Institutionalizing IMPACT Orientation

Building a performance management approach that enhances the impact orientation of research organizations

Crops Research Institute

Case study summary

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The Natural Resources Institute (NRI) of the University of Greenwich is an internationally recognized centre of expertise in research and consultancy in the environment and natural resources sector. The Institute carries out research and development and training to promote efficient management and use of renewable natural resources in support of sustainable livelihoods.

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Introduction

This summary report presents the findings of a collaboration between the Crops Research Institute (CRI), CSIR (Ghana) and NRI's Performance and Impact Programme (UK) in building a performance management approach to enhance organizational impact orientation.

As one of three collaborating institutes, the findings documented from CRI's experience represent part of a larger initiative aimed at addressing the concern within public sector agencies of how to demonstrate their achievements in an environment of broad-based public policy reform. This pressure is particularly hard-felt by agricultural research organizations, where funders' perceptions of a lack of evidence for the uptake and impact of products and services are raising questions about their efficacy and existence.

In recognizing that the developmental impact of research is notoriously difficult to assess, the project is predicated on the belief that indicators of organizational uptake can provide reliable proxies, or 'leading' indicators of development impact. This implies that overcoming the lack of connection between research outputs and development impacts should not be pursued through impact assessment studies alone, but through appropriate systems that account for organizational uptake and research outcomes which provide the clearest evidence of likely developmental impact. Thus, building performance management capacity is about developing clear, meaningful and accountable measures of performance over which the actors have direct control, or a manageable interest.

This report summarizes the first phase of this project conducted inside CRI: a diagnostic assessment of organizational context and capacity, followed by the initial steps of developing a performance management approach. The report is a supplementary to the main volume, which presents the process, lessons and outcomes across all three collaborating institutes.

Background to CRI

In 1963, the Agricultural Research Institute was formed which housed two units – the Crops Research Unit (CRU) and Soil Research Unit. In 1964, the CRU became a fully fledged institute, and was renamed the Crops Research Institute (CRI). In 1968, the Academy of Sciences was re-organized into the Ghana Academy of Arts and Sciences and the Council for Scientific and Industrial Research (CSIR), and the CRI became one of 13 institutes under the CSIR.

CRI has a broad research mandate covering all food and some industrial crops[1], with the mission to ensure high and sustainable crop productivity and food security through the development and dissemination of environmentally sound technologies. This includes developing high yielding, pest and disease resistant crops, improved crop management and post-harvest practices. Research programmes and projects, funded by the Government of Ghana and external agencies (including CIDA, DFID, IFAD, IITA, ICRISAT, JICA, USAID) fall both within specific divisions (including maize improvement, rice technology development, legume breeding) and cut across divisions (socio-economic studies, post-harvest studies).

The Institute is divided into nine divisions, five of which address specific crop areas or production system issues; horticulture, roots and tubers, grains, crop protection, resource and crop management. The remaining four divisions include technical services (biochemistry, biometry, etc.), information services (training, communication and publications, library), administration and business development.

CRI has over 800 staff (including unskilled labour) of which 169 are research or technical grade (80 research-grade staff, 49 technical officers and 40 technical assistants) and 320 non-research junior staff in various supporting services. The institute is governed by a management board that meets biennially, with day-to-day activities headed by a director, assisted by a deputy director and heads of the

institute's divisions. Monthly meetings are held between the director and heads of divisions.

In CRI, budgets are strictly tied to donor funds for projects; funds are exclusively used for the activities of that project. Individual projects stand on their own with an account opened under the name of the institute for the project. The institute's management (i.e. the Directorate) assist in the management of funds as scientists have to justify the activities to be carried out before any releases are made. In most cases, accountable imprests are taken for execution of activities. The CSIR, however, charges an overhead cost of 15%. Individual scientists are encouraged to source funding either through their contacts or by their experience and track records. Most cases in CRI have been made through contacts, especially from postgraduate studies contacts.

NOTES

[1]Except for cocoa, coffee, cola, sheanut, coconut, oil palm, sorghum and millet which are the mandated crops of other research institutes.

Organizational diagnosis

This section presents the context and capacity of CRI identified through organizational diagnostic exercises.

