

Annex 1
General and specific Terms of Reference for the conduct of the
6th External Program and Management Review of IITA.

General TORs for the EPMR

Objectives and Scope

The EPMR for IITA, in line with the SC guidelines will seek to inform CGIAR members whether their investment in IITA is sound, or recommend measures to make it so. Through this EPMR members of the CGIAR and other stakeholders will be informed to the extent possible whether the Center is doing its work effectively and efficiently. This EPMR will be both retrospective and prospective and it should at the end of the exercise help ensure the Centers' excellence, relevance and continued viability, as well as the proof that the Center adheres and is coherent to the tenements of the CGIAR System. This review is expected to be strategic in orientation and as comprehensive as the situation warrants.

The broad objective of the EPMR is to:

1. Provide CGIAR members with an independent and rigorous assessment of the institutional health and contribution of IITA and,
2. Provide the IITA Center and its collaborators with assessment information that complements or validates its own evaluation efforts, including the CCERs.

The EPMR Panel is charged to specifically study and analyze the various dynamic realignments in IITA particularly in the last five years since the last EPMR conducted in December 2001 and assess:

- a) The Center's mission, strategy and priorities in the context of the CGIAR's priorities and strategies;
- b) The quality and relevance of the science undertaken, including the effectiveness and potential impact of the Center's completed and ongoing research;
- c) The effectiveness and efficiency of management, including the mechanisms and processes for ensuring quality; and
- d) The accomplishments and impact of the Center's research and related activities.

The topics expected to be covered by the EPMR include but not exhaustively:

A. Mission, Strategy and Priorities

- The continuing appropriateness of the Center's mission in light of important changes in the Center and its external environment since the previous external review.
- The policies, strategies, and priorities of the Center, their coherence with the CGIAR's goals (of poverty alleviation, natural resources management, and sustainable food security), and relevance to beneficiaries, especially rural women.
- The appropriateness of the roles of relevant partners in the formulation and implementation of the Center's strategy and priorities, considering alternative sources of supply and the benefits of partnerships with others.

B. Quality and Relevance

- The quality and relevance of the science practiced at the Center.
- The effectiveness of the Center's processes for planning, priority setting, quality management (e.g. CCERs, peer reviews and other quality and relevance assurance mechanisms), and impact assessment.

C. Effectiveness and Efficiency of Management

- The performance of the Center's Board in governing the Center, the effectiveness of leadership throughout the Center, and the suitability of the organization's culture to its mission.
- The adequacy of the Center's organizational structure and the mechanisms in place to manage, coordinate and ensure the excellence of the research programs and related activities.
- The adequacy of resources (financial, human, physical and information) available and the effectiveness and efficiency of their management.
- The effectiveness of the Center's relationships with relevant research partners and other stakeholders of the CGIAR System.

D. Accomplishments and Impact

- Recent achievements of the Center in research and other areas.
- The effectiveness of the Center's programs in terms of their impact and contribution to the achievement of the mission and goals of the CGIAR.

Specific TORs (Strategic Issues) for the EPMR of IITA

1. How good is the science at IITA? How much of the IITA effort is involved in development activities and does this come at the cost of a focus on research that generates IPGs?
2. The budget of IITA has grown substantially over the review period (the proposed figure of US\$ 50.6M for 2007 is 40% higher than it was in 2001). Has the new donor investment enhanced or detracted from the accomplishment of IITA's research outputs? What have been the long term effects of this growth in budgetary resources in relation to the sustainability of IITA's undertakings and the Center's impact?
3. What is the impact of IITA's research on NRM over the last 10 years?
4. Does the Center adequately balance its relationship and role with respect to NARS to avoid impinging on national implementation and private sector contributions to agricultural development?
5. The Science Council notes that IITA has been slow to respond to the Recommendations of the last EPMR? Does the Panel judge that a satisfactory response has been made overall and what systems are now in place for priority setting and the evaluation of impact?
6. Does IITA have adequate capacity in socioeconomic and policy analysis? If so do their inputs adequately contribute to the strategic planning and alignment of the research activities and the creation of an enabling environment?
7. IITA has adopted a Research for Development Council to guide research. Is this an effective solution for research priority setting and day to day oversight of projects and scientific quality?
8. How does IITA place itself strategically in relation to SSA as a whole? What will be the opportunity cost to research for the West and Central Africa region of extension to other sub-regions?
9. Does IITA have a clear rationale for its involvement in agricultural diversification and high value crops? Is it collaborating with or duplicating other possible sources of research and market expertise?
10. Is the progress towards WARDA-IITA alignment adequate and appropriate?
11. What are IITA's relationships with other CGIAR Centers and initiatives in Africa e.g. with the WCA, ESA and SSA CP MTPs?

Annex 2

Recent Center Commissioned External Reviews of IITA and its Projects and Programs

This Annex contains the collected recommendations of these CCERs (as listed in Chapter 1.8) and donor review. Further EPMR Panel Commentary on the CCERs is reported in section C of this annex and is made in the text of the EPMR Report.

A. CCER RECOMMENDATIONS AND BOARD AND MANAGEMENT RESPONSES

1. CCER: Systemwide Program on Integrated Pest Management (see separate Annex 8)

2. IITA Board response to the CCER on Governance and Management

The IITA BOT appreciate the work of John Griffith and Wanda Collins in reviewing governance and management at IITA, their extensive review of Board and research management documents, their interaction with staff, national and international and with the Board. The IITA Board agree with the major thrust of the recommendations made.

GOVERNANCE

Recommendation 1: The Right People

- *the NC Chair be made a member of the Executive Committee immediately;*
- *The NC develop a list of governance competencies that IITA will need over the next 5 years, a so-called Board Profile;*
- *the NC update its list of current governance competencies;*
- *a gap analysis be provided the full board within the next three months along with a suggested approach to filling the identified competency gaps;*
- *the Board review and approve a new Role and Agenda statement for the NC at the next meeting.*
- *The Panel recommends that the Board temporarily add a Trustee with governance experience and competencies who would assist IITA as it transitions and upgrades its oversight functions over the next 18 months. The term of this special, fixed term appointment would be 18 months, or three board meetings, and would commence as soon as a suitable candidate can be found and appointed to the IITA board.*

Board Response:

- The governance section of the report revolves around the need for change in the composition of the Board. It sees the historic criteria for selection for membership as disciplinary expertise directly relevant to the science at the Institute. The Board also noted that a majority of Board members have governance experience as well as their disciplinary expertise. Selection criteria for the Board include this. The Panel sees this as only a partial requirement, its historic dominance now outmoded. The Board is of the view that disciplinary expertise is fundamental and that governance experience is also required of nominees.
- The CCER makes the case for a 'Self Evaluation Model' based on new demands emerging from the financial scandals in the private sector in the early 2000s, particularly in the USA, and being adopted by donors. Although this 'model' is not fully elaborated in the report, the Panel is specific in identifying skills in finance, in four categories of risk assessment, in governance and in human resource management as central to effective governance.
- The IITA BOT agrees these are key skill areas for members. It would add that experience in the operation of the R4D continuum is an important attribute that allows the BOT to see IITA's role in

an overarching function to which it makes a contribution and would include it as a criterion to be satisfied by the Board profile. Historically the IITA BOT has been aware of the need for skills in the four areas identified by the panel, though risk management has been narrow, largely subsumed under finances. The four categories of risk management identified help broaden the Board's awareness of risks.

- Historically,
 - given the complexity of the IITA programs, with a wide range of disciplinary skills involved, and
 - given an institute operating an interdisciplinary strategy; and
 - given the pressure to reduce the number of its members,the BOT has tried to combine the skills highlighted by the Panel with disciplinary excellence in its assessment of candidates.
- The Panel recommendation implies a change. Options for change range from a re-weighting across the multiple criteria used towards the identified skills, or, more radically, selection solely on the basis of these skills and the use of temporary panels, as in program oriented CCERs, to evaluate quality and relevance of the science of the institute. **The BOT is discussing these and other options.**
- Given the emphasis put on the need for these skills on the Board, the Board did not see the clear advantage of a temporary appointment of expertise on finance. Note the recommendations about shorter terms, and the emphasis placed on re-appointment only if the member/candidate has skills required for the future rather than the past. The Board has accepted this recommendation and has made a routine appointment (a first term of three years with eligibility for a second term of three years) of a Trustee with expertise in finance and governance.
- The recommendations specifically related to the NC have been implemented immediately or are in various stages of implementation. The Board wishes to record that the Nominating Committee has always conducted gap analyses for filling Board future Board vacancies.

Recommendation 2: The Right Issues

- *The Panel suggests that the Board seek an opinion from Counsel on the legality of the CDC 'binding decisions' issue and act accordingly and, internally, change the rules of procedure so that the full Board approves the budget in a timely manner.*
- *The Board Chair and the DG carefully vet the meeting agenda and with input from all members of the Board try to ensure that presentations and discussions are strategically focused.*

Board Response

- The Board has requested the Director General to seek legal opinion on CDC "binding decisions" and is awaiting the outcome.
- The Board Chair and the DG carefully vet the meeting agenda and with input from all members of the Board focus on ensuring that presentations and discussions are strategically focused.

Recommendation 3: The Right Processes

- *The Panel suggests that the Board Chair and the DG set the level of expectations in respect of board processes and ensure/enforce compliance.*

Board Response

- The full Board has been involved in setting the level of expectations and has made specific recommendations on the documentation and the timing of the documentation that is required by the Board to effectively perform its oversight functions as reflected in the Minutes of Board Meetings, May 2005 and January 2006.

Recommendation 4: The Right Self-Evaluation

- *The Panel recommends that the Board's Rules be modified so that if a Trustee misses two consecutive meetings comprising either a board and/or a Committee meeting, his/her appointment will be terminated.*
- *The Panel also suggests that the Terms of Reference of the Board Chair be modified to reflect the new responsibilities implied in the new self evaluation model described above.*

Board Response:

- The Board considers the recommendation on terminating Trustees who miss two consecutive meetings of either a board and/or a committee to be too rigid, as it does not reflect a number of activities performed by Board members outside of meetings. Effectiveness of Trustees is reviewed on a case-by-case basis and takes into consideration the actual circumstances for the non-attendance.
- The annual Trustee self-evaluation process is being implemented under the incoming Board Chair (August 2006) and the Board's Policies and Procedures modified to include this additional responsibility.

Other Board Comments

- The Panel provided useful comments on the Nominating Committee which is urged to raise its game to effect the 'change of mindset' needed for a 'Self evaluating' Board. It would have also been useful to get the Panel's advice on committee structures, mandates and performance more generally for its other committees.
- The Board would have appreciated a comment from the Panel on the frequency of Board meetings which the Board has frequently debated. Although not explicitly stated the Panel favor two meetings a year when they say, 'The term of this special, fixed term appointment would be 18 months, or three board meetings, and would commence as soon as a suitable candidate can be found and appointed to the IITA board.' The Panel also notes: "with only one meeting a year, it could take a new Trustee at IITA up to half of the first term of office to gain familiarity with the center's activities, with his/her fellow Trustees and their work style and specific skill sets, with management's style and effectiveness and to gauge the quality and attitudes of the staff" The IITA Board has decided to explore the 2 meeting per year option which will also include conference calls.

RESEARCH MANAGEMENT

Recommendation 1: Research Management Arrangement (RMA)

....IITA reconfigured its internal research management structure. Six mega projects were transformed to six programs with 19 component projects. At the time of the CCER the process was not complete and no research management plan had been formulated to adapt the current RMA being reviewed by the Panel, to accommodate the shift in research structure.....

In the panel's opinion, the shift in program structure, along with the possibility of integration with WARDA activities, represent a significant challenge to the current RMA. The panel report will provide guidance and will comment on general research management issues relevant to the RMA, but cannot address the outcome of those two significant changes in terms of the ability of the RMA to adequately and effectively manage research at IITA into the future.

- *Therefore, the Panel recommends that the EPMR scheduled for 2007 revisit, in-depth, the Research Management Arrangement at IITA*
- *The Panel further recommends that IITA move quickly to modify the RMA structure and clearly articulate and implement a management plan for the new project portfolio, taking into consideration further recommendations for general strengthening of research management which follow in this section. This should be a planned, deliberate, and a thoughtful process resulting in a fully defined management plan.*

Board Response

The Board notes the Panel's opinion on the impact of the change in program structure. The Board sees this as a change in title only. Use of the title 'program' for a collection of projects on a common theme avoids the confusion of using the word project twice in describing the operational hierarchy. The Board acknowledges the complexity of the negotiations with WARDA in the context of CGIAR reform but does not foresee any adverse implications for IITA's Research Management Arrangements. The Board agrees with the Panel recommendation that the EPMR includes an in depth review of the RMA at IITA and endorses the Panel recommendation that IITA move quickly to modify the RMA structure in the light of those recommendations made by the Panel as accepted or modified by the Board.

1.1 RDC, the Apex of the Research Management Arrangement

- *The Panel recommends that the Research for Development Council be re-oriented to a Research for Development Advisory Council with decision-making authority devolved from the Director General at his discretion.*

Board Response

The Panel perceives the RDC as the innovative element in the research management arrangements and concentrates many of its recommendations here. While it is attracted both to the intent of the RDC to democratize research management decisions, and also the support this has from staff, the Panel is concerned that the body as structured, dominated by elected members, does not have the competency to address broad research management issues and, in practice, has largely focused on relatively narrow matters of administration. **The Board agrees with this analysis.**

The BOT finds a contradiction in aspects of the Panel report on research management. Two of particular importance;

- The Panel suggests that the RDC should continue to have final decision making authority on those things it did well in its first two years, (performance review, internal budget allocation, etc.) yet also acknowledges that these things were largely in the administrative sphere rather than in research management, the raison d'être of the RDC. **The Board does not believe that the RDC should have a mainly administrative role.**
- The Panel recommends that the decision-making authority of the RDC be at the discretion of the DG. Historically this has been the case with matters delegated to the RDC that the Panel now finds it does not have the competency to address. While the Board recognizes the enthusiasm of the staff for participation in management it also sees a need to limit the **decision-making authority of the RDC, as presently structured, to issues within its competency.**

The BOT endorses the Panel recommendations on the RDC with the exception of delegation of authority to RDC at the discretion of the DG. Revised TOR are required for the RDC. These should distinguish clearly between matters on which the RDC has decision-making authority, and matters on which it is advisory. These revised TOR need Board endorsement, as do future changes in authority delegated by the DG to the RDC.

