic (Same as in column B)</td>
<td></td>
<td>IV. Economic (Same as in Column B)</td>
<td></td>
</tr>
<tr>
<td>What is the potential contribution to the economy (to include benefit/cost ratio implications on employment, GNP, per capita income, dollar reserve, trade balance, etc.)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Financial (Same as in column B)</td>
<td></td>
<td>V. Financial (Same as in column B)</td>
<td></td>
</tr>
<tr>
<td>What is the potential NPV, IRR ROI, payback period</td>
<td></td>
<td>What is the cost of production/ research</td>
<td></td>
</tr>
<tr>
<td>What is the potential marketability and demand?</td>
<td></td>
<td>(materials, labor, rental, transportation, time, etc.)</td>
<td></td>
</tr>
</tbody>
</table>
VI. Social

- Who are the potential beneficiaries?
- What is the potential number and distribution of these target beneficiaries?
- What is its potential social impact (social benefits & negative direct & indirect effects on households, groups, & communities, i.e., values, tradition, norm?)
- What are the social requirements for success of the technology?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>VI. Social</td>
<td>Same as in column B</td>
<td>Social forecast (potential effects on values, norms, tradition, social relations, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

VII Environmental & Safety

- What are the potential negative side effects of the technology on the environment and on the health of the community?
- What are the hazards to humans?

Same as in column B

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>VII Environmental &amp; Safety</td>
<td>Same as in column B</td>
</tr>
<tr>
<td></td>
<td>. What are the negative side effects of the technology on the environment and on the health of the community?</td>
</tr>
<tr>
<td></td>
<td>. What are the hazards to humans?</td>
</tr>
</tbody>
</table>
APPENDIX "C"

A PILOT ON TECHNOLOGY ASSESSMENT AND PROMOTION: THE CASE OF UPLB'S TECHNOLOGY EVALUATION, DEVELOPMENT AND PROMOTION SYSTEM

Rogelio V. Cuyno, PhD
Project Leader
IDRC-Supported TEDPS Project
and Dean, College of Economics and Management
UP Los Baños

Introduction

While the promotion and extension of research results are important, these cannot be more important than the product itself. For products to be promotable and marketable, they must have technical relative advantage, financial probability, economic benefit, social relevance, and environmental soundness.

It is often claimed that most research outputs of the University of the Philippines at Los Baños (UPLB) which constitute close to 80 percent of the country’s research outputs in agriculture, forestry, and related disciplines, have remained underutilized or unutilized by producers.

One reason why UPLB research outputs do not enter the marketplace is related to the choice of subject matter or problem of research. If the outputs of research do not answer the production or practical problems of producers and businessmen or if these people do not see a business prospect in these technologies, the response will naturally be passive or indifferent.

One weakness of the present system at UPLB is that research outputs are not subjected to practical, financial, economic, and environmental soundness tests. As a result, the researchers themselves lack the confidence to expose and test their own work in the marketplace. They are contented with reporting their work to their peers who do not ask questions beyond research procedures, experimental error, statistical significance, and the like.

A related problem concerns the purpose of the researcher in doing the research. A confirmed hypothesis, a reliable research instrument, or a generalize principle are what motivate most university researchers; but these are not of interest to the practical producer or the hardnosed businessman.
In several cases where a promising technology had been developed, the researchers seemed bewildered on what to do next in promoting and marketing their work or failed to see the real developmental value of their work.

While there are offices and mechanisms at UPLB for research reviews, evaluations, and promotion/dissemination of research results, there is a need to develop a more integrated and interlocking research evaluation, development, and promotion system. The system that is envisioned will guide researchers to be more selective in their choice of research subject and approach in favor of problem-solving research which has direct effect on income and poverty alleviation and addresses productivity with equity issues.

Under this system, the research process will be linked to commercialization, technology transfer, and extension-communication function.

Technology Framework

Research in UPLB has two general purposes: (1) To increase the stock of knowledge, and (2) To produce scientific knowledge and technologies that can catalyze productivity, enhance economic activities, and institute social change. Even if these two objectives are distinct, they are interrelated and mutually enriching.