ORGANIZATIONAL CONTEXT

CRI operates research programmes and projects funded by the Government of Ghana and external agencies. The CSIR is funded from the Ministry of Finance, through the Ministry of the Environment, with funds appropriated to each institute on the basis of the number of staff on the payroll[1]. A commercialization programme was established within the CSIR in 1995. It was mandated that by December 2001, the CSIR should generate 30% of its Annual Budgetary Requirement (ABR) and that government support for the CSIR would be slashed by 30%. Current private funding revenue stands at 5.45% of total budgets across the CSIR institutes, due in-part to the barrier imposed on institutes which prevents them from bidding for research contracts from donor agencies that are channelled through the Government (seen as a conflict of interests).

The Ministry of Food and Agriculture (MOFA) is the primary ministry responsible for food and agricultural development in Ghana. Whilst MOFA and the CSIR are institutionally separate, the research outputs generated by the CSIR institutes are largely disseminated through MOFA. Research Extension Liaison Committees (RECLs), located in each agro-ecological zone in Ghana, provided a bridge for linking CSIR institutes and MOFA extension, and also links to farmers and policy-makers. The RECLs ceased to exist in 1997/98 when the National Agricultural Research Project (NARP), also funded by the Government of Ghana and the World Bank, officially ended. Since then, the systematic (formalized) linkage between research and extension has not functioned so effectively. A sector-wide approach to agriculture (AgSIP) is currently being developed under the auspices of MOFA. One aspect of AgSIP is to review research, particularly the role and function that RECLs played, and whether or not they can be

revived. Funding through AgSIP is expected for research, but what form this will take and how accessible it will be to the CSIR institutes has not yet been determined.

Two reviews under the National Institutional Renewal Programme (NIRP) have been conducted within the CSIR over the past year. An externally managed institutional review funded by the Government of Ghana and the World Bank was conducted which suggested that there was a need for considerable restructuring of the research system. This was largely rejected by staff under the CSIR. This has been followed by an internal research review (currently underway), managed from the corporate office of the CSIR, engaging directors from each institute. The aim is to review the corporate mission of the CSIR, identify priority issues, and link these to the CSIR mission. It is expected that by the end of 2002, a strategy will have been developed for rearranging technical services under the CSIR.

ORGANIZATIONAL CAPACITY

The diagnosis of organizational capacity was conducted through self-identification of institutional strengths and weaknesses, opportunities and threats followed by a review of the mandate, planning and performance structures and processes. Through this review process, the internal drivers and inhibitors are linked to perceived external opportunities and threats.

Internal strengths and weaknesses

The internal strengths and weaknesses exercise revealed the current state of the mandate, structure and processes within CRI (Figure 1).

As Figure 1 illustrates, the primary function of CRI is research, conducted by high quality staff over the past 35 years. Strong links were identified with the clients of research, through training extension officers and on-farm research as a function of technology transfer. However there is a question over the extent to which CRI can clearly delineate its responsibilities and functions from those of extension agents. There is some ambiguity as CRI pushes into areas traditionally considered ‘extension’, raising issues of capacity and the correct attribution of performance.

Current Strengths

- **Human resource** – multi-disciplinary, good teamwork, highly skilled, sufficient quantity
- **Research** – technology development, long history of research
- **Dissemination** – technology transfer, training, good client relationships and linkages, attracts funding, strong reporting as verified by external assessments

Current Weaknesses

- **Infrastructure** – poor IT, ill-equipped library, energy, water
- **Funding** – delay in disbursement of approved budgets from central government, low return from commercialization drive
- **Human resource** – allocation of staff, some motivational problems
- **Systems** – poor feedback and learning mechanisms, lack of attribution or recognition of achievements

Figure 1 CRI internal strengths and weaknesses

The strength of CRI's organizational performance is judged on the basis of external assessments and repeat funding. However, internal systems were identified as a weakness, with poor feedback and learning mechanisms, and a lack of recognition of achievements. When viewed against the self-stated strength in reporting, this implies that strengths and weaknesses exist at different levels within the organization, and on different issues. Within projects, reporting through the research process and to donors on achievements was identified as strong. However, the link and feedback from CRI management to the scientists were identified as weak. Scientists report regularly to management, but little feedback is given on quality, and thus performance.

External opportunities and threats

In terms of opportunities (Figure 2), CRI sees its future in-part as a shift towards non-traditional markets. Developing links with industry and increasing the portfolio of work on new product markets implies an expansion by virtue of the commercialization drive running through the CSIR institutions. Whilst CRI's traditional market, 'public good' research, remains the primary focus of the institute, the clients' (predominantly rural farmers) inability to pay for products and

services is placing increasing pressure on the need to generate funds elsewhere.