1.2 Directors Research for Development—the fulcrum of the RMA

- *The Panel recommends that IITA urgently seek to acquire expertise at the Institute-wide level of research management and leadership. This can be accomplished by recruiting a permanent Deputy Director General. It might also be accomplished through a shorter-term appointment of a similar competence. The important factor is to secure the services of a proven, seasoned research leader who can complement the roles of the Directors and provide cohesive oversight at the Institute level through the next few challenging and critical years*

Board Response

The BOT acknowledges that the CCER occurred when the RMA were in a state of rapid change. The BOT notes that prior to the CCER, it had asked for the recruitment of a DDG, recommended changes to the decision-making authority of the RDC, and asked for increased support to the Program Leaders. At the time of the CCER, and indeed to date, these Board decisions are in various stages of implementation. Several of the Panel recommendations on RMA support the BOTs own recommendations as recorded in the minutes since 2004.

1.3 Program Leaders—The Foundation of Research Management

- *The Panel recommends given the growing complexity of its research portfolio, that IITA take immediate steps to strengthen and nurture research management at the Program Leader level; the panel strongly suggests that strengthening at this level will reinforce the entire structure above and eliminate some weaknesses that now exist at higher levels. Program management and leadership should become a highly valued skill with adequate investment in its development.*
- *The Panel recommends that, at a minimum, the process of electing program leaders be dismantled and replaced with a process of selecting (recruiting or appointing) leaders who demonstrate both commitment and skill for the position.*

Board Response

The Panel considers that too little attention has been paid to supporting those in the Program Leader role and concentrates several recommendations in this area. The importance attributed to the Program Leader role, and the need for support, concurs with the views of the BOT as recorded in the minutes of the 04 and 05 meetings. **The BOT endorses the Panel recommendations in this area, including the recommendation that the Program Leader be appointed rather than elected.**

Recommendation 2: Investing in Management and Leadership Development

- *The Panel recommends that IITA develop a training and orientation program for all staff occupying management roles within the RMA. This is particularly critical and urgent, for Program Leaders who will shoulder the burden of managing the new 19-project portfolio. Training should take advantage of external consultants who could facilitate internal workshops and bring professional expertise to the process; however, external opportunities should also be made available for management leadership development. Directors should have similar opportunities at their level for development. And finally, if project leaders will be named to manage each of the new 19 projects, they should also be afforded relevant training.*

Board Response

The Board agrees with this recommendation in the context of the revised Research Management Arrangement. A training and orientation program should be developed at all levels of staff as required.

Conclusion:

The Board asks that IITA management work to implement the recommendations from the CCER as endorsed or modified by the Board and recorded in the minutes of the February 2006 BOT meeting.

Revised by the IITA Board February 2006

3. Management and Board response to the Report of a Center-Commissioned External Review (CCER) of IITA's Project B: "Developing biologically based plant health management options and conserving biodiversity for sustainable agriculture", November 2004

Reviewer: Marlene Diekmann, GTZ Project "Advisory Service on Research for Development" and Associate Professor, Institute for Plant Diseases, University of Bonn, Bonn, Germany

The IITA Board of Trustees and Management greatly appreciate the work of Marlene Diekmann, GTZ Project "Advisory Service on Research for Development" and Associate Professor, Institute for Plant Diseases, University of Bonn, Bonn, Germany in reviewing IITA's Project B ("Developing biologically based plant health management options and conserving biodiversity for sustainable agriculture). The extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

The IITA Management, fully endorsed by the Board of Trustees response to the review of Project A is below.

History of Project B

In late 2001, following the last External Program and Management Review (EPMR), IITA restructured its 14 projects into 6 projects. Projects A to C are of a disciplinary nature, D to F are agro-ecological zone projects. Project B builds on the projects of the former Plant Health Management Division, namely Project 7 "Biological Control and Functional Biodiversity", Project 8 "Integrated Management of Legume and Maize Pests", Project 10 "Integrated Management of Cassava Pests and Diseases" and the plant protection-related activities of Project 1: "Conservation and Genetic Enhancement of Plant Biodiversity", Project 2 "Improving Plantain- and Banana- based Systems, Project 5 "Improving Yam-based Systems". Project B, like the other IITA projects, is really more like a program, and confusion with donor-funded 'projects' sometimes occurs.

The budget of project B slightly increased from 2003 to 6.86\$m in 2004 in is expected to remain stable in 2005. It is the second largest of the 6 project budgets.

Summary of Recommendations and Management and Board Responses:

Recommendation 1

- *It is recommended to list activities as they relate to the outputs.*
- *Inputs are missing in the logframe. Milestones are listed for each output for the years 2004 to 2007, resulting in rather long lists*

Board and Management Response:

- IITA appreciates these recommendations that clearly indicated many weaknesses in the past MTPs. The new format of the MTP projects no longer accommodate activity level reporting but this is now accommodated within scientist workplans where they are linked to specific outputs.

Recommendation 2

- *It is recommended to list the milestones under the activities, and where appropriate combine those that relate to one pest.***Board and Management Response:**

- IITA appreciates these recommendations that clearly indicated many weaknesses in the past MTPs. The new format of the MTP projects no longer accommodate activity level reporting but this is now accommodated within scientist workplans where they are linked to specific outputs.

Recommendation 3

- *It is recommended that IITA link with institutions that are (or should be) concerned with the spread of pests (FAO, IAPSC, ...) and jointly explore ways to identify funding to mitigate the invasion of pests at early stages.*

Board and Management Response:

- IITA accepts this recommendation. In terms of collaboration with other bodies, stronger links have been established with IAPSC (which is undergoing major restructuring at the moment) and GISP (Global Invasive Species Program).
- We have and will continue to explore for opportunities to link to FAO, who deals more with policy related issues of invasive species rather than with technical matters. For example, IITA's biodiversity center at Cotonou is currently aggressively searching for funds to tackle a new invasive and highly destructive fruit fly species (*Bactrocera invadens*) through strategic partnerships.

Recommendation 4

- *It is recommended to add to all donor project proposals that make use of services such as taxonomy, or the germplasm health unit (development of new cultivars, etc.) a budget line to recover the cost of these services.***Board and Management Response:**

- IITA accepts this recommendation. The recovery of these costs is now being budgeted into project proposals or charged directly to users.

Recommendation 5

• *It is recommended to establish an estimate of minimum core positions and to ensure these are filled.***Board and Management Response:**

- IITA accepts this recommendation. The RDC has developed a set of core competencies for IITA. These have been identified on the basis of future needs for disciplinary focus as well as location. These core competencies are reviewed annually by the RDC. These are the basis for recruiting and retaining core scientists.

Recommendation 6

• *It is recommended to review training needs in NARS and offer the appropriate training (group, individual, in-house, in-country).***Board and Management Response:**

- IITA is committed to capacity building of NARS and other partners. Thus, we accept this recommendation.
- We also incorporate training needs in project proposals when ever possible. We attempt to meet any training needs that are demanded by the NARS or other partners. We would work with NARS to determine training needs if requested.
- The RDC has established a new graduate training scholarship program in 2006.
- We have always considered training needs of the IITA technical staff as a high priority.

Recommendation 7

• *It is recommended to consider granting of sabbaticals (not as an entitlement, but as a possibility as and when needed) and to encourage participation in international conferences, preferably with key note addresses if possible (this would raise the profile of IITA on the international stage), etc.*

Board and Management Response:

- IITA accepts this recommendation. The RDC established a Strategic Travel Fund in 2006 to fund these types of opportunities from core funds. We give high priority to presentations at International Conferences.
- We are willing to consider opportunities to allow the scientists to do study leave if they are of high priority to our research agenda.
- We also are willing to fund travel cost of researcher from ARI's to come to IITA to bring new skills or knowledge.

Recommendation 8

• *It is recommended to establish a system to avoid inadvertent introduction of pests to and from IITA locations other than Ibadan, in cooperation with the respective national plant quarantine service.*

Board and Management Response:

- IITA takes very seriously its responsibility to insure safe germplasm transfer. Thus, we accept this recommendation. IITA has a germplasm health facilities and expertise in Ibadan which establishes standards and gives training of existing support staff at other locations when needed. Germplasm

health testing and certification capabilities continue to be developed in collaboration with NARS and IAPSC (for material transfer).

- Recently, Dr. Maria Ayodele has been very instrumental in upgrading skills of NARS and IAPSC staff in terms of germplasm health testing.

Recommendation 9

- *It is recommended to change the project B title to: "Developing sustainable plant health management options"***Board and Management Response:**

- IITA appreciates these recommendations that clearly indicated many weaknesses in the past MTPs. This recommendation was fully accommodated after the CCER and in the 2006/2008 MTP.
- The new MTP has resulted in more integration of the Project B outputs and activities within the new projects and the shift away from disciplinary projects. Thus the name change is not longer evident.

Recommendation 10

- *It is recommended to modify the titles of outputs to match the suggested new project title as follows:*
 1. *Knowledge base on distribution and biology of pests and their natural enemies improved, and agro-biodiversity characterized*
 2. *New knowledge on the interactions between pests, host plants, natural enemies and the environment generated*
 3. *Effective integrated control options against important pests in farming and aquatic systems developed*
 4. *Crop protection products based on entomopathogens, botanicals, semiochemicals and elicitors developed towards commercialisation*
 5. *NARES capacity to develop and apply integrated pest management components and safe use of pesticides enhanced.*

Board and Management Response:

- IITA appreciates these recommendations that clearly indicated many weaknesses in the past MTPs. The new MTP has resulted in more integration of the Project B outputs and activities within the new projects and the shift away from disciplinary projects. These outputs are now accommodated within the new MTP Projects.

Recommendation 11

- *It is recommended to widen the range of crops to include those important in the farming systems (e.g. cotton).*

Board and Management Response:

- IITA accepts this recommendation and will continue (and expand, funds permitting) our work on pests and diseases of non-mandated crops (e.g. pineapple mealybug) or non-crop pests (e.g. water weeds). This commitment has also been accommodated in the 2007/2009 MTP projects.
- With regard to cotton, we have been in contact with national and international (mainly IRD and CIRAD) institutes concerning aspects of plant protection where IITA has a comparative advantage, i.e. development of biopesticides and biological control. Currently, we are in a dialogue with CIRAD with respect to collaboration on the primary cotton pest, *Helicoverpa armigera*, both in terms of ecological studies and also biological control, and we anticipate a joint

project leading to the deployment of a CIRAD scientist at IITA Benin. Maurice Vaissayre, principal cotton entomologist of CIRAD, has recently visited IITA Benin, and a draft proposal for the above collaboration is being prepared

Recommendation 12

- *It is recommended to review whether project B staff is posted in the location where they likely have the greatest impact.***Board and Management Response:**
- IITA accept this recommendation. We recognize the need to carefully consider the location of all of our scarce scientists. The routine performance review process, which is held at the end of each contract as part of the renewal process contains a review of the appropriateness of the location for the future contract.
- The RDC has established a set of core competencies which also consider the location of each position. Thus we have a number of mechanisms available to review the placement of staff.

...

4. Management and Board response to the Report of a Center Commissioned External Review (CCER) of IITA's Project D: "Research for Development Enabling Environment" October 2004.

Reviewer: Dr Alfred Hartemink of ISRIC – World Soil Information

The IITA Board of Trustees and Management greatly appreciate the work of Dr. Hartemink in reviewing IITA's Project "D" (**Research for Development Enabling Environment**). The extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

History of Project

The activities in Project D were grouped by 7 outputs and these are essentially discipline-based (e.g. markets, production). Each Output has a number of activities that mostly are based on special projects.

CCER recommendations for Project D

Recommendation 1 - Re-labelling and restructuring

Recommendation 2 - Commodity Chains

Recommendation 3 - Setting of clear targets

Recommendation 4 - Stimulating, inspiring, rewarding but also keeps scientists accountable

Recommendation 5 - The think-tank

The IITA Management, fully endorsed by the Board of Trustees response to the review of Project C is below:

Implementation of recommendations:

The CCER made a number of recommendations, but two general categories were reflected; these being "re-labelling and restructuring" and "strategic planning".

Re-labelling and Restructuring:

The following recommendations included:

- **Rename** the project from "Promoting food security and income generation through sustainable production and commercialization of starchy and grain staples in Eastern and Southern Africa" into "Project D – Food security and markets in Eastern and Southern Africa"

- **Re-group** activities either by commodity chains (banana, root and tuber crops, cereal legume systems) or by disciplines (IPM, breeding, soils, economics, networks, capacity building). Such a restructuring should facilitate planning and strategy building and streamline the project with IITA's overall structure.

Strategic planning:

- The area was an attempt to create an environment for research strategizing and planning according to scientific breakthroughs ("R4DEE – Research for Development Enabling Environment).
- Although this field was not specified in detail, the suggestion was to create "think-tanks", either on the project or the IITA institute-wide level, and to engage in more strategic planning while exploring the comparative advantages of Project D's multi-disciplinarity.

Developments within IITA affecting Project D

Since the CCER, the Program D was subject to several organizational changes within IITA, which basically affected the way the CCER recommendations were addressed. Consequently, the implementation of the CCER recommendation has to be seen with this "historical lens".

- In early 2006, the then existing program structure was realigned from six to three programs, the new programs being established around "geo-domains" including the Mid-altitude zone and the Savannah zone, which basically led to a more coherent organization in terms of agricultural management similarity as well as having smaller more manageable geographical domains. Prior to this change it covered much more than half of the geographic area IITA is operating in.
- In the 2007-2009 MTP, established in 2006, among others, three "commodity based" MTP-projects were established that reflected the commodity chain approaches suggested in the CCER. These projects were Banana and Plantain Systems, Roots and Tuber Systems and Cereals and Legumes Systems. This again facilitated strategic planning, coherence along systems approaches, and, as these MTP projects were cross cutting across the agro-ecological zones, allowed a better coherence of systems approaches across IITA's mandate area.

Measures Taken 2004-2005

In this phase, which basically covered a timeframe of 14 months from the CCER, the following actions were taken:

- **Re-structuring and scope of project D**

The MTP 2006-2008 developed in 2005 was, in terms of Program D, streamlined to two projects: Eastern African Banana Based Cropping Systems (D1) and Eastern African Roots and Tuber Systems (D2). This basically reflected the CCER-requested re-orientation towards commodity chains.