In the transition from subsistence to modern industrial economy, science and technology takes an increasingly important role. By definition, technology has two components -- the tool or devise and the user. A device by itself is insignificant. In its own state, simply a fixture like a stone. When placed in minds, hearts, and hands of the user, it becomes a tool to build structures, to solve problems, to create objects, and to serve as a means to man's goal attainment. From simply surviving the natural world, with enhanced mental and physical capabilities, man has become a co-creator of nature. He has become not just an object, but a subject, an active co-builder of his own world and future.

Policy Framework

The UPLB can improve research utilization of its works in a number of ways. First, the university can try to influence the behavior of researchers. Rather than allow them to pursue only individual interests in research in the guise of academic freedom, the university can provide leads, direction, or framework to capture interest and commitment and to channel research outputs toward certain goals.

Second, a general framework for technology evaluation, development, and promotion must be followed. The general framework must include project identification and selection, monitoring, evaluation, and decision-making of mature technologies. Each UPLB unit shall develop its own internal criteria, indicators, standards, and processes
following the above general framework and as suggested in the guidelines found elsewhere in this document. In the various units, only proposals that pass their internal system of rationalization (technical, financial, economic, social, political, institutional, and environmental) will be encouraged and supported. For developmental type of research, the system should favor end-user oriented, problem-solving, and livelihood or income-generating research.

Third, only research outputs that have been verified, validated, and subjected to end-user reality testing and those that pass technical, social, and environmental standards will be released by the institution.

Finally, while entrepreneurship by the researcher is essential for effective promotion and should be encouraged, the decision on whether the work is already mature should be collective. Also, the researchers should not be left alone to promote their work. This effort should be the responsibility of the institution.

The Technology Evaluation, Development, and Promotion Project of UPLB

This paper is about the strategy of institutionalizing technology evaluation, development, and promotion system (TEDPS) at UPLB. To achieve this purpose, the university created a two-year project in March 1991. It was funded by the International Development Research Centre (IDRC) of Canada. During the two-year period, the project was expected to accomplish the following:

- Designation of a Technology Evaluation Development Promotion (TEDP) coordinator on the research unit level (Department, Center, Institute)
- Training of TEDP coordinators on technology assessment and promotion.
- Design or development by the research units of an internal TEDP system and procedure with the TEDP coordinators taking the lead.
- A one- to two-year “road test” of the TEDPS developed by the various research units.
- Chancellor’s proclamation making the TEDPS a university policy after it has been shown that the system works.

In this project, what was being institutionalized was the system of Technology Assessment and Promotion. The strategy being used to ensure institutionalization was to embed the system into the organizational structure on three administrative levels of the University, the Department, Center, and Institute; the College level; and the University or Office of the Chancellor level.
Complementing the organizational structure strategy was the designing of a management system consisting of the flow of approval and endorsement, reward system, identifying the locus of responsibility, and provision of support system. The flow of administrative approval/endorsement started at the peer level in the research unit. No research proposal prospered until it was reviewed by the peers of the proponent in his unit. This ensured quality control, coordination, efficient use of unit resources, and direction, and fostered the value of true scholarship.

The unit head, within a reasonable time, promptly and efficiently made sure that there was a decision on the proposal. If the decision was affirmative, the proposal was then forwarded to the dean and then from the Dean the papers went up to the Office of the Chancellor through the office of the Director of Research. The Office of the Director of Research formed a university committee to deliberate on the multidisciplinary, interdisciplinary, and institutional implications of the proposal.

The flow for determining "mature" technology was the same for the processing of a research proposal.

Following the introduction of an organizational structure and management procedure was a training-learning process. The TEDP coordinators underwent an eight-day intensive course on technology assessment and promotion. These coordinators in turn took whatever they acquire from the course to their respective units. Then, they acted as the lead person on TEDP in their units. For this assignment, the TEDP coordinators were to earn an equivalent three units of work load.

The first responsibility of the TEDP coordinators when they went back to their units was to take the lead in developing their unit system of assessing research proposals and determining "mature" technologies. During the training, the TEDP coordinators were taught concepts, principles, tools, and processes of technology assessment, and promotion of communication for more effective research results commercialization or utilization.

The incentives and rewards associated with the TEDPS were:

- The University would officially announced to the public in a fitting ceremony the technologies or results of researches that passed the test for mature technology.