There is also a question as to how CRI's business development strategy manages the dichotomy between its two main sources of funding: (i) the Government (disbursement problems coupled with declining support), and (ii) external sources (the degree of fit of the funders priorities with those of CRI's mission). This is compounded by signs that the Government wants to retain centralized control of donor funding, thus reducing the distinction between 'government' and 'external' sources of finance. As the primary sources of funding in CRI's traditional market areas, this is placing further pressure to reorient the institute's research in a more commercial direction.

Figure 2 External opportunities and threats for CRI

Client and stakeholder links

A mapping exercise was conducted to look at the type and strength of linkages CRI has with clients and its other stakeholders. This was conducted in response to the recognition that the majority of issues arising from the institutional assessment related to external agents.

Within this context, clients are defined as those for whom CRI provides a direct service, other stakeholders are those with whom CRI has some form of linkage.

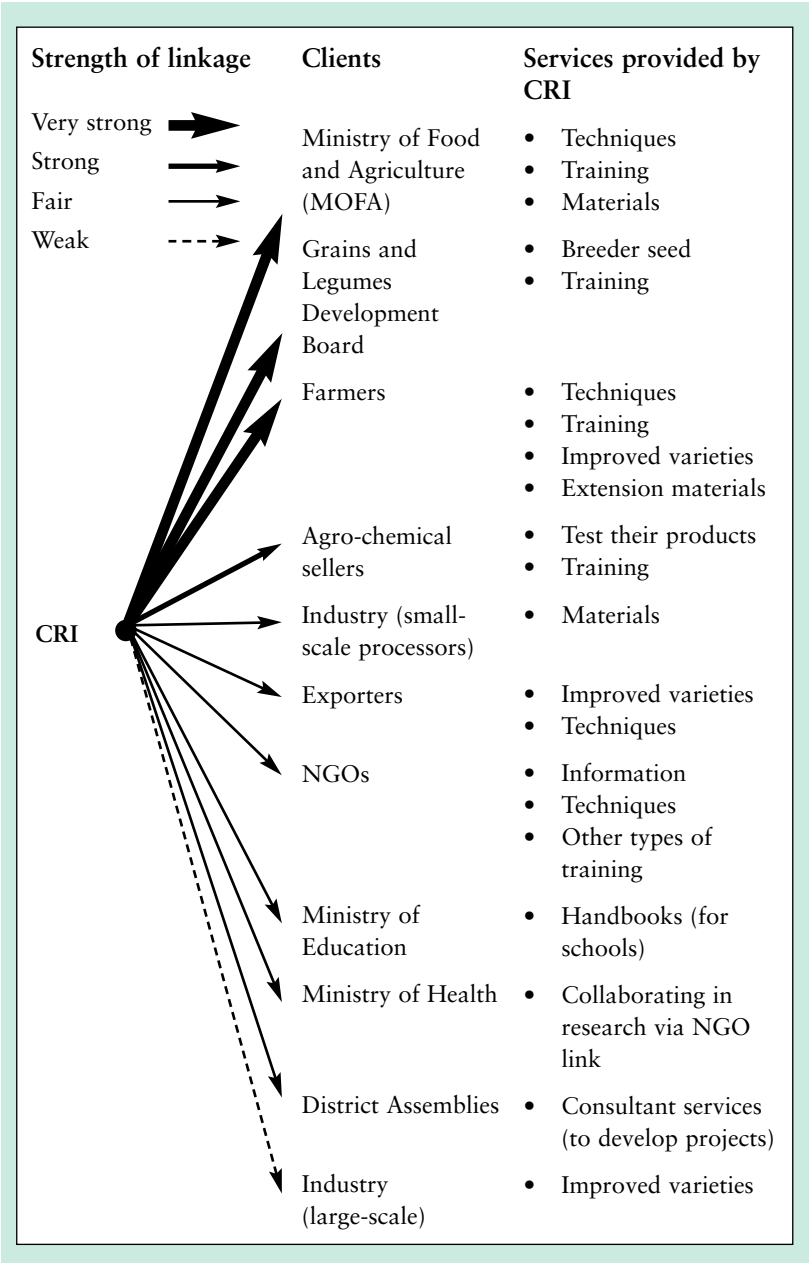


Figure 3 CRI linkages with clients and other stakeholders

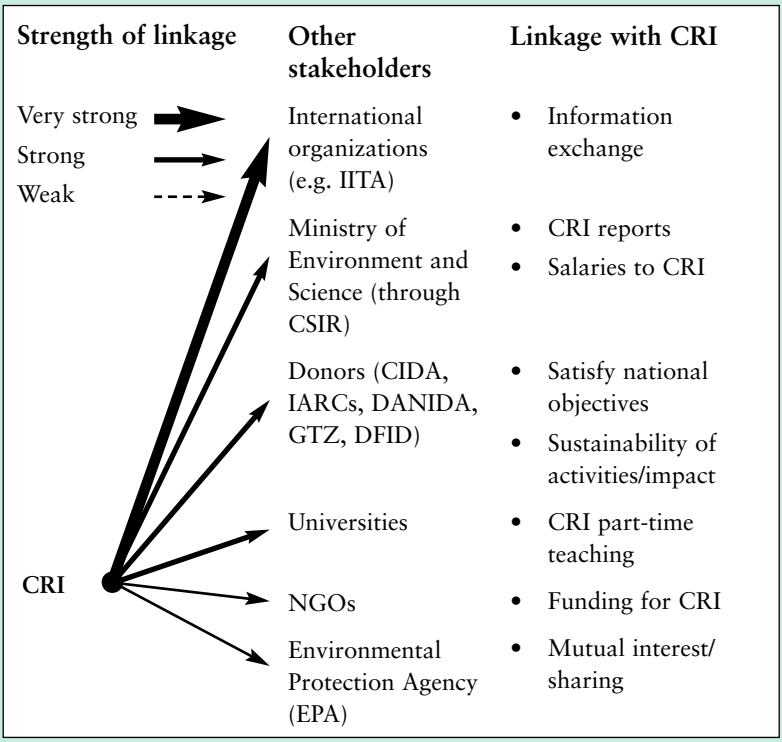


Figure 3 ***cont.***

As Figure 3 illustrates, CRI has numerous clients, ranging from the Ministry of Food and Agriculture (MOFA) to which it delivers a wide range of services, to large-scale industry whose demands upon CRI are more limited. Linkages between CRI and several of these clients were considered to be strong, notably MOFA and farmers – the traditional client base of CRI. However, whilst these linkages were identified as strong, a number of clients and stakeholders were also perceived to be threats. These include some donors (through demands on the type of research conducted which may be outside CRI's mandate) and MOFA (through the manner in which it claims exclusive ownership of the success/impact of CRI's work and represents the national point of entry for funding through AgSIP).