- **Strategy building**

A strategy development meeting was held in October 2005 where the two major research areas were discussed (Banana based cropping systems and Roots and Tubers). Major breakthrough research thrusts were defined for both areas, and aligned with the SC priorities. Key disciplines and investments were assigned to each research thrust.

- **Staffing and scope of Project D**

To address the issue of scope of work vs. staffing, started in 2005 (and ongoing in 2006, see below), core positions were relocated to concentrate and provide critical masses at one site, and new core positions were created. Specifically measures taken included:

- The total staff number in the Program D area was increased from 18 at the time of the CCER to 31 scientists in November 2006 with the number of core positions in the region was increased to 14, now representing 45 % of the positions;
- In Uganda, staffing actions concentrated on "banana related" scientists;

- In Tanzania, staffing focused on cassava (breeder, virologists etc.). Here, four new positions were created (nematologist, bio-technologist, pathologist, economist)
- In Southern Africa (Malawi and Mozambique) staffing actions focused on cassava and cereal/legume specialists.
- **Position along the R4D continuum and research approaches**
The issue of farming systems and benchmark approaches is integrated in new projects such as the DGDC funded project on banana and plantain systems in the Great Lakes Region, as well as in the USAID-funded joint IITA-CRS Crop Crisis Control (C3P) project, where biotic stresses are related to households wealth and food security in six Eastern African countries.

On-going implementation of CCER recommendations – current status

- **Staffing**
The creation and deployment of core positions as stated above continues in 2006. New positions filled are a legumes agronomist for Mozambique and a soybean breeder for Malawi.
- **Re-structuring and scope of project D**
In Southern Africa, a focus is now laid on cereal and legume systems, with core positions being deployed and projects on cereal-legume systems being developed.
- **Strategy building**
Following the process of strategy building on an IITA-wide scope, strategy meetings are being continued and held, since Strategic Planning Week 2005, for the major commodities. Strategy meetings in 2006 were and are:
 - The biotechnology strategy meeting in Nairobi
 - The *Musa* strategy meeting in Jinja, Uganda
 - The strategy meeting on roots and tubers in Ibadan, Nigeria

Overall conclusions

- IITA has accepted all the recommendations.
- At the time the CCER was carried out Project D was the largest single project at IITA in terms of geographic and disciplinary coverage, as well as in terms of subjects and crops. This meant that a restructuring was required but also that any restructuring of Program D could not have been efficiently done without re-aligning IITA's entire program structure. Both have taken place and are still ongoing.
- What was Program D up to 2005 is now a number of better defined agro-ecological zones (the area now belongs to two agro-ecological zones), as well as coherent commodity based MTP projects that allow focusing and synergies across SSA.
- A "strategy culture" is in place which has led to a further improvement of the focusing process as well as the definition of the breakthrough areas that were requested by the CCER.

Additional Background information

Scope and Goal of the CCER

- The aims of Project D were to enhance food security as well as to improve livelihoods and socio-economic development in ESA, by developing and promoting the adoption of improved technologies and market support services.
- In October 2004, a CCER for Program D was carried out with a basic assumption of the CCER was that Project D had "no single clear strategy to accomplish its aims (...)." Therefore the goals CCER were aimed to assist in at developing a new strategy for Project D.
- The CCER's objectives were:
 - To characterize the current structure and coherence of Project D;
 - Improve the ability to formulate and execute IITA's strategy for Eastern and Southern Africa;

- Organize activities coherently to make decisions that optimize the comparative advantage in achieving IITA's R4D mission;
- "It was not a "standard CCER" because it focused solely on strategy development; it did not include scientific evaluation of Project D."
- **Problems of Project D as outlined by the CCER**
The CCER document refers to several weaknesses and issues, without always being explicit. However, the major areas for action included:
 - **Scope of Project D**
 - Although Project D was considered "unique" amongst the three IITA eco-regional projects (D, E, F), this uniqueness was considered at the same time a potential weakness, due to its "immense geographical, agro-ecological, commodity and disciplinary coverage." It was stated that during the years 2001 to 2004, it had expanded tremendously in its scope and therefore needed a strategic realignment.
 - The – over-expanded – scope as the project had seven disciplinary outputs that were cutting across 6 crops.
 - Geographically, the project was concentrated on Uganda, Kenya and Tanzania, with smaller country sites in Malawi, Mozambique and Zimbabwe. Additionally, it operated in 6 more countries in the ESA-region (Rwanda, Burundi, Zambia, DRC, ROC and Sudan).
 - **Staffing**
 - At the time of the review there were only 18 scientists of which only four were on core funding, with the other 14 (78 %) on special project funding. Apart from the fact that scientists seemed to be thinly spread, the CCER expressed concern about the scientists also being involved in too much administrative work.
 - **Position along the Research-Development continuum and research approaches**
 - It was stated in the report that there was a concentration on research in the East, whereas much of the development work was mainly in more southern countries.
 - It was also made clear that Project D participants were heavily involved in "networks". Some of the research fields were well established (IPM), whereas other research fields were relatively new (e.g. cassava agronomy).
 - The CCER stated further that little work done on "farming systems" in benchmark areas.

5. Management and Board response to the Report of a Center-commissioned External review (CCER) of IITA's Project E: "Enhancing Livelihoods in the Humid and Sub-Humid Zones of West and Central Africa through Profitable and Sustainable Intensification of Diverse Agricultural Systems" May 2004

*Reviewers: Dr. Pierre Fabre, Head of Program, CIRAD Animal Crops Department Food Crops Program, TA 73/09 Avenue Agropolis, 34298 Montpellier, Cedex 5, France
and Dr. Yves Savidan, Cooperation Internationale et Partenariat, AGROPOLIS, Avenue Agropolis, 34394 Montpellier Cedex 4, France*

The IITA Board of Trustees and Management greatly appreciate the work of Drs. Pierre Fabre and Yves Savidan in reviewing IITA's Project E ("Enhancing Livelihoods in the Humid and Sub-Humid Zones of West and Central Africa through Profitable and Sustainable Intensification of Diverse Agricultural Systems"). The extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

Background

Project E was a complex project in terms of its geographical coverage, diverse ecoregional and economic situations, and multidisciplinary scientific activities. Its dominant features and target systems were a mosaic of forest fragments and agricultural land use dominated by traditional mixed cropping patterns stratified spatially (niche-specific patterns) and hierarchically (gradients in labor and input use intensity). Its mission was to maintain and optimize the ecological and socio-economic functions, adopt an integrated producer to user approach across commodity chains and improve opportunities for smallholder farmers to enhance and sustain their livelihoods. Responding to concerns at the 2003 Board of Trustees meeting, and successive project meetings during 2003, project outputs had been restructured from a commodity to an intervention based approach across commodity chains.

The review report had been qualified by the comments from the reviewer that the scope of the review of a complex project such as this could not be attained by one person and in the time frame allocated for the review. Hence the report presented could not be considered an appraisal report that assessed the quality of the research or its possible impact but a review of the dynamics of the project and its place in IITA's research agenda. Some comments of note had been:

- (1) the lack of provision for interactions with national and/or local partners in a project largely based on field intervention;
- (2) the lack of interaction with disciplinary project coordinators for insights on scientific strategies
- (3) the general framework of the project was relevant to IITA's mission and consistent with the institute's strategic plan ;
- (4) There was a 'hazardous' dependence on development funds;
- (5) the institute's involvement in development should be handled in the context of a "sustained partnership with NARS; it should not get absorbed by implementation and dissemination."
- (6) a top down project largely led by management and a need to strengthen and rebuild the collective ownership by members

Summary of Recommendations and Management and Board Responses:

Recommendation 1

CCER methodology

- *The reviewer suggests meeting with the three disciplinary project coordinators to be a step of future reviews.*
- *In order to tackle RDC's 17 monitoring questions it would be necessary to complete the review with an appropriate scientific evaluation (maybe more disciplinary focused).*
- *The review suggests that meeting the key national and local partners be a step of future reviews.*

Board and Management Response:

- IITA accepts these recommendations. The reviewer's suggestions have been taken into account in planning for the CCER for SP-IPM.

Recommendation 2

Relevance of Project E

- *The reviewer feels that strengthening national and regional research capacities should be re-emphasized in the actual governance of the project.*

Board and Management Response:

- IITA accepts this recommendation. This is an on-going process. The increase in end-user participation in our research brings in the additional elements of ‘bottom-up’ and ‘collective empowerment’ approaches suggested by the reviewer.
- The following are examples from work in 2004:
 - Efforts to strengthen the organizational capacity and marketing power of cocoa farmer cooperatives resulted in the elaboration of operational development plans for Tonikoko Farmers Union in Ondo State in Nigeria, Kuapa Kokoo Union in Ghana, and the emergence of a union of cooperatives in Côte d’Ivoire.
 - Farmers’ Field Schools (FFS) continued to prove a valuable tool for experiential transfer of technologies to improve the performance of cocoa farmers, reaching nearly 4,000 farmers in Ghana, Nigeria, Guinea, and Côte d’Ivoire.

Recommendation 3

Collective project elaboration

- *Streamlining and priority setting may be the key words for the internal challenge of (re)building project identity and rationale. Such an endeavor should be based on a large discussion between members.*
- *The review encourages the Project Coordinator’s and RDC’s present efforts to build this project in the long term and to accelerate this collective “refoundation”.*

Board and Management Response:

- *Streamlining and priority setting:*
 - IITA accepts this recommendation. The process of streamlining and priority setting continued until the changes in Research Management Arrangement (RMA) and the development of the new MTP projects. This included the shifting of selected activities and outputs to other projects as noted by the reviewer.
 - The new research management structure of IITA and the implicit approach of planning through the formulation of strategic objectives by scientists active in the respective research areas reflect the implementation of the recommendation.
- *Collective “refoundation”:*
 - IITA accepts the recommendation. It has been implemented through the 2007/2009 MTP.

Recommendation 4

Priority setting and reporting

- *There is a need for syntheses on priorities and achievements from a strategy viewpoint. (Individual) reports on activities should be tailored on the same format giving a few lines summary and setting the details of the most relevant activities aside in an appendix. The general documents on Project E should give the synthesis of achievements in strategic terms, i.e. reflecting main scientific orientations, and not only a long list of milestones that is difficult to apprehend.*

Board and Management Response:

- IITA accepts this recommendation. This was part of the process of streamlining and the suggested improvement in reporting of project achievements was noted.

- The new guidelines for the MTP have simplified reporting to the output target level. The activities and milestones are now reported in scientist work-plans.

Recommendation 5

Integrative research

- *The review suggests that the articulation of disciplines within Project E should be formalized as a critical “supply and needs” exercise in order to spot the drawbacks the team in charge of Project E will experience.*
- *The review fully encourages these on-going efforts to build an integrated organization of Project E, with due articulations with clearly specified and mutually agreed disciplinary targets. Active help of RDC is required in this process.*
- *A decisive area of work for the construction of Project E is to determine the new questions raised by an integrative approach.*

Board and Management Response:

- IITA accepts this recommendation. This has been handled at the RDC level through the definition of core competence and the inclusion of a review of the relevance or suitability of posting to specific duty station during contract reviews of all scientists.
- IITA accepts this recommendation. The development of the 2007/2009 MTP has resulted in better integrated projects. The output targets have been identified with a mix of disciplinary and interdisciplinary targets. The disciplinary activities have been fully integrated into the projects.
- IITA accepts the recommendation and the challenge of designing integrative research projects. This is being addressed in the 2007-2009 MTP and in the development of the 2008/2010 MTP.

Recommendation 6

Methodology

- *Commodity approach must be completed by farming system approach*
- *“System agronomy”, microbiology (applied to soil), plant pathology and ecophysiology should be reinforced (they are either inexistent or insufficiently present) among the Project E scientists.*
- *The review suggests that effectiveness of Project E scientists working at farm level could be enhanced by developing*
 - *guiding principles for on-farm research,*
 - *guiding principles for innovation dissemination, and*
 - *training activities on these issues.*
- *Research on impact should be part of every scientist’s duty at some points during its individual “research cycle”. This would allow her/him to better understand farm management, constraints and opportunities. Conversely, decisive impact assessment should be monitored by external specialists to avoid biases of all kinds.*
- *Shouldn’t productivity per person, per workday or per CFA F spent in operations and investment be the standard units for assessing impact?*

Board and Management Response:

Commodity approach must be completed by farming system approach

- IITA accepts this recommendation. Commodity chain approach has been utilized in the design of four of the MTP projects with an increasing attention to farming systems analysis.

“System agronomy”...

- IITA accepts this recommendation. There has been active involvement of a soil microbiologist based at Ibadan and supervising relevant work in Cameroon in addition to work in West Africa.
- Plant pathology research has been significantly increased through the work of new pathologists (senior scientist and postdoctoral fellow) based at Ibadan but also working actively in Cameroon.
- Ecophysiological studies have included the work of a scientist based in Ibadan and also through collaboration with the University of Reading on yams.
- Finally, the disciplinary contributions to the systems projects have been increased in the 2007/2009 MTP.

The review suggests that effectiveness of Project E scientists working at farm level could be enhanced by developing guiding principles for on-farm research,- guiding principles for innovation dissemination, and training activities on these issues.

- IITA accepts this recommendation. In addition to the old text by Mutsaers et al. (1997), research guides such as Gauhl et al (1998) and Schulz (2000) contributed to the basis for the on-farm research approaches being used.
- Subsequent training events, additional documentation of methodologies (e.g. Douthwaite, B. 2002; Ellis-Jones et al. 2005) and success stories (Tenkouano et al. 2006) have been the means to upgrade the capacities of scientists in on-farm research and dissemination of innovations.

Literature cited:

Douthwaite, B. 2002. Enabling Innovation: A practical guide to understanding and fostering technological change. Zed Books London & New York in association with CAMBIA, Canberra

Ellis-Jones, J., S. Schulz, D. Chikoye, N. de Haan, P. Kormawa, and D. Adedzwa. 2005. Participatory research and extension approaches. IITA Research Guide 71

Gauhl, F., S. Ferris, C. Pasberg-Gauhl, A. Lawrence. On-farm yield loss assessment of black sigatoka on plantain and banana. IITA Research Guide 67, 1998.

Mutsaers, H.J.W., G.K. Weber, P. Walker and N.M. Fischer. 1997. A Field Guide for On-Farm Experimentation. IITA-CTA-ISNAR. 235pp

Schulz, S.. Farmer participation in research and development: the problem census and solving technique. IITA Research Guide 57, 2000.