- The best of these mature technologies would be given a "TECHNOLOGY AWARD". The developer of the technology will earn points for promotion purposes as reward for excellent research work or extension work.

- An award for excellence in promotional or extension work would be given to a staff member for outstanding work in promoting technology leading to application or utilization and positive socio-economic impact.
A research proponent could expect the following forms of support from the University:

- A more expeditious review and processing of research and mature technology proposals.
- Recognition given to those who excel in research and development work.
- Assistance in patenting and commercialization which would be carried out by the Business Affairs Office.
- Assistance in obtaining funding for research and promotional work which would be provided by the Office of the Director of Research and Office of the Director of Extension, respectively.
- Technical assistance in technology assessment (technical, financial, economic, social and environmental feasibilities) and promotion which would be coordinated by the Office of the Director of Extension.

While the emphasis of the TEDPs is obviously applied research or more immediate in terms of development, it is the intention that even the more basic or fundamental kind of research can be reviewed using the same mechanism. The criteria and standard of evaluation, however, should favor contribution of the work toward understanding of natural and basic phenomenon and what the research does to pave the way for future research work.

**The Theory Guiding The Pilot Project**

Institutionalization is defined as an enduring commitment of an organization to an idea, practice, policy or norm. The proof that something has been institutionalized is when it survives leadership changes in an organization. Another indicator of institutionalization is when the behavior of an organization toward something is programmed to allow for high certainty. Institutionalization also takes place when internal resources are regularly appropriated for an extended period of time, thus guaranteeing continuity of program of activities. When there is a definite locus of responsibility for something so that everybody in the organization knows who is in-charge of it, institutionalization has likewise set in (Fig. 1).

The use of organization and management handles to ultimately institutionalize an organization (the TEDPs) can be called the principle of internalization (Figure 1). Internalization is the process of coming to terms with the innovation. It is like grafting or implanting the innovation into the existing organization and management mainstream. Internalization is like "becoming a part of something." This requires a fit or compatibility of the innovation with the existing structure and culture of the organization. After the fit
Fig. 1. Analytical framework in Organizational Institutionalization of Innovation
is established, **acceptance and learning** by the organization is required for the innovation to root or form callus. The rooting or callusing of the innovation so that the innovation is now an indivisible part of the organization is called **institutionalization**. Institutionalization is therefore preceded by internalization and learning processes.

The **acceptance of an innovation** by the organization is influenced by the compatibility of the innovation and the existing organizational structure and culture, and the participation of the members of the organization in the deliberation and decision-making related to the innovation. An innovation "champion" within the system is vital to effect acceptance and learning of the innovation.

**Organizational inertia** is a restraining force to disallow change from occurring and sustain the status quo. The organizational structure or the set of structured functional interrelationship coupled with the established ways of getting things done, brings about systems integration and unity. Such structures fosters systems continuity and stability. If the innovation is incompatible with existing organizational structure and management cultural system, the innovation could readily be rejected by the system. Change, however is not impossible in this set-up but can bring about greater internal resistance to the innovation and delay in acceptance.

When members participate in decision-making, participation becomes a facilitating force for acceptance of an innovation. Participation in decision-making gives the members the chance to subject the innovation to various reality tests and gives the feeling that they have an equity in the new idea.

Another facilitating factor is the innovation champion who is vital in drumming up interest of members, in bringing credibility to the innovation and in teaching the implementors on how to use the innovation. The innovation champion discovers and creates the need for the innovation.

**After Two Years**

The UPLB-TEDPS project has just ended after two years of piloting. The project was initiated in the last six months of Dr. Raul P. De Guzman's term as Chancellor. Dr. William G. Padolina, his Vice Chancellor for Academic Affairs, championed the idea of problem-oriented R&D approach to research. Before becoming Vice Chancellor, Dr. Padolina who was then the director of the National Institutes of Biotechnology and Microbiology (BIOTECH) started technology commercialization by linking BIOTECH with private investors to package mass produce, and market technologies commercially.
With leadership transition at UPLB, the rationale, principles, project design, and administrative implications were explained to the succeeding management team of UPLB Chancellor headed by Chancellor Ruben B. Aspiras, the TEDPS as a project was sanctioned by the new administration.