The client group with which CRI has one of the strongest linkage is farmers. Whilst this is unsurprising, this group is not paying for the products and services being delivered. Further, as researchers only

have contact with a limited number of these clients (through on-farm research), the impact of CRI's work cannot be best assessed through farmer surveys, with the exception of those with whom they have direct contact. This distinction between funders, intermediate organizations, and end-users in the case of publicly funded research, has implications for the way in which CRI's performance is assessed.

No reference was made to other sister research institutes in the stakeholder mapping exercise; and the nature of the relationship with the Ministry of the Environment and Science and the CSIR appears limited to provision of salaries and reporting requirements. In the former case, this is surprising as historically strong links existed with a number of other institutes under the CSIR, such as the Soil Research Institute. This may have implications for inter-disciplinary research, identified as strong internally within CRI, but clearly limited beyond organizational boundaries.

Monitoring and Evaluation

CRI's capacity in monitoring and evaluation (M&E) was diagnosed using exercises to reveal the staff's knowledge and perception of M&E within the organization.

Brainstorming on M&E: A brainstorm session on what constitutes good M&E (intentionally left undefined) highlighted various issues which have been grouped into what good M&E might do, what good M&E might involve, and how good M&E might be done (Figure 4).

Good M&E was perceived as having a role in validating achievement and allocating responsibility in order to fulfil that achievement. Clear linkages to objectives, and strong feedback mechanisms were felt to be essential components of M&E. This may be achieved by developing SMART indicators, and using the logical framework to construct a logical sequence of indictors that are linked to the objectives.