Tenkouano, A., S. Hauser, D. Coyne and O. Coulibaly. 2006. Clean Planting Materials and Management Practices for Sustained Production of Banana and Plantain in Africa. *Chronica Horticulturae* 46 (2):14-18

Research on impact should be part of every scientist's duty at some points during its individual "research cycle"...

- IITA accepts this recommendation. In an effort to enhance the involvement of biophysical scientists in impact assessment, social scientists have developed a framework for conceptualizing impact assessment and promoting impact culture at IITA.
- First, the linkages between agricultural research and rural livelihoods and the implications for evaluating the impact of agricultural technologies are illustrated, using the sustainable rural livelihood framework.
- Second, a strategy for institutionalizing an appropriate data system is proposed to make impact assessment an integral part of the agricultural research process.
- To operationalize the data system, data sheets for each stage of the impact assessment process are developed to guide researchers in gathering relevant and adequate information relating to each agricultural technology.

Shouldn't productivity per person, per workday or per CFA F spent in operations and investment be the standard units for assessing impact?

- IITA accepts the recommendation but impact assessment research at IITA uses quite a range of indicators - both partial productivity measures as well as returns to research investments - to demonstrate the benefits of research investments. These include yield increases (or yield losses avoided) per unit of land or per person day, rate of return, net present value, and benefit-cost ratio.
- A number of examples of evidence of impact of IITA's research, using several of these indicators, have been compiled in an IMPACT document 'Achievements in impact assessment of agricultural research: IITA experience, 2001-2006' and this is now in the process of publication. In many cases farmers value other 'things' such as spare time, health, etc as important effects of interventions. These are not easy to measure and difficult to value in monetary terms.

Recommendation 7

Development focus

- *Emphasizing on development compels to fine tune the management of human resources (as for scientists' careers) and the overall long-term scientific investment.*
- *Reviewer warns that the strong involvement of IITA in development be handled in the context of a sustained partnership with NARS, and that it does not get absorbed by implementation and dissemination.*

Board and Management Response:

- *Emphasizing on development compels to...*
- *IITA accepts these recommendations. At IITA, the emphasis is actually on 'research-for-development' and part of the answer to this recommendation is the suggestion made in the next recommendation. While individuals hired for scientific research need to appreciate the ultimate development goals of their work such scientists are not required to become development workers.*

Reviewer warns that the strong involvement of IITA in development be handled in the context of a sustained partnership with NARS.....

- *IITA has remained very conscious of the needs for "a sustained partnership with NARS". And thus fully endorses the recommendation.*
- *Strategic partnerships with key NARS are a major aspect of research for development planning and of developing impact pathways. Facilitating partnerships between NARS and NGO's and the private sector is also important for implementation and dissemination.*

Recommendation 8

Managing interdisciplinary activities and partnership

- *The review believes that questions on inter-disciplinary practices and partnership involvement reflect the major challenges facing Project E management. DDG-Rs and RDC should play a major role in that respect.*

Board and Management Response:

Managing interdisciplinary activities and partnership

- *IITA accepts this recommendation. The questions on inter-disciplinary practices have also been thoroughly discussed at various levels in IITA, especially by the RDC, leading to a modified RMA and MTP projects that addresses some of the weaknesses of the identified in the CCER.*
- *Partnerships with relevant agencies have continued to expand while respecting our engagement protocol and always remaining conscious of the sentiment expressed in the previous recommendation.*

6. Management and Board response to the Report of a Center-Commissioned External review (CCER) of IITA's Project C: "Assessing Impact, Formulating Policy Options and Systems Analysis" January 2004

Reviewed by: Prof. Eric Tollens Catholic University Lueven Department of Agric. & Environmental Economics Faculty of Agricultural and Applied Biological Sciences de Croyleaan 42 B-3001 Leuven (Heverlee) Belgium

The IITA Board of Trustees and Management greatly appreciate the work of Professor Tollens in reviewing IITA's Project C ("Assessing Impact, Formulating Policy Options and Systems Analysis". The extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

History of Project

This review and monitoring exercise comes at a time when social science capacity at IITA is being expanded, largely driven by donor-financed projects. In fact, IITA has been very successful in attracting donor financing for competitive projects tendered by donors for sub-Saharan Africa.

Project C has 26 project members, of which only 4 are on unrestricted core budget. Total scientist input in Project C is 12 SSY (senior scientist years). The draft 2004 core budget of Project C is 2.4% of UC of IITA (\$70,000) while 13% of IITA senior scientist years are in the project. Thus, Project C has been very successful in attracting RC/SP financing. It is probably the most successful project at IITA in attracting donor financing. But this carries the risk that its research agenda is largely donor driven. This is not bad per se as long as IITA's core mandate in social science is fulfilled. This will be analyzed hereafter.

Summary of Recommendations and Management and Board Responses:

Recommendation 1

Benchmark area research

- *Social science interaction in the benchmarks is important enough to warrant a minimum of one social scientist as part of the resident team in each benchmark area. Needless to say, as much as possible needs to be done in partnership with NARS and NARS researchers, thus also contributing to capacity building.*

Board and Management Response:

- IITA accepts this recommendation. Although the term "benchmark" is still subject to discussion, as one could speak of "benchmark" sites, agro-ecological zones or other reference areas, which may differ in terms of scale and homogeneity; however, the distribution of social scientists has been improved since 2004.
- The improvement of distribution of social scientists across the IITA-sites in Sub-Saharan Africa is ongoing. During the CCER, social sciences who were mainly concentrated in West Africa, and there mainly in Benin and Nigeria (specifically Ibadan), a process was initiated to better allocate IITA's social scientists across Sub-Saharan Africa. By the end of 2006, social scientists will be based with IITA teams in Nigeria, Benin, Cameroon, Ghana, Uganda, Tanzania, and Malawi. The impact economist based in Ibadan has been transferred to Malawi, while a new impact economist for West-Africa has been employed since 2005. This means that now in each sub-region, there is at least one economist.

- This placement of staff has also increased our opportunities to work in partnership with NARS, Universities and others in all the sub-regions and to contribute to capacity building more effectively.
- The next step will be to increase the number of scientists from other social science disciplines, such as sociology and anthropology at IITA.

Recommendation 2

Market development

- *IITA's involvement and recent expansion in market development for its mandate crops are appropriate, but need to be linked at all times to process research conducted in the benchmarks.*
- *IITA should limit its work on (macro) market development to pilot schemes, not state or nationwide, but pilots large enough and diverse enough to provide adequate feedback to the biophysical scientists, and the other projects at IITA.*
- *It may be appropriate for IITA to develop also some (new) benchmarks particularly suited to market development, especially when they involve industrial type processing of commodities.*

Board and Management Response:

- IITA accepts this recommendation although we also accept the need to consider the IPG nature of any outputs from these activities. We have expanded our research in commodity chains to include post harvest processing, product development and market analysis but have not considered market development for specific products as part of our MTP projects. We think that there are many appropriate partners for this research, especially in the private sector, and will take this partnership approach to any expansion in the area of market development. We also conduct this research as a focus of pilot schemes which are fully integrated with the biophysical scientists. We have a number of these integrated projects on-going within the MTP projects.
- We have also been involved, in partnership, with two new projects which will eventually focus on biofuels/ethanol production from cassava.

Recommendation 3

Agricultural policies

- *IITA needs to permanently monitor macro agricultural policies and even help in the development of better agricultural policies when opportunities arise. But at the same time, IITA does not have a real comparative advantage to do policy analysis research on its core budget, on a continuing basis and with sufficient critical mass. Thus, IITA needs to link up and work together more frequently and more regularly on agricultural policies, particularly with IFPRI, but also with NARS and other partners.*

Board and Management Response:

- IITA accepts this recommendation. IITA has partnered with IFPRI for a research in agricultural policy in Nigeria. Specifically, IFPRI scientists provided training on the IFPRI DREAM model to IITA scientists and their NARS collaborators which led to the publication of the book on Agriculture in Nigeria in 2005.
- Since 2005, IFPRI has been providing the leadership in the SAKSS project in sub-Saharan Africa for which IITA is responsible for implementation in West Africa. We have a number of other on-going collaborations with IFPRI and other partners (NARS and Universities) in the area of agricultural policies.

Recommendation 4

Project C - Title

- *The present title of Project C: “assessing impact, formulating policy options, and systems analysis”, only poorly reflects IITA’s social science role in technology generation, validation, and scaling-out.*
- *It is recommended that a more appropriate title be adopted, which better reflects IITA’s social sciences activities as an international agricultural research organization.*

Board and Management Response:

- IITA accepts this recommendation. After a consultation process in 2004, the title of project C was changed to “Supporting Innovation Processes”, acronym: SINPRO. SINPRO also had its own logo.

Recommendation 5

Logframes, outputs, activities, staffing, and budgets

- *A major simplification is in order of outputs, logframes, and activities, a scaling down reflecting a sharper focus, with the cleaning out of activities that have been completed, the merging of similar activities, a constantly updated computer record of outputs and activities, percentages of time (senior and junior researchers) to be spent and budgets*

Board and Management Response:

- IITA accepts this recommendation. New guidelines established by the Science Council affected the development of the 2006/ 2008 MTP and the 2007/2009 MTP. By the beginning of 2005, Program C had been reduced from seven to five outputs. The simplification that has occurred and the integration of Project C activities within the new MTP projects have resulted in greater focus. The need to monitor output targets has resulted in many of the changes in accountability.

Recommendation 6

GIS

- *The excellent GIS activity at IITA has presently a biophysical orientation. More effort should be made to integrate vital socioeconomic information, such as population density, poverty mapping, social indicators, market flows, etc.*

Board and Management Response:

- IITA accepts this recommendation. The integration of socio-economics into the GIS work is important aspect of IITA focus. Since 2004 and increasingly in 2005, the GIS unit has been involved in mapping social and economic data. For example GIS has been used in a food security study in Nigeria in 2004, in the establishment of the West African SAKSS node which is housed at IITA-Ibadan, and in conducting GIS research in the SSA CP-benchmark sites of west, central, and southern Africa.
- With the continuation of the West African SAKKS and the launch of the East African Crop Crises Control Project, food insecurity and its prevalence in six countries is being evaluated through socio-economic studies and then “mapped” using GIS. There is also a strong linkage to the bio-sciences, such as the Crop Crises Control Project linking issues of food security and wealth to biotic stresses like cassava mosaic disease and banana bacterial wilt.

Recommendation 7

FOODNET

- *The question what constitutes IITA's comparative advantage in FOODNET type research needs to be addressed and more links must be developed with the biophysical scientists involved in technology generation/testing, dissemination.*
- *The important lessons learned so far must be documented in a synthetic paper, perhaps coupled with impact assessment and published in the Impact series at IITA.*

Board and Management Response:

- IITA accepts this recommendation. Up to 2004, FOODNET mainly operated through commissioned market studies. In the subsequent phase, starting mid 2004, FOODNET was re-directed to serve as a network to enhance market and post-harvest research in Eastern Africa. This was to meet the strong criticism of the first phase, where there had been an obvious lack of integration into the ASARECA network.
- FOODNET now facilitates research in the above mentioned fields together with NARS and other partners embedded in ASARECA. It also assists networks in impact assessment and provides market intelligence for commodity based networks and projects (e.g. for EARRNET, for the regional CFC cassava project, for the regional DGDC project on bananas in the Great Lakes region).
- FOODNET staff is now fully integrated in IITA's socio-economic work in Eastern Africa. Better documenting the "lessons learned" and the past impact of FOODNET is planned.

**Recommendation 8
RUSEP**

- *One needs to question the role of IITA as a research (and development) organization in scaling-up of RUSEP. It needs to happen with partners (and subcontracting) and IITA's role probably needs to be scaled down, not up.*
- *A lot can and should be learned from rapid rural industrialization in the mandate commodities in other countries and continents and IITA needs to tap that experience.*

Board and Management Response:

- IITA accepts this recommendation. The RUSEP project finished in 2004 and its work has continued through partnerships.

**Recommendation 9
Priority setting**

- *It is suggested that IITA limit itself to Nigeria for the integration of the three adopted approaches in priority setting.*
- *Priority setting is really an exercise in ex-ante impact assessment, and must thus be linked closely to impact assessment.*

Board and Management Response:

- IITA accepts this recommendation. A comprehensive priority setting for agricultural research in Nigeria has been undertaken in 2005. This exercise was based on the input of bio-scientists from NARS and CGIAR centers. It applied a comprehensive set of methodologies addressing potential impact on efficiency and equity, as well as food security from agricultural research domains. This study has led to various publications listed below.

Alene, A., Manyong, V.M., Tollens, E.F. and S. Abele (2006): The efficiency–equity tradeoffs in agricultural research priority setting: the potential impacts of agricultural research on economic surplus and poverty reduction in Nigeria. Contributed paper at the 26th Conference of the International Association of Agricultural Economists, Gold Coast, Australia from 12-18 August 2006.

Alene, A., Manyong, V.M., Tollens, E.F. and S. Abele (2006): Targeting agricultural research based on potential impact on poverty reduction: strategic program priorities by agro-ecological zone in Nigeria. *Food Policy*, in press.

Recommendation 10

Impact

- *An impact "culture" needs to be created such that biological scientists, at every stage of the technology generation process, provide data to the impact assessors. They need to know what the minimum data set is for impact assessment. Such a minimum data set could, e.g. be made available as a template in an Access database.*
- *It is suggested to create an impact assessment working group in order to "cultivate" this culture and to sensitize the scientists. This working group could largely be "virtual", operating on an intranet website at IITA and communicating by email.*
- *The aim should be to produce two Impact publications per year.*
- *The suggestion is that with respect to macro-impact assessment, attention should be paid to the regular monitoring of market prices of the important IITA commodities in a country like Nigeria.*

Board and Management Response:

- IITA accepts this recommendation. An "Impact Culture" has been promoted with the creation of an impact working group that is lead by two scientists. Market prices are routinely monitored for a number of the IITA commodities within Nigeria and in other countries where we are working. This group is working on the establishment of a 'minimum data set approach' to incorporate impact assessment into all our projects. A conceptual framework for impact assessment was established by this group who are publishing in the IITA IMPACT series.
 - There has been a series of IMPACT publications since 2004; 4 were published in 2004, 5 in 2005 and so far 9 have been published in 2006.
- IITA's impact work is also becoming more visible to the scientific community.
 - IITA scientists took part in and presented papers at the inaugural symposium of the African Association of Agricultural Economists (AAAE) in Nairobi, Kenya (6–8 December 2004).
 - At the International Association of Agricultural Economists' triennial conference in Brisbane in 2006, IITA's impact group was represented with a mini-symposium entitled "Assessing the impact of agricultural research on rural livelihoods in developing countries; Approaches, challenges and results". The mini-symposium included research findings from IITA (including a presentation on the integration of socio-economic data in GIS) and other research institutions, both from the North and the South.