Twenty-three departments/institutes and Centers participated in the pilot stage. Each unit appointed a TEDP Coordinator who was responsible for internalizing the TEDPS principles and procedures in the unit.

An eight-day pre-service seminar-workshop was conducted for these new TEDP coordinators. The seminar-workshop included topics on the following: (a) Why research utilization is slow in universities; (b) Rationale, principles and technical design of the TEDPS project; (c) R&D approach to research; (d) Technology commercialization and marketing; and (e) Principles and practices in technology promotion and technology assessment.

A reference book was prepared and distributed to the course participants.

Three continuing education seminars were also conducted for the TEDP coordinators. In these seminars, coordinators gave feedback and as follow-up activities share their problems on internalization of the TEDPS and procedures. Demonstrations of techniques and practices in technology promotion were also done.

In the second year of piloting, the TEDPS was shared with the DOST-TAPI and RMC organized a six-day seminar workshop for participants identified by the TAPI. They came from various State Colleges and Universities, Department of Science and Technology regional offices and DOST headquarter’s and R&D institutes’ staff.

In the pilot stage, two technology promotion videos were produced. One was already completed and the other one is expected to be finished sometime this May. The concept in these technology promotion videos is to document the features of the technology, show the performance of the technology and give exposure to the persons and institution responsible for the research and development of the product. An extension bulletin was also produced during this period.

In general, the major problems of the TEDPS introduction to UPLB are threefold: (1) only a very limited number of technologies passed the comprehensive technology assessment criteria, (2) attitudinal resistance on the part of researchers to peer evaluation and “bureaucratic” system, and (3) institutional operational problem.
For the first obstacle, what was initially thought of as mature technology by researchers turned out to be premature assessment. In the TEDPS, technology was defined as any invention, biological product (plant variety, microorganism, breed), method/procedure, material or discovery which passed the criteria set by the peer group. The criteria used for assessing “maturity” of recommendation were:

1. **Technical superiority.** The proposed technology has to be decidedly better in technical performance than the commonly existing one. The data on which the recommendation should be based must be reliable or stable and a product of thorough experiments/researches. It should sample a wide variety of situations. A recommendation may, however, be limited to a specific situation or location.

2. **Environmentally safe.** A technology must never be recommended if there is proof that it will harm the environment during application or after continued used. The same should be applicable to farm animals. Mitigating factors, however, allow the release of potentially dangerous technology if there are known antidote and safety measures.

3. **Economically beneficial.** Although not mandatory, like the first two criteria, an economically beneficial technology is given much vote of approval because of developmental impact consideration. Economic benefit of a technology is shown in its contribution to employment, export and import substitution as well as its comparative advantage in relation to a unique natural endowment.

4. **Financially profitable to investor or user.** The bottom line for the end-user is the profit he/she will get from his/her investment in money, time, effort and land or any form of capital. Data on cost and return for producing the product should be available to guide end-user decision making.

5. **Socially relevant.** A technology should be promoted all the more if it benefits a large number of people, particularly the poor.

The second obstacle is related to the well-held tradition of academic freedom at UP which opposes any system or bureaucratic standardization. Many UP faculty and researchers believe that peer evaluation of research proposal and determination of mature technology infringe on their freedom of research and expression. Others cannot accept peer evaluation because in their contention, they are the recognized experts in the field, and therefore, have no peers.

Because technology evaluation will have to pass through three-layers--Unit, College and finally, University--some researchers do not have the forbearance to be subjected to this "bureaucratic procedure". Besides, they claim that donors who might have already committed to approve the proposal, do not care anymore about approvals from higher University levels.
The third obstacle to the "experiment" of institutional innovation is the existing University structure and procedure. The participants to the pilot project ended up following two parallel systems - the existing University system of research evaluation and administration and the TEDPS. The TEDPS was perceived to be competing with the entrenched UP system.

The latest on the TEDPS is that the project has requested the University to form a Committee to evaluate the TEDPS experience and to identify which features might be institutionalized.