Diagnosing M&E: A self-assessment diagnosis was carried out by each staff member based on rating a series of 'positively orientated' statements from 'strongly disagree' to 'strongly agree' in the context of CRI (Table 1).

Table 1. Monitoring and evaluation capacity self-assessment

ASSESSMENT CRITERIA

M&E system

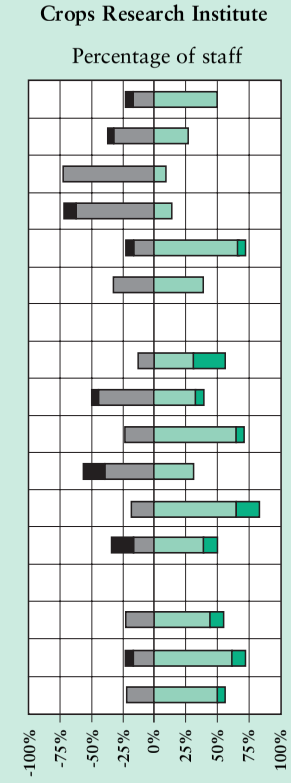
9. Senior management built our M&E system with a plan – it did not evolve by chance
10. Our M&E system contains a 'well-balanced' set of measures that reflects the different levels of objectives in our strategic plan
2. Our current M&E system measures all the right things
6. Our system always gives us the information we need when we need it
12. We have a way of summarizing all our outputs easily
4. Our M&E system does not produce more paperwork than is necessary

Internal utilization

15. We act on results quickly
8. Everyone in our organization understands the measures used to assess performance
3. Responsibilities for assessing different measures are clearly defined
5. Results from our M&E system inform decisions on budgetary allocations
7. We are only accountable for measures over which we have control
13. We pay as much attention to the non-financial measures as we do the financial measures

External focus

1. We define our measures from the communities' point of view
11. We assess client satisfaction of the outputs we deliver with and for them
14. We track performance for internal operations as well as the delivery of outputs



Note: The results focused only on the positive and negative responses to the statements, omitting the 'neither agree nor disagree'. In discussion, and through reviewing the explanatory comments made on the self-assessment forms, it was recognized that in many cases those who marked as such did so because they did not fully understand the statement.

What good M&E might do…
- Establish appropriate responsibilities
- Means of verifying indicators
- Go beyond what's written down – should see it
- Assumptions under which outputs are achieved

What good M&E might involve…
- Good feedback mechanisms
- Be linked to well-defined objectives

How good M&E might be done…
- Use of the logical framework approach
- Appropriate indicators put down are SMART

Figure 4 M&E brainstorm

The results of the self-assessments were accumulated and grouped into three categories: the M&E system, internal utilization and external focus. Where the majority of responses were positive, these were considered 'strengths', where negative they were considered 'weaknesses'. Where opinion was split, a third category was formed (Figure 5).

Having compiled the results, the following key issues were highlighted and discussed.

Internal utilization – accountability: Some doubt was cast over the positive response regarding the extent to which staff members are accountable only for those actions for which they are responsible. The primary function of 'research' and complementary 'extension' function of technology transfer through training of extension agents and on-farm research implies that CRI is willing to be assessed on the impact of its research on factors such as production increase, poverty reduction and the like (implied by the successful promotion of their research technologies), despite not being responsible for dissemination on a scale necessary to impact on these factors.

Internal utilization – nature of information and feedback mechanisms: Whilst it was acknowledged that outputs are easily summarized and

Strengths	Weaknesses
M&E system • Method(s) for easily summarizing outputs • The system (or activities) were strategically developed, rather than evolving by chance	*M&E system* • The system does not measure the right things • The system does not provide a well-balanced set of measures reflecting different levels of objectives in the strategic plan • The system does not always provide the necessary information when it is needed
Internal focus • Only accountable for the measures which are controlled • Acts on results quickly • Responsibilties for assessing different measures are clearly defined	*Internal focus* • Not everyone in the organization understands the measures used to assess performance • Results from the system don't inform decisions or budgetary allocations
External focus • Defining measures (indicators) from the communities (clients) point of view reflecting participatory design of CRI's initiatives • Assess client satisfaction with the outputs delivered with and for them reflecting good linkages and understanding of client needs • Internal performance as well as the delivery of outputs are tracked	

Split opinion (between relative strengths and weaknesses)

M&E system

- Whether or not more paperwork is produced than is necessary

Internal focus

- Whether or not as much attention is paid to non-financial measures as financial ones

Figure 5 CRI current strengths and weaknesses in monitoring and evaluation

enable responsiveness (acting quickly), questions were asked as to the extent to which the information being collected is useful (not measuring the right things (M&E system), and not everyone understands the measures), and organized in a manner that enables staff to act upon the findings in a timely way. A distinction is apparent here between specific project outputs that are well structured, and other types of information (performance-orientated) that appear to be lacking.