Recommendation 11

Publications

- *It is suggested that IITA make available a small budget (\$2000) for the publication of training modules at IITA from Project C.*

- It is suggested in terms of publications:
 1. to provide incentives for publications in refereed journals;
 2. to start a working papers series such that drafts of publishable papers can be circulated within and outside IITA, and can then be developed easily into publishable papers.
- For the more development oriented research activities at IITA such as FOODNET, RUSEP, WARMNET, etc. books should be prepared, e.g. at the occasion of workshops or seminars, with the major lessons learned from such projects.

Board and Management Response:

- IITA accepts this recommendation. Since 2004, 18 publications just on impact assessment have been delivered. The increasing pace of publications was partially due to the consolidation strategy of Project Program C that was pursued in 2004/2005, which included joint planning and focusing research, but also due to the shifts in core competencies, which increased and strengthened social scientist positions at IITA.
- Social sciences and in particular economics have received a greater interest in the last two to three years at IITA, due to the recognition that economic and social information is crucial for technology development and dissemination.
- Finally, overall IITA incentives have supported publications throughout IITA, and consequently also in the social sciences program. The working paper series of Program C was started up in 2005, with two working papers published so far.

Recommendation 12

Training

- *There is a big need in the benchmark areas to do capacity building in partner institutions such that they can carry out local specific parts of the R4D continuum, and eventually manage the scaling-out process. Training and capacity building in this context is (still) a top priority.*

Board and Management Response:

- IITA accepts this recommendation. In Cotonou, IITA has established a social science lab with a special focus on training of national scientists. At Ibadan, there is also a social science laboratory where students in social sciences from neighboring universities spent short to long periods to get acquainted with new methods/approaches in social sciences. The work of social scientists at IITA is undertaken in collaboration with colleagues from partner institutions, thus providing the in-the-field training to NARS social scientists.

General Comments - Overall conclusions

- The central hope of the CCER was “It is hoped that this CCER will help to convey the message that some more soul searching within Project C is needed, in order to arrive at a consensus on the central role of social sciences at IITA, thus improving overall coherence and effectiveness.” has been met.
- Despite or maybe even as a result of the realignments in 2005 and 2006, social sciences at IITA are better integrated in the bio-physical work, better distributed among the other scientific fields and across geo-domains, while they are maintaining a strong coherence and effectiveness through their integration in the new MTP projects and at the same time being part of the MTP projects that cross cut in the fields of priority setting, impact assessment and social sciences (*Agriculture and Health, Opportunities and Threats, High Value Crops*).

7. Management and Board response to the Report of a Center-Commissioned External review (CCER) of IITA's Project F: Improving and Intensifying Cereal-Legume Systems in the Moist and Dry Savannas , October 2003.

Reviewer: Dr. Jillian Lenne

The IITA Board of Trustees and Management greatly appreciate the work of Dr. Jillian Lenne in reviewing IITA's Project F (Improving and Intensifying Cereal-Legume Systems in the Moist and Dry Savannas). The very extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

The IITA Management, fully endorsed by the Board of Trustees response to the review of Project A is below:

History of Project

Project F is one of six projects in the IITA research portfolio of three disciplinary and three agro-ecological zone projects (see above). It was created in January 2002 from the partial or total merger of 6 earlier projects:

- Project 3. Improving cowpea–cereal systems in the dry savannas*
- Project 4. Improving maize–grain legume production systems in WCA*
- Project 8. Integrated management of legume pests and diseases*
- Project 9. Integrated management of maize pests and diseases*
- Project 11. Protection and enhancement of vulnerable cropping systems*
- Project 12. Improving of high-intensity food and forage crop systems*

The main research base for Project F is Kano, Nigeria. It is supported by Zaria and Ibadan, Nigeria; BCCA, Benin; West and Central Africa Collaborative Maize Network (WECAMAN); Programa Nacional de Fortalecimiento da Agricultura Familiar (PRONAF); West African Seed Network (WASNET) and the IITA/GTZ West African Seed Development Unit (WASDU).

Summary of Recommendations and Management and Board Responses:

Recommendation 1

- *It is recommended that Project F should recognize the importance of livestock in savanna systems in West Africa in the project title.*
- *It is suggested that the project title be modified to include livestock: "Improving and intensifying cereal–legume–livestock systems in the moist and dry savannas"*

Board and Management Response:

- In 2004, IITA accepted the recommendation and revised the title. The new project title is 'Improving and intensifying cereal-legume-livestock systems in the moist and dry savannas'.
- In 2006, IITA re-aligned its research program into 7 MTPs due to the need for greater integration of research activities. Project F has been renamed to 'Cereal and Legume Systems'. Livestock issues will be addressed by collaborating with ILRI and NARS as part of the cereal and legume production system.

Recommendation 2

- *It is recommended that the logframe should be revised based on the above suggestions if it is to function as a useful monitoring and planning tool.*
- *It is also suggested that Project F members would benefit from training in logframe function and value.*

Board and Management Response:

- IITA accepts this recommendation. The logframe of the Cereal and Legume Systems project was formulated according to the guidelines of the SC which shows clear linkages between activities, outputs, outcomes, and impact. The logframe is used for evaluating and monitoring of research activities (output targets) with respect to SC priorities.

Recommendation 3

- *It is recommended that Project F should develop a longer term planning horizon by translating its future priorities based on a well-drafted and realistic logframe and other planning tools (e.g. a strategic vision framework for ten years) into potential projects e.g. 1–2 page Concept Notes. Such Concept Notes could then be readily developed into projects when opportunities arise through core or special project funds.*

Board and Management Response:

- IITA accepts this recommendation. Cereal and Legumes Project has a planning horizon of 3 years, which is in line with the planning horizon of all IITA MTPs projects. These plans also fit in the IITA strategic plan of 2001 to 2010.
- Planning meetings including regular and annual field visits, project meetings as well as strategic work planning week have identified a number of priority gaps which have been developed into concept notes or proposals.
 - Examples include development of sustainable seed systems for West and Central Africa, Integrated control of *Striga* in West and Central Africa, Impact and adoptions of IAR4D technologies, and Pesticide issues (safe use, food safety, food quality, and impacts & capacity building).
- The Cereal and Legumes Systems project is in the process of developing a 5 to 10 year strategy, which will be ready by March 2007.

Recommendation 4

- *It is therefore recommended that a mechanism for monitoring Project F's contribution to the Institute goal should be developed by IITA.*

Board and Management Response:

- IITA accepts this recommendation. Each MTP's output targets, which contribute to the goals of IITA, are monitored by the deputy directors and Deputy Director General -Research for Development, through field visits, midterm reviews, project meeting, strategic planning week and seminars or annual reports.
- IITA has an online system for capturing, storing and reporting or assessing progress made toward achievement of output targets for each year.

Recommendation 5

- *It is recommended that:*
 1. *Project F undertakes a competency assessment of its core skill needs. Strategies, including a long-term planning horizon for staff replacement, should then be developed to sustain the core competencies over time through appropriate funds—either core and/or special project;*
 2. *IITA should assess the advantages in research efficiency and cost savings in locating a critical mass of scientists at Kano (agronomist, soil scientist, and socioeconomist in addition to current skills) and establishing an office and resourced field laboratory at Zaria. Other agroecological zone (D and E) projects based in Uganda and Cameroon have the advantage of a critical mass of scientists, including specific project socioeconomists, based in the main research location;*
 3. *Project F should establish a system for guiding and mentoring young and new project scientists by more experienced scientists where the need has been established; and*
 4. *IITA should foster a culture of accountability among scientists to meet their participation and reporting responsibilities in each project. This is especially important for part-time project F members, no matter what their time allocation.*

Board and Management Response:

1. IITA accepts this recommendation. Core skills required to tackle key constraints in the savannas have been identified and recommendations made to the Research for Development Council (RDC), who have incorporated the suggestions into an institute wide assessment of core skills.
 - a. Realignment of the IITA research portfolio into 7 MTPs has improved interaction among different disciplines and has directly addressed this recommendation. The Cereals and Legumes program has a strong disciplinary team.
2. IITA accepts this recommendation. Over the past 3 years, Kano station has been functioning as a hub for research in the savanna of northern Nigeria. Scientists based at this station include a cowpea breeder, crop physiologist, weed agronomist, production economist, agronomist, and a production economist. ILRI recently advertised for a position of animal nutrition, which will be based at Kano. The team in Kano is backstopped by other scientists based in other locations especially Ibadan.
 - a. To improve our collaborative activities with the Institute for Agricultural research (our host institute in Kano), a small office/laboratory equipped with a computer and open air drying facilities is now fully functional in Zaria.
3. IITA accepts this recommendation. All IITA scientists (junior or new) are assigned supervisors (more senior scientists) and a deputy director who mentors and guides their research program.
4. IITA accepts this recommendation. IITA has developed an online data acquisition system, where all work plans and output targets for each scientist are archived and monitored by the respective Deputy Director. This system will improve accountability. Integration of MTPs has also improved the accountability with respect to reporting.

Recommendation 6

- *It is recommended that Project F, in close collaboration with Project C, realistically should assess what it can achieve in the current MTP planning period in Output 1 with available resources and then re-drafts the activities and milestones accordingly.*

- *It is further suggested that joint activities with Project C should be highlighted and reported on in both Project C and F annual reports.*

Board and Management Response:

- IITA accepts this recommendation. In February 2005, all activities under output 1 were reviewed and prioritized by project F and selected project C members. Project C addresses only cross-cutting and more strategic socio-economic issues and develops methodologies or frameworks that are tested or validated in Project F. Project F provides feedback to project C to refine methodologies. This approach has been retained in the new MTP projects.

Recommendation 7

- *As IITA has been working on soil nutrient and weed management for many years, it is recommended that, where lacking, e.g. in the dry savannas, available information should be archived and analyzed to summarize results already achieved in Output 2.*

Board and Management Response:

- IITA accepts this recommendation. Most of the work on weed and soil management has been published in peer reviewed journals. This information is used to develop new strategies for integrated crop, soil and weed management farming systems in the savannas.

Soil management

- Work has been completed (over 20 articles) to unravel soil processes that play a key role in the technologies being developed to arrest soil degradation and improve crop productivity in the West African savanna. The focus has been on understanding the processes governing nitrogen and phosphorus availability to improve their use efficiency. Consequently, the status of soil P has been assessed, using both conventional and isotopic techniques. The soil P fractions have been quantified, and the P adsorption and desorption characteristics (including factors controlling them) have been described.
- In addition, the influence of organic residues and management practices on the labile P pools and, subsequently, on P availability has been studied. All these results are helpful in designing strategies for the improvement of P availability to crops and developing management practices that increase the use efficiency of N and P. These include the use of P efficient legume genotypes with high N₂ fixing ability, crop and fertilizer management practices that reduce N leaching, and a combination of organic and inorganic sources of nutrients.
- Methods have also been developed to investigate water–nutrient interactions hypothesized to be the key process behind the positive interactions between organic matter and nitrogen fertilizer when applied in combination to maize.

Weed management

- Publications (over 20 articles) on weed research include assessing the response of weed seed banks to different control options, assessing the impact of cover crops on weed density and composition, integrating the use of herbicides in smallholder cropping systems, evaluating competition between improved crop varieties and weeds under different input levels, testing weed models and developing and promoting the uptake of improved weed management practices by farmers.

Recommendation 8

- *It is also recommended that additional and innovative opportunities should be considered in Output 2 for increasing organic matter in cereal–legume systems in the savannas such as living fences.*
- *As the 5th EPMPR highlighted the value of quantifying the contribution of IITA soil nutrient and organic matter management practices to halting degradation processes, it is suggested that existing long-term experiments and/or additional trials be used/established to respond to this recommendation in order to fully assess the impact of IITA’s technologies in the savanna system.*

Board and Management Response:

- IITA accepts this recommendation. As an increased level of soil organic matter is a prerequisite for increased crop production in the savanna; cropping systems that generate high quantities of organic matter have been developed and tested on-farm. The work includes the integration of crop varieties that produce high above-ground biomass that can be added to the soil after harvest, the use of off-site plant residues, and the production and preservation of good quality manure during the dry season. Improved cereal–legume cropping systems such as maize–soybean rotation have been developed that optimize the benefits from the legumes in terms of N input, reducing weed (*striga*) infestation, supplying high quality food, and generating income.
- IITA is promoting the use of animal manure and maintaining crop residues on the soil surface as means of improving soil organic matter in the soil. Research is under way to improve the availability of animal manure by feeding crop residues to livestock, collecting and storing the manure, which is applied to the field at the beginning of the rain season.
 - For example, maize, groundnut and cowpea intercrop can produce approximately 8 ton of crop residues, which can produce 3.5 ton of manure annually.
- IITA has long-term trials evaluating the contribution of organic matter by grain legumes (soybean and cowpeas), green matures (*Aeschynomene histrix* and *Pueraria*) and forage legumes (*Stylosanthes*) in the savannas.

Recommendation 9

- *It is therefore recommended that careful thought should be given to combining the three breeding Outputs 3–5 into one Output to enhance cross-links and integration on generic breeding objectives and provide greater systems focus.*

Board and Management Response:

- IITA accepts this recommendation. The three breeding outputs have been combined into one output which captures the objectives of cowpea, maize and soybean breeding. This will give the Cereal and Legume Systems MTP project strengthened linkages between breeding, natural resource management and crop protection, and post harvest activities.

Recommendation 10

- *In order to highlight the impact of IITA’s breeding programs, it is recommended that Project F should put further effort into quantifying the progress made in improvement of maize, cowpea, and soybean over the past 20 or more years, taking into account that targets and priorities have changed over this period.*

Board and Management Response:

- IITA accepts this recommendation. Studies on genetic gain of maize and soybean have been published (Journal of Agricultural Sciences 142 (5): 567-575-maize and project F annual report 2004-soybean).