Acknowledgment

Special credit and gratitude are due to Dr. Isaias Lumanta, Jr., former Director of UPLB's Business Affairs Office, for his advocacy and insights, and for helping the author shape the design of the TEDPS. He was one of the co-implementors of this project.
### APPENDIX "D"

**Mature Technology Proposal Form No. 1**

**A. UNIT ACTION ON THE PROPOSED MATURE TECHNOLOGY**

<table>
<thead>
<tr>
<th>Date</th>
<th>Received by College of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**B. COLLEGE ACTION ON THE PROPOSED MATURE TECHNOLOGY**

<table>
<thead>
<tr>
<th>Date</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Returned to proponent for revision</td>
</tr>
<tr>
<td></td>
<td>Received Revision</td>
</tr>
<tr>
<td></td>
<td>Favorably endorsed by College Dean to ODE</td>
</tr>
<tr>
<td></td>
<td>Favorably endorsed to the Chancellor</td>
</tr>
</tbody>
</table>

**C. UPLB DIRECTOR OF RESEARCH ACTION ON THE PROPOSED MATURE TECHNOLOGY**

<table>
<thead>
<tr>
<th>Date</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sent to Referee (UMTDC &amp; BAO)</td>
</tr>
<tr>
<td></td>
<td>Returned to Proponent for revision</td>
</tr>
<tr>
<td></td>
<td>Received Revision</td>
</tr>
<tr>
<td></td>
<td>Favorably endorsed to the Chancellor</td>
</tr>
</tbody>
</table>

**D. UPLB CHANCELLOR'S ACTION ON THE PROPOSED MATURE TECHNOLOGY**

<table>
<thead>
<tr>
<th>Date</th>
<th>ACTION TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approved</td>
</tr>
<tr>
<td></td>
<td>Official University Release</td>
</tr>
<tr>
<td></td>
<td>Official Endorsement for Commercialization (BAO)</td>
</tr>
<tr>
<td></td>
<td>Official Endorsement for Promotion and Marketing (ODE &amp; Proponent Unit)</td>
</tr>
<tr>
<td></td>
<td>Copy furnished to proponent unit</td>
</tr>
</tbody>
</table>

---

**URERC Chairman**

---

**Unit Head**

---

**College Dean**

---

**Director of Extension**

---

**Chancellor**
RESPONSIBILITIES OF THE TECHNOLOGY EVALUATION COORDINATOR

Each unit (institute, center, department) should designate a staff as coordinator for Technology Evaluation, Development and Promotion. The appointee should earn an official work load of three units per semester and should carry the following duties and responsibilities:

a. To serve as chairman for both the Unit Research Review Committee (URRC) and the Unit Mature Technology Determination Committee (MTDC).

b. To serve as a liaison and contact person between the unit concerned and the offices of the directors of Research, Extension and Business Affairs.

c. To spearhead in promoting identified mature technologies of the unit concerned.
FLOW CHART OF RESEARCH AND EXTENSION PROPOSAL

START

A

R&E PROPOSAL/TECHNOLOGY PROFILE

B

UNIT HEAD
DEPT./INSTITUTE/CENTER

7 days

REC

Review proposal in the presence of proponent for using internal unit criteria/standard.
Headed by REC Chair/Coordinator

OK

Yes

No

COLLEGE DEAN
5 DAYS

OK?

Yes

NO

COLLEGE DEAN
5 DAYS

Review (Administrative, Resource, Institutional) for:
- duplication
- resource requirement
- inter-unit & inter-unit/institutional/disciplinary coordination
- other implication

Endorses proposal to College Dean

URERC

Review/Evaluation (Comprehensive Interdisciplinary)

Yes

NO

URERC

Review of technology for promotion and marketing by OVCRC and unit

OC

5 DAYS

- Approval of final document
- Official endorsement to funding agency
- Transmits to individual unit concerned

Endorses proposal to College Dean

Abbreviations:

REC Unit Research and Extension Committee
URERC University Research and Extension Review Committee
OVCRC Office of the Vice Chancellor for Research and Extension
OC Office of the Chancellor
## Research Proposal Form No. 1

### A. UNIT ACTION ON THE PROPOSED RESEARCH

<table>
<thead>
<tr>
<th>Date</th>
<th>Received by Unit Head</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>♦ Forwarded to Unit Research and Extension Review Committee (URERC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Returned to proponent for revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Received Revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Favorably endorsed by College Dean to ODR</td>
</tr>
</tbody>
</table>