External focus: The results of the self-assessment exercise revealed that 70% of staff receive feedback from clients, however, almost all of this feedback emanated from farmers through adoption rate surveys. No mention was made of the other (11) types of client listed in the stakeholder mapping exercise. Strengthening feedback mechanisms with a broader range of clients may be considered important as CRI broadens its approach to incorporate non-traditional markets.

SUMMARY OF DIAGNOSIS

CRI's institutional environment is complex, located within a large council of research institutes, with numerous clients and stakeholders. Clients and stakeholders include those who fund CRI's work, those who receive CRI's services, and those that both pay for and receive the services. Both the nature and sources of funding, and the types of clients that CRI services, are in some cases shifting. This situation is considered both an opportunity and a threat to the institute.

The changes in CRI's institutional environment has created a drive within the institute to consider its internal systems: the nature of its core business, the process of conducting its core business, its linkages with different client and stakeholder groups, and the way in which it secures and manages its resources (human and physical).

It is recognized that, in principle, strong performance management will enable CRI to function well as an institute, forging a strong working environment, delivering good products as demanded by various client groups, and thus being recognized as a strong centre for crops research. In this context, a number of key opportunities were identified for strengthening its existing performance management; relating to the institute's understanding and measurement of what

staff are directly accountable for, information flows and feedback mechanisms both internally and with core clients.

NOTES

[1]A case is being made that research funding should be centralized, and apportioned on the basis of achievement rather than on staff numbers.

Scorecard construction

Scorecard construction took place during a workshop held in Ghana in July 2002. A series of exercises was conducted through the workshop to build performance management systems using the balanced scorecard approach. This involved reviewing the corporate goal and building sub-systems around the four perspectives of the scorecard: employee, internal business, client/stakeholder and financial. Review, consultation and construction of the performance management sub-systems for each perspective drew heavily on the findings of the organizational diagnosis. The results of these exercises for CRI are described below.

ESTABLISHING THE ORGANIZATION'S GOAL

A strong performance management system relies upon a shared understanding of a common goal. It was, therefore, considered essential early on in the Stage I diagnostic needs assessment to ascertain whether or not a jointly held goal exists. This was achieved through an exercise to review individual staff's understanding of the organization's goal, their contribution to this goal, and how that contribution is measured. During the Stage II workshop, CRI representatives reviewed these findings as a basis for revising their organizational goal.

Revisiting the organization's goal: The stated goal of CRI's senior staff related in most cases to conducting effective research that will result in improved agricultural production/food security in the country. However, the achievement of this goal relies heavily upon an efficient and effective extension service. Questions posed included: to what extent should CRI be expected to fulfil this extension role, and/or to what extent can CRI hope to influence existing extension services to achieve this mandate, i.e. one thing is good quality demand-led research, another is improved productivity? Whilst, it was noted by CRI that extension does form part of its role, through on-farm research with extension staff and farmers, it was acknowledged that CRI needs to be clear about where its boundaries lie for accountability purposes.

Some individuals found it difficult to distinguish between describing what they do (i.e. their day-to-day activities) and the overall goal of the organization. This was felt to be due mainly to a lack of clarity over terminology, and for some, a clear sense of shared mission.

Individuals' contribution to the organization's goal: Individuals' perception of their contribution to the organization's goal, and how this contribution is measured, were also assessed through the same exercise. Most people defined their contribution in terms of what they do on a day-to-day basis, i.e. their activities, rather than their achievements that lead clearly to the stated goal. For example, "I conduct research", rather than stating how the research conducted contributes to the goal. This was recognized as important, as it looks at M&E at the institutional level (rather than just within projects) and involves understanding how outputs link to the goal of the institution. Further, it was noted that if people feel they are contributing in a meaningful way to the goal of the organization (i.e. clear links established between their work area and the goal), staff motivation within the organization is likely to be increased.