Recommendation 11

- *It is also recommended, as highlighted by the 5th EPMP, that the comparative advantage of IITA (vis-à-vis other key research institutes e.g. CIMMYT) in continuing to put substantial effort into breeding maize, cowpea and soybean should be clarified and quantified.*
- *Although impressive advances in developing dual-purpose cowpea varieties have been made, less effort has been given to-date to dual-purpose maize and soybean. No doubt, the advances in developing quality protein maize and enhanced β -carotene maize will contribute to both human and monogastric nutrition but a higher priority to improving stover/residue quantity and quality (especially digestibility) in both maize and soybean is justified by the increasing importance of ruminant feed in savanna systems in West Africa.*

Board and Management Response:

- **IITA accepts this recommendation. IITA's breeding work on maize in west and central Africa (WCA) focuses on the humid lowlands, while CIMMYT's work in eastern and southern Africa (ESA) concentrates on the mid-altitudes and highlands. The disease and insect pest complex in the lowlands of WCA are different from those in the mid-altitude and highland areas of ESA.**
 - **For example, major foliar diseases in the lowlands of WCA are southern corn leaf blight, lowland rust and Curvularia leaf spot, while in the mid-altitudes and highlands of ESA it is northern leaf blight, highland rust and gray leafspot.**
 - **The two species of stem borer that are important to maize in WCA are *Sesamia calamistis* and *Eldana saccharina*, while those that are important to ESA are *Chilo parthelous* and *Busseola fusca*.**
 - **There are also biophysical differences between the lowlands and the highlands that affect the adaptation of maize. Thus, the breeding program of IITA and CIMMYT are complementary because they address different constraints and agroecological zones.**
- **IITA and CIMMYT have collaborative projects in a number of fronts in Africa. For example:**
 - **The African Maize Stress Project, designed to develop and disseminate germplasm with resistance to Striga and stem borers, tolerance to drought and low soil nitrogen in East, Central and West Africa;**
 - **Mapping Striga resistance genes transferred from wild maize, *Zea diploperennes*, to cultivated maize where IITA developed mapping populations for East and West Africa, extracted progenies from these populations, and evaluated them in Nigeria. Seeds samples of the progenies derived from the East African mapping populations were supplied to the CIMMYT Biotechnology Unit for genotyping. IITA also provided the phenotypic data to CIMMYT for QTL analysis.**
 - **IITA is currently working with CIMMYT on a collaborative Quality Protein Maize Project for Africa where the two centers focus on the development of germplasm adapted to their respective regions and also share and exchange germplasm.**
 - **IITA also works closely with CIMMYT in the HarvestPlus Challenge Program. The two centers have exchanged ideas and developed a joint logframe for maize under the HarvestPlus Challenge Program. They also share their work plans as well as progress reports in the HarvestPlus project.**

Recommendation 12

- *It is therefore recommended that higher priority should be given to improving stover/residue production and quality in trait improvement for maize and soybean.*

Board and Management Response:

- IITA accepts this recommendation. Improving the quality of maize stover is not an objective of the current breeding program because of financial constraints. However, when funds will be available, all genotypes with the 'stay green trait' will be tested for digestibility in collaboration with ILRI/NAPRI.
- One of the objectives in soybean breeding is identification of dual purpose genotypes with give good grain as well as fodder yield. A number of promising genotypes have been identified with a grain yield of 1500 to 2000 kg/ha and fodder yield ranging from 1500 to 3200 kg/ha.

Recommendation 13

- *As IITA orientates its research agenda towards development of technologies to capitalize on commercial opportunities that are likely to be crop-specific, it is recommended that priorities should be given to maize, cowpea, and soybean and trait priorities in Project F should be re-assessed periodically with regard to marketing and agri-processing opportunities.*

Board and Management Response:

- IITA accepts this recommendation. A cowpea study has been undertaken and a report available. In this study, consumer preferences identified were seed size, seed color, taste, cooking ability, ability to grow in intercrop settings, etc. This information was made available to the cowpea breeder so that they can factor these requirements into the breeding program. IITA has also conducted a food demand study in Nigeria for cereals, including maize. The results are still in the draft format.

Recommendation 14

- *It is recommended that efforts should be made to strengthen the socioeconomic input to Output 6 especially through enhanced links with Project C, RUSEP, and appropriate networks.*

Board and Management Response:

- IITA accepts this recommendation. Social science input into Output 6 has improved.
 - Examples of studies jointly carried out by biophysical and social scientists include assessment of adoption and impact of cowpea and maize varieties, cost benefit studies of cowpea 'best-bets' technologies, impact of balanced nutrient management systems in the savannah and developing farm household mathematical models in integrated crop-livestock systems. The Sub-Saharan Challenge Program for the KKM pilot site has provided an additional forum for a close integration of social and biophysical scientists through its new network of partners.
 - This is happening despite the end of the RUSEP project.
- Re-alignment of the IITA research program into the 7 MTPs further increased the multi-disciplinary approach, where biophysical and social scientists work together.

Recommendation 15

- *It is recommended that efforts should be made to further incorporate appropriate IPM components into CASH through stronger links with Project B and PRONAF and, where appropriate, the use of farmer field fora.*
- *Although Output 6 (and Output 7) is potentially more able to win special project funds than other Outputs in Project F, as the activities are nearer-impact, this has a disadvantage for effective integration of disparate special projects supported by different donors into a coherent research program. CASH provides such a framework to link and integrate different projects.*

Board and Management Response:

- IITA accepts this recommendation. Activities on testing new crop, soil and livestock management practices are multidisciplinary in nature. A plant pathologist has joined the team to address some IPM issues, while the new production economist is using farm household mathematical programming modeling to understand how land, labor, animal traction and resource endowment affects crop-livestock systems. Participatory research and extension approaches were used to capture farmer's perception on crop varieties (groundnut, cowpea, maize, and sorghum), labor requirements, and benefits. Farm household modeling will also capture farmer's decision making processes.

Recommendation 16

- *It is recommended that the CASH approach should be given high priority as well as support by core and special project opportunities in Project F and that the CASH approach be considered by other AEZ projects, if they are not already doing so.*

Board and Management Response:

- IITA accepts this recommendation. All systems projects in IITA are using a commodity chain approach where all constraints and opportunities along the production to consumption chain are addressed in a holistic manner. This approach is more comprehensive than the CASH approach which is only focusing on production issues in crop-livestock systems

Recommendation 17

- *It is also recommended that where relevant, improved, farmer-acceptable technologies from non-IITA mandate crops such as improved varieties of, and management practices for sorghum, millet, groundnut, pigeon pea, and cotton be included in the best-bet combinations where they can make a contribution to improving and intensifying cereal–legume–livestock systems in the moist and dry savannas of West and Central Africa.*

Board and Management Response:

- IITA accepts this recommendation. In all systems project such as Cereal and Legumes, we focus on improving components of the entire system including non-IITA mandate crops. For example, improved varieties of sorghum and groundnuts are being promoted for widespread adoption by farmers in northern Nigeria (Borno State). In the Strategic Seed Reserve Project hosted by IITA-Kano, improved and adapted sorghum and millet seeds were produced and distributed to many farmers in northern Nigeria.

Recommendation 18

- *It is strongly recommended that IITA and ILRI should give highest priority to fully re-resourcing Output 7 as soon as possible with experienced crop–livestock scientists to minimize disruption and so that it can fully realize the impact potential already established by the foundation activities and progress to date.*

Board and Management Response:

- IITA accepts this recommendation but the recruitment of a livestock specialist is the responsibility of ILRI, which IITA can not influence. However, when needed, IITA will source this expertise from national programs such as the National Animal Production and Research Institute and the faculties of animal science in Universities in West Africa (e.g. Ahmadu Bello University).

Recommendation 19

- *It is therefore recommended that IITA should consider increasing its priority to livestock feed resources and crop-based feeding strategies in the institute research strategy and further strengthens collaboration with ILRI and other relevant partners.*

Board and Management Response:

- IITA accepts this recommendation. IITA is already collaborating with ILRI on improving availability of feed resources (e.g. dual purpose cowpeas). However ILRI does not have the expertise in West Africa required to expand activities on the use of feed resources and crop-based feeding strategies at the moment (see recommendation 18).
- The recent decision by ILRI to position an animal nutritionist in West Africa will improve our activities on crop-livestock interaction.

Recommendation 20

- *It is recommended that the “best-bet” approach in Output 7 should be given high priority as well as support by core and special project opportunities in Project F.*

- *The need for livelihood baseline studies in priority systems; ex-ante impact assessment of various “best-bet” combinations; cost-benefit analyses; markets analyses and policy issues justifies the need for significant socioeconomic input to this Output from ILRI and the scarce resources available in IITA.*

Board and Management Response:

- IITA accepts this recommendation. The best-best approach used in output 7 is multi-institutional activity involving 3 CG centers (ILRI, IITA, and ICRISAT) and national programs from 3 west African countries. Within IITA, these activities receive adequate support from core funding (cowpea breeder) as well as special project funds (DFID/GATSBY/USAID). If needed additional funds will be sourced from investors.

Recommendation 21

- *It is recommended that efforts should be made to strengthen the socioeconomic input to Output 7 including enhanced input from ILRI and links/joint activities with Project C, RUSEP, and relevant networks.*
- *Output 7 has been highly successful in winning special project funds and has successfully integrated and linked funds from GTZ, DFID, DANIDA, and Gatsby to create a coherent research program that covers the research to development continuum. It is suggested that this model should be considered in other IITA Projects.*

Board and Management Response:

- IITA accepts this recommendation. IITA social economists are already working in close collaboration with ILRI.
 - For example, a study on ‘Farmers’ perceptions of benefits and factors affecting the adoption of improved dual- purpose cowpea in the dry savannas of Nigeria (Agricultural Economics 32 (2005) 195–210) was jointly conducted by ILRI and IITA social economists.
- ILRI and IITA have developed joint proposals focusing on trade offs between the use of crop residue as fodder or soil cover for protection the soil (SLP), promotion of fodder crops in the savannas (DFID), crop-livestock integration (GATSBY). The activities have inputs from social scientists.

Recommendation 22

- *It is recommended that Outputs 6 and 7 should be merged into one integrated cereal–legume–livestock output to provide clearer focus, improved priority setting and integration, and eliminate current overlap.*

Board and Management Response:

- IITA accepts this recommendation. Output 6 and 7 were merged into one ‘integrated crop-livestock output in the previous MTP.

Recommendation 23

- *It is strongly recommended that efforts should be made by the PC and Output Leader to fully integrate Output 8 into Project F’s research priorities.*

Board and Management Response:

- IITA accepts this recommendation. Production and post harvesting mechanization is a priority constraint in the savannah and will be fully integrated in the research activities of the Cereal and Legume System MTP project.

Recommendation 24

- *It is also recommended that Output 8 should be more pro-active in promoting knowledge about priority, labor-saving production, and processing technologies to enhance demand at the grass roots level.*

Board and Management Response:

- IITA accepts this recommendation. However, most activities were terminated in 2004 because of lack of expertise in IITA on production and post harvest mechanization.

Recommendation 25

- *As many of the planned activities in Output 8 involve adaptation and promotion of developed technologies (future plans include impact assessment, marketing studies, engaging the private sector, policy interventions, etc.), it is recommended that efforts should be made to strengthen socioeconomic input through enhanced links and joint activities with Project C and RUSEP.*

Board and Management Response:

- IITA accepts this recommendation. Social scientists are members of all the systems projects in IITA, where they provide guidance, backstopping and direction on all social science issues

Recommendation 26

- *It is recommended that Output 8 should be more pro-active in fostering public-private sector partnerships for the manufacture of equipment to facilitate the uptake of technologies and their sustainability (e.g. emphasis needed to identifying and encouraging suppliers of spare parts).*

Board and Management Response:

- IITA accepts this recommendation. This model is used in other IITA projects (cassava production and processing equipment). Lessons learnt from partnering with the private sector to fabricate and market cassava processing equipment will be used in the savannas to promote use of labor saving production and post harvest machines.

Recommendation 27

- *It is also recommended that future efforts in Output 8 should be directed at the development and promotion of food processing equipment for use in peri-urban villages to produce nutritious and tasty snack foods from major savanna crops.*
- *Opportunities should also be sought for facilitating marketing of traditional snack foods from peri-urban villages to urban areas e.g. Kano, which would contribute mainly to women's income.*

Board and Management Response:

- IITA accepts this recommendation. However the focus should not only be on food processing equipment. We need to develop labor saving machines to facilitate timely land cultivation, planting, weeding, shelling and winnowing of grains. Research on improved storage technologies is also a priority to prevent spoilage through aflatoxins, pests and high humidity.

Recommendation 28

- *As a considerable proportion of the activities in Output 9 involve partnerships with NARES to multiply and distribute seed, it is recommended that this Output should be more strongly focused on developing strategies for establishing sustainable seed systems for the major food crops in the West and Central African savannas.*
- *The lack of seed of improved varieties is a serious constraint to achievement of wider impact by Project F. More resources should be sought for this Output to more rapidly achieve the project purpose and contribute to the project goal.*

Board and Management Response:

- IITA accepts this recommendation. All promising technologies generated in outputs 6, 7 and 8 are promoted in Output 9 using various mechanisms (developed in output 1 or project C) and networks. Therefore the focus of output 9 is Technology Dissemination. Most activities undertaken here are down stream and therefore national programs take a lead role in on farm research, seed multiplication and distribution, and capturing feedback from users.

Recommendation 29

- *It is recommended that non-seed technology transfer activities should be housed in Outputs 6, 7 and 8. This would ensure that "technology transfer" is an integral part of the research for development continuum in Project F, in preference to being separated into its own Output*

Board and Management Response:

- Technology transfer is a priority activity which needs its own output. Seed and non-seed technologies may be disseminated using common approaches. Furthermore, certain technologies are developed as a package (e.g. *Striga* resistant germplasm and "trap crop" technologies) and need to be promoted as a package. Separating non-seed technologies from seeds would present problems of disseminating integrated technologies.

Recommendation 30

- *It is recommended that more effort should be made in monitoring informal spread of improved varieties.*

Board and Management Response:

- IITA accepts this recommendation. Three studies were completed that monitor the diffusion and adoption of extra-early maize, soybean and dual purpose cowpea varieties in northern Nigeria. All the studies highlight the importance of farmer-to-farmer informal mechanisms in the spread of improved seeds.

- However, the findings also show limitations of such informal mechanisms for the successful transfer of complex crop management practices that go along with improved seed, in particular for the dual purpose cowpea.