**URERC Chairman**

**Favorably endorsed by Unit Head to College Dean**

**Unit Head**

### B. COLLEGE ACTION ON THE PROPOSED RESEARCH

<table>
<thead>
<tr>
<th>Date</th>
<th>Received by College of:</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>♦ Returned to proponent for revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Received Revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Favorably endorsed by College Dean to ODR</td>
</tr>
</tbody>
</table>

**College Dean**

### C. UPLB DIRECTOR OF RESEARCH ACTION ON THE PROPOSED RESEARCH

<table>
<thead>
<tr>
<th>Date</th>
<th>Date Received by ODR</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>♦ Sent to Referee (URRC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Returned to proponent for revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Received Revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Favorably endorsed to the Chancellor</td>
</tr>
</tbody>
</table>

**Director of Research**

### D. UPLB CHANCELLOR'S ACTION ON THE PROPOSED RESEARCH

<table>
<thead>
<tr>
<th>Date</th>
<th>Date Received by OC</th>
<th>ACTION TAKEN:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>♦ Approved</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Official endorsement to Funding Agency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>♦ Copy furnished to proponent unit</td>
</tr>
</tbody>
</table>

**Chancellor**
Dear ________________

The Research Management Center is conducting a study on UPLB's Institutionalization of the Technology Evaluation, Development and Promotion System (TEDPS).

In this regard, may we request you to be one of our respondents in this study? We will come to your office for an interview about the institutionalization of TEDPS in your unit.

May we schedule a 30-minute to one hour interview on the week of ________________?

We will appreciate receiving your immediate favorable reply. Please do not hesitate to call Ms. Ludette Torno at Tel No. 5363341 or 5365326 for your availability.

Thank you.

Very truly yours,

JAINE C. REYES
Study Leader and
Director, RMC
Interview Schedule
Present R&E Coordinators

1. Have you heard about the TEDPS?
   Yes ______ No _______
   If yes, what about it?
   If no, what do you think is the best way to facilitate promotion of technology developed at UPLB?

2. What is your feedback about the TEDPS?

3. If you were given the choice, would you like to implement it in your unit?
   Yes ______ Why?
   No ______ Why not?

4. Please give your recommendations on how it should be implemented in your unit.
Interview Schedule
ODE/ODR Staff and Former Directors

1. Can you say that the TEDPS institutionalized in UPLB? To what extent?

2. What factors do you think have contributed to the success/failure of the institutionalization of the TEDPS?

3. Is it advisable to restart implementing TEDPS? How?

4. Do you think the TEDPS can be useful to the university? How?

5. Do you have any suggestions/recommendations on the institutionalization of the TEDPS in UPLB?
Participants of Seminar Workshop on Technology Assessment and Promotion for DOST RDI’s & councils, SCUs and DA-BAR

1. Can you still remember Technology Evaluation Development and Promotion System or TEDPS?

If yes, do you think it is the best way to unify the system of technology assessment with promotion and utilization in the S&T sector?

If no, what do you recommend as the alternative in unifying the technology assessment in the S&T sector?

2. Have you applied TEDPS in your unit?
   If yes, to what extent?
   If no, why not?

3. What system of technology promotion are you using in your unit at present? Please explain its mechanics.
   What are the advantages of using it than the TEDPS?
Interview Schedule

Former TEDP Coordinators

1. Can you still remember technology evaluation development and promotion system or TEDPS? What features of TEDPS can you recall?

2.a. What have you done as a TEDP Coordinator? Explain.
   - [ ] initiated it in the unit but was not able to follow it up (Why?)
   - [ ] was not able to implement it in the unit (Why?)
   - [ ] still active implementing the system (Explain)

2.b. What changes have been used by your unit after TEDPS?

3.a. What happened to the TEDPS in your unit?
   - [ ] it died a natural death (Explain)
   - [x] it is still used by the unit (How)
   - [ ] it is still used by the unit but was modified (Specify)

3.b. Did your unit benefit from TEDPS? How?
   - [ ] Yes (Explain)
   - [ ] A little (Explain)
   - [ ] Not at all (Explain)

4. As a TEDP coordinator, how do you rate the institutionalization of TEDPS in your unit?
   
   1 2 3 4 5
   Failing Success