Measurement of this contribution: In many cases, individuals described measurements of their contribution in terms of changes beyond their direct control (e.g. improved household income as a consequence of contributing work on developing improved varieties). This suggests the need for measures which accurately reflect outputs or outcomes for which people are directly accountable, otherwise, how can someone's achievements truly be assessed and what is the basis for doing things differently?

A lot of the measures listed were simply counts, for example, number of farmers trained. This says little if it is considered a measure of an individual's contribution to the goal of the organization. Further, it says nothing about the quality of the work, for example, how effective was the training, did those trained come back and ask for further advice? A huge range of measures were stated and it was considered important to determine which of these are most important at the institutional level to best demonstrate the achievements of CRI to its clients.

Revising the organization's goal: There was a recognized need to consider the goal of CRI in light of many statements that suggest that CRI can (and should) directly influence agricultural production and food security which relies on intermediary organizations (most notably extension services). One person stated that the goal is to be a centre of excellence in research, and this was considered to be a well-considered view in terms of what is realistic, realizable and measurable as the primary aim of the institute (although it was recognized that 'excellence' will need to be clearly defined).

Through a group-based review of the various individual perspectives, and the use of guidance material, a consensus was reached:

Crops Research Institute Goal

To become a centre of excellence in the research and development of high yielding disease/pest resistant/tolerant consumer-accepted varieties and associated technological packages for mandated crops by the year 2010.

In terms of individuals' contributions to the institute's goal, it was recognized that there is a need to consider carefully the link between the targets of individuals (or at the project level) and that of the goal of the institute as a whole. Currently (as made evident through the exercise), staff identify their contribution to the goal simply in terms of their day-to-day activities.

Measuring individual staff's contributions also needs to reflect this shared purpose. Existing measures are numerous, and in many cases do not accurately account for what they are actually doing and achieving. It was seen as important to look at (i) how best people can assess how they contribute to the goal, and (ii) which key measures best illustrate the achievements of the institute.

DEVELOPING DELIVERY PLANS UNDER THE SCORECARD PERSPECTIVES

Delivery plans were developed by CRI for three of the four scorecard perspectives. The exercises followed (detailed in main volume) led the

CRI team through a five-part methodology: formulating objectives for each perspective; identifying key performance indicators for each perspective; reviewing existing M&E activities under the priority objectives; identifying critical success factors and developing draft delivery plans. The results of this process are presented per scorecard perspective.

Developing the employee perspective

How can we continue to improve and create value?

Clarifying or defining objectives in this perspective involves reflecting on the performance of the internal employee-related processes that drive the organization, including forward-looking targets for continual improvement. Without employee 'buy-in', CRI's achievements are likely to be minimal. This is of particular relevance in an environment where (i) other agencies (e.g. universities and NGOs) are attracting able employees away from the public sector to potentially more lucrative jobs, and (ii) where donors are looking to invest in attractive, growing organizations.

A number of key issues were identified from the organizational diagnosis.

- If CRI is to continue to strive to be the front-running institution in crops research, it is crucial that it retains its self-identified most valuable resource – its staff.
- Central to this is a clarification of purpose, strengthened by good communication between staff and a feeling of self-worth. Identifying and illustrating the achievements of individuals, and how their work relates to the work of others in view of the goal of the institute, will help to achieve this.
- Issues to be considered to achieve this include: (i) how can employee development and retention be improved?; (ii) what role can improved information collection and sharing play in this?
- The benefit of revising and developing a set of performance measures in this context is the extent to which CRI staff and management can better understand motivational problems, and where possible, take corrective action.

Figure 6 illustrates the objectives and key performance indicators developed by CRI.

Objective	Key Performance Indicator
1. Motivated staff by 2005	• Percentage of staff satisfied with their jobs • Percentage of tasks completed on time
2. Enhanced human resources by 2005	• Percentage of staff receiving relevant training by 2005 • Percentage of staff still in post by 2005
3. Staff satisfied with available working conditions	• Percentage of staff satisfied with working conditions • Percentage of staff leaving because of bad working conditions

Figure 6 Employee perspective

In light of time restrictions during the workshop, the CRI representatives prioritized one of the three employee perspective objectives for the development of a delivery plan. The delivery plan construction process considered what is already being done by CRI that relates to the objective. Setting this aside, they then followed a process of identifying what critically needs to happen if this objective is to be met. These two exercises were formulated around the delivery plan framework, enabling a consideration of what is required (the difference between what needs to be done and what is currently being done) to achieve the objective (Plan 1).