Recommendation 31

- *It is also recommended that ex-ante impact assessment should be an integral part of the promotional process for both seed-based and non-seed-based technologies for the benefit of Project F.*

Board and Management Response:

- IITA accepts this recommendation. An ex-ante impact assessment of alternative commodity research programs for each agro-ecological zone for Nigeria was conducted to assess the potential impacts on poverty reduction. The priority-setting results suggest that cowpea, millet, sorghum, groundnut, and livestock research would have greater impact in the dry savannah. In the moist savanna, research should focus on maize, yam, and rice. Increased cassava and yam research would have greater impact on poverty reduction in the humid forest.
- A baseline Study for ex-ante impact assessment of high quality insect resistant cowpea in West Africa was carried out in Benin, Niger, Nigeria, Burkina Faso and Mali. Preliminary results show that:
 - (1) Information exchange and awareness are important for the adoption and large diffusion of Bt cowpea.
 - (2) There is a relatively high willing to pay for Bt cowpea seeds by farmers.
 - (3) Given the potential of reducing health hazards by lowering the use of toxic synthetic pesticides, both farmers and consumers are willing to pay a premium price for Bt cowpea as an alternative to harmful cotton pesticides. The opportunity costs of using cotton insecticides include the economic losses encountered by the farm household when a family member is sick due to the misuse of chemical insecticides.
 - (4) Urban consumers in regional markets believe that Bt cowpea may be safer than conventional cowpea treated with chemicals.
 - (5) Bt cowpea will raise incomes substantially at farm, household, community and regional levels.

Recommendation 32

- *It is therefore recommended that the following revised project structure and Outputs should be considered by Project F:*
 1. *Researchable issues in response to stakeholders' needs formulated, targeted, and prioritized through identification of key drivers of intensification*
 2. *Management practices for the optimization and stabilization of intensified production systems developed through enhanced understanding of soil and weed processes*
 3. *System and end-user constraints and opportunities addressed through the development of high yielding, dual-purpose maize hybrids and open-pollinated varieties; soybean breeding lines; cowpea breeding lines, and promotion of improved varieties of other important crops in savanna systems*
 4. *Intensified, farmer acceptable cereal-legume and livestock systems developed, validated and promoted through participatory, integrated, income-generating crop, resource management and IPM "best-bet" strategies*

5. *Client-oriented production equipment and post-harvest technologies developed to reduce drudgery, diversify food products, and add value (could also be merged with Output 4)*
6. *Sustainable seed systems for important savanna systems crops developed and enhanced*

Board and Management Response:

- IITA agrees with the suggested outputs expected from number 6. If IITA is to create impact, we need to ensure that technologies generated by project F are disseminated to the end users. Enhancing the productivity of savanna cropping systems will need the use of improved production technologies (seeds, appropriate crop, pest, and soil management practices, etc) and post harvest technologies (storage, drying, shelling, etc), which need to be promoted as individual technologies or integrated packages of technology.
- The focus of output 9 is dissemination the technologies to end users. Technologies promoted in specific locations will depend on the priority constraints and may not always be seed.

Recommendation 33

- *It is therefore recommended that the RDC should consider options to enhance the input of PC's into the project and institute research strategies. This is critically important for the three AEZ projects.*
- *In discussion with the RDC, this was considered to be an oversight in the PC's terms of reference. RDC members were unanimous that PC's should play a lead role in project strategy.*
- *It was also noted that the RDC holds two meetings each year with the PCs. It is suggested that such meetings should concentrate on project and institute research strategies as well as identifying and expanding key linkages among the six research projects.*
- *The Annual Work Planning Meeting appears to be the only opportunity each year for the PC to meet with all project members.*

Board and Management Response:

- IITA accepts this recommendation. PC (now DDs) are invited to attend most RDC meetings where research strategies are discussed. DDs also have a lead role in drafting the MTPs which have to fit in the SC priorities.

Recommendation 34

- *Accepting that it is not easy to bring all project members (more than 40) together often due to time, location, and resource constraints, it is recommended that realistic options should be developed to enhance the interaction between the PC and project members.*
- *One option would be to formalize several meetings each year between the PC and the Output Leaders (OL). OLs would act as a conduit of information and progress by Output members and any constraints to the PC at Output level. It would be easier for 6 Output Coordinators to meet periodically with the PC than for the whole project team. This would strengthen the flow of information in the project and as well as its coordination.*

Board and Management Response:

- IITA accepts this recommendation. Interaction is through field visits, mid term reviews, and annual or strategic work planning week meetings. Leaders for each output (who are senior researchers) play an active role in guiding project members.
- When face-to-face interaction is not possible due to different duty stations for project members, most of the interaction is through email communication.

Recommendation 35

- *It is therefore recommended that the RDC should make a careful analysis of the allocation of IITA's socioeconomics resources to Project F at the next Work Planning Meeting. It is also recommended that the PCs of Projects F and C should fully clarify the existing contribution of socio-economists to Project F including highlighting both joint Projects C and F activities and any other contributions of Project C to F.*

Board and Management Response:

- IITA accepts this recommendation. Social economic support to project F has been strengthened by the recruitment of a production economist who is housed in project F. Other economists (agricultural economist, impact specialist, and sociologist, GIS specialist) allocate over 25% their time to activities jointly carried out by projects F and C. Also see recommendation 6.

Recommendation 36

- *It is recommended that IITA and Project F should be pro-active in managing this sudden loss of ILRI and ICRISAT staff and not rely solely on ILRI and ICRISAT to provide the necessary skills to improve and intensify savannah systems in West and Central Africa.*
- *In the past, CGIAR institutional mandate ownership has unfortunately compromised logical research and development progress to improve agricultural systems in the developing world. Project F should therefore continue to seek the best opportunities to improve and intensify cereal–legume–livestock systems in the moist and dry savannas of West and Central Africa, irrespective of crop and research mandates.*

Board and Management Response:

- IITA accepts this recommendation. The void left by ILRI and ICRISAT will be filled by closer collaboration with national programs with the necessary skills to enhance activities of the savannah project.

Recommendation 37

- *Although Project C has already initiated activities on analyzing methodologies for scaling-up and -out while Project F is already testing different approaches on-farm, it is recommended that an institute-level commitment and profile (in preference to individual project-based priorities) be given to sharing experiences for developing the best approaches to scaling-up and -out technologies.*
- *At this relatively early stage in IITA's involvement in scaling processes, it would be of value to form a small cross-project group of appropriate skills which could compile experiences from African and relevant non-African projects and advise the AEZ projects, especially, on appropriate approaches to test in their projects. It is suggested that this possibility should be discussed at the next Work Planning Week later this year.*

Board and Management Response:

- IITA accepts this recommendation. Project C has the responsibility for developing IITA' strategies for technology dissemination. The demand however comes for the systems projects F, E and D.

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B. A DONOR-COMMISSIONED REVIEW OF PROJECT A:

IITA Board and Management response to the Review of Preserving and Enhancing Germplasm and Agro-biodiversity with Conventional and Biotechnology Tools:

The IITA Board of Trustees and Management greatly appreciate the work of Dr. Pierre Fabre Head of Program, CIRAD, Animal Crops Department, Food Crops Program and Dr. Yves Savidan, Cooperation Internationale et Partenariat in reviewing IITA Project A (Preserving and Enhancing Germplasm and Agro-biodiversity with Conventional and Biotechnology Tools). Their extensive review of research documentation and related information, their interaction with staff, national and international and with the Board members was very welcomed.

While this study conducted by the EC was not a Center Commissioned Review, given its independence and scope, it serves a very similar function. The IITA Board and Management took advantage of this to add additional information concerning the reviews of programs at the center.

The IITA Management, fully endorsed by the Board of Trustees response to the review of Project A

Recommendation 1:

- *The present approach based on an ad-hoc use of biotechnologies to reach identified goals (and not as a compulsory step of any research) should be kept in the future. It allows putting the objectives first and is likely to avoid some expensive activities of little use for R4D*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this observation.
- The biotechnology strategy currently being developed will incorporate this recommendation.

Recommendation 2:

- *As a part of its strategy on Biotechnology, IITA should carefully assess where and how to better focus its investments.*
- *Three options exist, but IITA should not get involved in more than one or two to ensure efficiency, visibility, and impact.*
 1. *Option one is BECA.*
 2. *Option two is CBL becoming the West African subregional platform (if acceptable by partners in the region).*
 3. *Option three consists in supporting another West African subregional platform outside of Nigeria (in that case, CBL being only a 'node').*
- *The panel strongly recommends that IITA urgently discusses the issue with WECARD/CORAF and partners in the region*

Board Response:

- The IITA Management, fully endorsed by the Board will address this recommendation in its newly developed biotechnology strategy. This will guide our future investments.

Recommendation 3:

- *Attention and time should be devoted to develop a scientific strategy and move Project A out of being a mere collection of separated plant activities with little interlinks towards an enhanced team of scientists.*
- *It is time to discuss the lessons learnt from this gathering. Biotechnologies, participatory breeding, and IPM are probably the three areas that could help build a shared strategy*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with the recommendation.
- All of these areas have been addressed in the new MTP projects which have been designed to enhance the integration of scientists' activities around clearer stated goals, objectives, and outputs within cropping systems.

Recommendation 4:

- *While IITA should be commended for building a research agenda on the basis of transversal, multidisciplinary projects, the evolution from a patchwork of piled activities inherited from the past to a set of subprojects responding to an agreed upon, common project strategy, requires a strong leadership. IITA should seriously reconsider the terms of reference of the project coordinators*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- The same observation was made for the Governance CCER. In response, we have realigned the project management with the new Terms of Reference for the Deputy Directors and shifted from elected to appointed DD.

Recommendation 5:

- *It has to be carefully assessed whether the role of coordinator, for challenge program activities that are centered on biotechnology tools to enhance the use of diversity in breeding, might be more efficiently taken upon by a biotechnology specialist rather than by a bank curator already having to handle a complex, global and regional mandate on a large number of crops*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- The GCP is now managed by a biotechnologist who has expertise in genebank management and genomics.

Recommendation 6:

- *In order to have a real view of the project efficiency and to promote accountability, a list of expected results should be elaborated ex-ante and a similar list of achievements produced ex-post, both based on the logframe structure (with quantitative OVI and qualitative description of the scientific problem to be solved).*
- *These two lists must be presented in such a way that they can be directly and easily compared (e.g. in a table)*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with the approach recommended.

- The new MTP projects with their output and output targets will address the observed need for greater accountability in our projects.

Recommendation 7:

- *CCERs of large projects such as project A should better be conducted by a team rather than by one single well-known specialist, whatever his personal abilities*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- The use of a team is adopted. The IITA Management and Board also appreciated the team of reviewers sent for this EU review.

Recommendation 8:

- *A precise assessment of IITA's needs for investment in in vitro culture, sanitation, conservation, and multiplication for further germplasm exchanges and capacity building is required*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation. We have initiated this assessment with the recruitment of a new position for a tissue culture specialist.

Recommendation 9:

- *IITA should assess with partners future demands (traits, crops, geographical areas) and investments in breeding, as part of project A strategy development*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- The development of the new MTP projects will contribute to this strategy development.
- We are planning a series of strategy development workshops for each of the new MTP projects to allow us to address the concerns given here.

Recommendation 10:

- *The panel recommends a stronger focus on MAS for several crops, by joining breeders with biotechnologists, instead of leaving biotechnologists to endow more in the development of genomics resources, and by looking for, and/or investing, more resources in this field*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- We are addressing this recommendation in the new biotechnology strategy which takes into account the need for better links between the biotechnologist and the users of biotechnologies.

Recommendation 11:

- *IITA should continue working to prevent the extension of CMD through monitoring and germplasm resistance*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation. It is an area of critical importance to serving Africa.
- We are expanding our core breeding program with a new regional cassava breeder for East and Southern Africa to better address the needs for resistance in this target area and linking up with ongoing projects to improve our monitoring experiences.
- We are also capturing our tracking, reporting and response approach to CMD, so that we can share it with the African Union's Commission on Rural Economy and Agriculture.

Recommendation 12:

- *Project A should further discuss its strategy on nutritional activities with partners, both from the local public and private sectors, and further develop links with the HarvestPlus challenge program*

Board Response:

- The IITA Management, fully endorsed by the Board agrees with this recommendation.
- A new MTP project has been developed on Agriculture and Health. It will include the research previously found in Project A and links it to other initiatives being undertaken by other disciplines at IITA. This should allow us to expand our activities in this area, expand our partnerships, and develop expanded links with HP.
- We have created a new position for crop utilization to address these areas.

Recommendation 13:

- *Project A should develop a training and capacity building strategy to avoid being overwhelmed by NARIs and/or SRO and RO's requests, at the cost of its own research quality and outputs. This could involve a multi-stakeholder consultation to design a regional training program*

Board Response:

- The IITA Management, fully endorsed by the Board has a capacity building strategy, but agrees with the reviewer's assessment on the need for improved systems to avoid being overwhelmed.
- We are exploring all options with our national and regional partners.
- We have just completed two agreements on better processes and monitoring with the universities from which we get the highest demand.

C. ADDITIONAL PANEL OBSERVATIONS ON THE CCERS

1. CCER: Governance and Management

This CCER is referred to and assessed in the general review of governance and management (see Chapter 5)

2. CCER: Project B: Developing Biologically Based Plant Health Management Options and Conserving Biodiversity of Sustainable Agriculture

The majority of the 12 recommendations in this report are concerned with research management or administrative issues. For instance, **Recommendation 1** recommends "... to list activities as they relate to the outputs" and notes that "...Inputs are missing in the logframe". Similarly, in **Recommendation 2** – "It is recommended to list the milestones under the activities, and where appropriate combine those that relate to one pest".

For these recommendations, and others such as **Recommendation 3** (*It is recommended that IITA link with institutions that are (or should be) concerned with the spread of pests (FAO, IAPSC, ...) and jointly explore ways to identify funding to mitigate the invasion of pests at early stages*) – there was no disagreement from the Board or management and little further to be commented on.

Other recommendations concerned with cost recovery of services; establishing a minimum number of core positions; reviewing placement of staff; granting sabbaticals; and changing the name of Project B and the title of outputs – also do not require further comment.

In the case of **Recommendation 8** (*It is recommended to establish a system to avoid inadvertent introduction of pests to and from IITA locations other than Ibadan, in cooperation with the respective national plant quarantine service*) it certainly appears to have been complied with (if it was not already compliant at the time of the CCER).

However, there are two recommendations which are worthy of further review.

Recommendation 6 - *It is recommended to review training needs in NARS and offer the appropriate training (group, individual, in-house, in-country).* While the Board and Management stated that IITA is committed to capacity building of NARS and other partners and accept this recommendation, it is questionable whether sufficient focus has been given to training activities at IITA. While IITA incorporates "...training needs in project proposals when ever possible" and attempts "to meet any training needs that are demanded by the NARS or other partners.", the strategy appears to be ad hoc and lacking an IITA corporate strategy on training. It is recommended that this issue be explored further in the 6th EPMR, particularly as it was an issue raised by the 5th EPMR.

Recommendation 11 - *It is recommended to widen the range of crops to include those important in the farming systems (e.g. cotton).* The Board and Management accepted this recommendation and "...will continue (and expand, funds permitting) our work on pests and diseases of non-mandated crops (e.g. pineapple mealybug) or non-crop pests (e.g. water weeds)." However, since the demand for plant health expertise exceeds IITA's capacity and the opportunistic expansion of activities into other crops could have a negative impact on plant health activities in mandated crops, further consideration should be given to this recommendation.

3. CCER: Project D: Research for Development Enabling Environment

4. CCER: Project E: Enhancing Livelihoods in the Humid and sub-Humid Zones of West and Central Africa through Profitable and Sustainable Intensification of Diverse Agricultural Systems

This was a brief (5-day) review done in May 2004 of Project E ("Enhancing Livelihoods in the Humid and Semi-Humid Zones of West and Central Africa through Profitable and Sustainable Intensification of Diverse Agricultural Systems"). The major outputs of this project were listed as farming systems focused on plantain productivity, intensification of cassava production, sustainable yam production, and multi-product trees. The reviewer emphasizes that the focus was scientific governance rather than scientific quality. Although this project has now been rearranged into other projects (principally Root

and Tuber Systems, Banana and Plantain Systems, and High Value Products) the review may still offer relevant observations on research management.

Project E was an exceptionally complex endeavor, addressing a mosaic of land use patterns with no clearly identified strategies for specific eco-regions. One lesson from the review is the need to provide clear outputs and intervention areas for projects and to adopt explicit strategies. Although IITA was adopting a benchmark approach at the time, the reviewers found scant mention of the concept in the documents they reviewed, and consequently no clear methodology for prioritizing constraints or for scaling out project outputs on an eco-regional basis. A long list of objectives and achievements for the project was not consistent or easy to understand. The reviewer sees projects developing at the time of the review (such as STCP or Nigerian cassava initiative) as opportunities to provide a more cohesive focus to this kind of research. He also urges more attention to a commodity chain approach.

Among the other observations of the review that have relevance to current IITA activities:

- The project's lack of a core identity.
- An absence of identifiable across-system agronomy, microbiology, plant pathology and eco-physiology components.
- The fact that, despite a holistic rationale, the project remained commodity focused (not necessarily a bad thing) and evidenced little systems-based or interdisciplinary activity.
- IITA's apparent inability to determine milestones and priorities for restricted grant projects, so that the institute ends up pursuing a multitude of diverse obligations within what is supposed to be a unified project.
- The need for better diagnosis of constraints and potentials in order to determine research interventions; and for better measures of impact, especially on crop losses, and level of adoption.
- The danger of drifting too far into development activities and competing with local institutions, while sacrificing some scientific excellence (this is a constant tension, and we favor the Research for Development approach that IITA had adopted where research is justified by its application to development-related issues).
- The high proportion (~80%) of project vs. core funding

5. CCER: Project C: Assessing Impact, Formulating Policy Options and Systems Analysis

The CCER on IITA's Project C ("Assessing Impact, Formulating Policy Options and System Analysis") was done by Prof. Eric Tollens in December 2003. At the time, the majority of IITA's socioeconomics activities were carried out under this project, although there were links to other IITA projects.

The report points out that the majority of resources for Project C were from restricted funds, which is a welcome indication of demand for this kind of work, but raises the possibility of a donor-driven agenda.

At the time of the report much of IITA's research was organized by agro-ecologies and benchmark areas and there were considerable requirements for socioeconomic input in each of these areas for activities related to technology generation (constraints analysis, production economics, monitoring adoption, etc). Such work needs to be done in interaction with biophysical scientists, but there were concerns that this type of interaction was declining.

On the other hand, the review points out that there is also need for socioeconomic analysis on constraints that operate at a higher level than the benchmark. Two such areas are markets and policies.

For markets, it was generally accepted that IITA should adopt a commodity chain approach, but the report pointed to considerable uncertainty about IITA's specific role in market analysis. Several large market-development projects were seen as having relatively few links to IITA technology generation. (FOODNET produced a series of sub-sector studies and RUSEP was an attempt to strengthen markets in Nigeria.) The report recommended that any IITA involvement in pilot marketing projects should have the clear aim of providing feedback to biophysical scientists. The report also discussed the IPG nature of analyses of commercialization processes, but gives no guidance on what aspects of these processes might be legitimate targets for IITA socioeconomic studies, nor who the potential audience might be.

For policy analysis, the report acknowledges that IITA does not have the resources to make wide-ranging contributions and recommends collaboration with organizations such as IFDC (with whom IITA has collaborated on an analysis of fertilizer policy in Nigeria) and IFPRI.

The report also gives attention to the areas of impact assessment and priority setting. There is increasing pressure from donors for impact studies, and the report makes a number of suggestions on specific topics and urges that IITA should produce two impact studies per year. There is also a need for more ex-ante assessment and the reviewer describes three possible approaches, recommends their integration, and suggests that such exercises be confined to Nigeria. There is also a recommendation that IITA's GIS work should include more socio-economic analysis.

Finally, the review points to the profusion of outputs listed under the project (partly as a result of a donor-driven agenda), expresses concern that there are not the resources to meet these goals in a professional manner, and recommends a simplification of logframes and activities.

IITA's response to the review was largely positive, and there is evidence that efforts have been made to address the recommendations. Nevertheless, there are a number of challenges remaining. IITA's reconsideration of its benchmark approach means that technology generation strategies are now more diverse, and socioeconomic input is correspondingly varied. IITA continues to emphasize market development for its commodities, but questions regarding IITA's comparative advantage in this area, and the type of socioeconomic analysis that it should perform, remain unanswered. Similar questions exist for the scope and focus of any policy analysis that IITA might engage in. In the last several years IITA has devoted increasing attention to impact analysis; several new studies have been produced and a strategy paper describing a framework for impact assessment has just been published. A recent project in Nigeria is the source of several papers on priority setting (at the national level).

6. **CCER: Project F: Improving and Intensifying Cereal-Legume Systems in the Moist and Dry Savannas**

The objectives of the review were to examine the progress made by Project F with focus on strategic contributions of Project F to institutional goals measured against projected milestones; identify constraints of the project that may hamper progress; and to offer suggestions for modifications that would lead to Project F attaining its objectives and outputs.

The review involved two days of field trips to assess on-station and on-farm trials at two stations, namely Kano and Zaria representing the dry savanna and moist savanna farming systems and

ecologies, respectively, followed by a one-day formal review with presentation by team members, a one-half day discussion with the RDC on a draft report prepared by the reviewer.

This CCER was an accelerated exercise as the review was conducted over a short period of time. However, the report was very comprehensive with an exhaustive review encompassing wide ranging issues and components of Project F and making an extensive list of far-reaching recommendations. Assessments were made of the evolution of the project, strategy and priority setting and planning, the processes for identification of outputs, monitoring of progress, project management and coordination, linkages with other CG centers, as well as the state of critical mass and balance of necessary skills in the overall management and execution of Project F.

There were a total of 37 recommendations spelled out in this CCER giving it an impressionable first appearance of perhaps too many itemizations to draw serious attention from project scientists and administrators. However many of the recommendations were highly accurate on issues that, if implemented, would sharpen the focus and effectiveness of research at IITA on “improving and intensifying cereal-legume-livestock systems”.

Several of the recommendations were process oriented dealing with issues relevant to planning and reporting requirements. However, a number of the recommendations also dealt with ways in which the program could be made effective and sustainable. Some of the enumerated recommendations remain central to the various issues the 6th EPMR team is grappling with including a list of items openly discussed during the presentations at Ibadan by team leaders and in discussions with scientists and administrators during the review team’s visit of the Center in March, 2007. The following issues addressed in the CCER are particularly worthy of note:

- Emphasis on keeping core competency over time on research that focuses on “systems, including crop-livestock” to take advantage of (in new environments and experiences) and build on the experience, history and legacy of past research at IITA;
- The value of keeping a critical mass of interdisciplinary scientists (including socio-economists) at each of the prime locations and not spread thinly;
- Need to establish a system for guiding and mentoring young and new project scientists to bring them to speed where the need has been established;
- Enhance cross-links and integration on generic breeding objectives and provide greater systems focus to accentuate the comparative advantage of IITA over other CG centers (e.g. CIMMYT);
- Strengthen collaboration with other CG centers (CIMMYT, ILRI) based on comparative advantage and potential synergy that would accrue;
- Document progress made in improvement of maize, cowpea, and soybean over the past 20 or more years taking into account that targets and priorities have changed over this period;
- Emphasize efforts in development of technologies to capitalize on commercialization of cereal and legumes, following the examples in other crops;
- Promote where relevant, improved, farmer acceptable technologies from non-IITA mandate crops such as sorghum, millet, groundnut, pigeon pea, cotton where they can make a contribution to improving and intensifying cereal-legume-livestock systems;

- Develop strategy for establishing sustainable seed systems for the major food crops in the West and Central Africa; (relevant to discussions on need to developing expertise for encouraging commercial multiplication and distribution of clonal materials).

General Commentary: As in other regions, the lack of functional seed systems in the west central Africa has limited the spread of improved crop cultivars from IITA's cereal and legume improvement programs. Private seed industry is at infancy and the public sector has not been effective. As a result, IITA scientist had struggled with finding effective ways to scale-up and scale-out their improved cultivars or find an efficient scaling of best-bet combinations of their systems research outputs. More recently, IITA had opted to engage with commercial interests directly in deploying technologies and encouraging private processing industry. Other centers, (namely CIMMYT and ICRISAT) have full time internationally recruited scientists (IRS) to catalyze seed industry developments. Should IITA consider establishing an in-house knowledge base on commercial scale propagation and marketing of planting materials for clonally propagated crops with IITA mandate?

"During the history of improving and intensifying cereal-legume systems in the moist and dry savannas of West and Central Africa, IITA has benefited from working closely with scientists from ILRI and ICRISAT who have linked their complementary skills in livestock and dry savanna crops to those of IITA's for a more holistic approach." With erratic funding support at all centers, how can such inter-Center linkage be sustained?

7. **CCER of SW-IPM:** This CCER was conducted later than planned by IITA and took place between the first and main phases of the EPMP. The Outcomes are given separately in Annex 8.
8. **Donor-commissioned Review of Project A:** Preserving and Enhancing Germplasm and Agro-Biodiversity with Conventional and Biotechnology Tools.

This review was conducted at the request of EU, who has funded Project A since its inception in 2002. The review was conducted between November 2004 and January 2005 by a senior geneticist and an economist. Twelve days of field visits were distributed between IITA, Ibadan and Abuja; BECA, Kenya; and NARO, INIBAP and IITA offices in Uganda. The review was conducted with professionalism and thoroughness, though the reviewers decried the notion that review teams comprised of 1-2 experts had the resident skills to properly assess a project as complex as this.

Project A was formed from several of the 14 projects in existence in 2001. The main outputs of Project A were: 1) Enhanced collection, characterization and safe dissemination of selected crops and their wild relatives; 2) Elucidation of the genetics of key traits, and development of efficient breeding methods; 3) Development of biotechnology tools, and their application to crop improvement and germplasm management; 4) Development of source breeding populations and parental lines with desired agronomic and quality traits. In 2006 the activities of Project A were divided to form the crop conservation and improvement elements of the current projects, namely Agrobiodiversity; Roots and Tuber Systems; and Cereal and Legume Systems. Many Project A goals are shared by these projects, so some of the reviewer comments continue to have relevance.

Project A had a clear common theme of germplasm conservation and the development of improved varieties. Reviewers nonetheless found that it lacked a strategic thread, and rather resembled a collection of loosely linked activities. They concluded that the project needed a clear science plan, and strong consistent leadership for several years. Outputs (ex post) should be compared directly with goals (ex ante) when writing annual reports, so there was transparency in the degree to which goals

were met. They rejected the notion that biotechnology should be seen as an independent program; rather it was another set of tools to be applied when it showed comparative advantage. Because of the cost of equipment and the need to access supplies that easily spoiled, reviewers suggested that IITA focus its biotechnology resources in Kenya (at BECA) and either in IITA headquarters or some other location in West Africa. Concern was expressed over an apparent division between molecular breeding methods and conventional breeders. Reviewers noted that there was no current marker-assisted selection underway, or any apparent plans for any in the future. They recommended that breeders and biotechnologists co-lead any major biotechnology initiative in the future. This would free up additional scientist resources to focus on genomics. On the other hand, they felt that Generation Challenge Program initiatives at IITA should be led by a trained biotechnologist. Given the increasing demands for *in vitro* conservation and multiplication of clonally propagated crops, it was recommended that IITA's investment in *in vitro* culture be carefully assessed to ensure adequacy in staffing and facilities. The report commended IITA's prompt response to the severe CMD outbreak in cassava, and its increasing concern for improved nutritional quality of its mandated crops. Plant breeding was considered to be in good heart, though reviewers strongly suggested an increase in participatory breeding with end-users. Capacity building, once considered strong, and with obvious impact, was identified currently as a weak link in the project. Reviewers felt that the quality of science in Project A was quite adequate, provided its relevance was assured by being focused on an appropriate development issue. Links with social scientists were considered somewhat weak. Finally, the report emphasized the need to involve national program partners in project design, in determining the priority traits needed by germplasm, and in tactics involved in improving crop nutritional value. The reviewers concluded by recommending a continuation of EU financial support for these activities, and felt it would achieve significant impact in the future.

Many of the issues raised in this review have been addressed by IITA, though the central issue of the role of biotechnology in crop improvement is still not satisfactorily resolved. Capacity building, once a flagship activity at IITA, remains weak, and utilization of conserved germplasm by stakeholder breeding programs requires careful monitoring. Prebreeding, defined here by reviewers as supplying proven disease-free Germplasm Bank accessions, was considered a real strength, and it remains so today.