Developing the internal business perspective

To satisfy our clients, at what internal business processes should we excel?

The objective of this perspective is to link the client/stakeholder perspective with the internal actions and perspective of those responsible for meeting contractual obligations and fulfilling mandates. A number of issues were identified during the diagnosis which CRI representatives considered in developing the delivery plan for this perspective.

Plan 1 Draft delivery plan for employee perspective at CRI

Level	What are we already doing?	What M&E are we already doing to assess this?	To achieve this objective, what has got to happen (critical success factors)?	By when?	By whom?
Objective	Staff motivated by 2005				
Key performance indicators	Percentage of staff satisfied with their jobs Percentage of tasks completed on time				
Outputs	▮ Staff with high morale ▮ Trained staff ▮ Tasks completed on time ▮ Staff motivated	▮ Some issues followed up	▮ Survey undertaken ▮ Staff exit report written ▮ Staff conditions reviewed ▮ Survey report presented ▮ Results and recommendations implemented	Annually	N/A
Processes (activities)	▮ In-service training ▮ Staff welfare fund ▮ Car/house loans ▮ Health benefits ▮ Sourcing computers and laboratory material	▮ Annual reporting system ▮ In-house reviews of staff performance ▮ Annual planning sessions with stakeholders	▮ Undertake staff survey of motivational issues and needs assessment ▮ Conduct staff exit surveys ▮ Undertake annual review of staff conditions benchmarked against other organizations ▮ Analyse survey reviews and recommended interventions	Annually On exit Annually Annually	Heads of divisions Management Union, staff, socio-economists Union, staff, socio-economists
Inputs	▮ Staff time ▮ Budget ▮ Computers and resources	▮ N/A	▮ Staff time ▮ Resources ▮ Survey instruments ▮ Computers/software	2003	Management Unions Socio-economists

Are we doing the right things?

Are we doing things right?

- Most (if not all) research activities conducted by CRI are project-based.
- CRI's client base appears to be changing, with opportunities opening up for links with industry (agro-processing and breweries) and export markets (for non-traditional crops) that have important implications for the business processes within the institute. Further, the role that CRI is playing in extension – beyond its direct mandate in research – questions the clarity (or boundaries) of where CRI should be operating to excel at its core specialism, research.
- Paying as much attention to non-financial measures as to financial measures (e.g. whether what the institute is doing contributes to its goal, whether staff are suitably motivated) is crucial if the institute is to move forwards. However, from the self-assessment exercise, opinion was very divided as to whether CRI was currently doing this.
- For CRI to respond effectively to its current and potential clients, the organization must have strong linkages and feedback mechanisms. It is recognized by CRI that the organization's structure is not currently configured in the most appropriate way to respond to the demands of a changing client base. This highlights the need to better orient internal systems and processes towards corporate objectives and goals as opposed to being led by project-based systems.

Figure 7 illustrates the objectives formulated and the performance indicators selected to address these issues. The emphasis of the objectives developed by CRI reflects the need to be client-driven, with the indicators reflecting the strength of these linkages. Less emphasis was placed on the internal effect of a stronger client focus.

It was recognized during the review and delivery plan building process that consideration and possible reconfiguration of existing business processes within CRI to respond to a changing client base need to be well considered; a potentially lengthy procedure. Consequently, the processes and outputs selected for the delivery plan reflect the critical steps required to assess existing client needs, and the potential changes to be made within CRI. It is anticipated that objectives may need to be

Objective	Key Performance Indicator
1. Systems developed to regularly identify the needs of clients	• Bi-annual consultative planning meetings with clients to identify their needs • Minutes of meetings with client/stakeholder needs identified
2. Developed structures for addressing clients' needs	• Number of clients/stakeholder needs addressed by the different divisions of CRI in the year • Quality of services provided by CRI's Business Development Unit
3. Publicized human resources potential and products of CRI	• Number of promotional materials and activities undertaken per year • Number of hits at CRI website per year
4. Improved institute and client relationships	• Number of clients participating in CRI's promotional activities, e.g. open days, field days, etc. • Number of stakeholders represented on CRI's management board and research committees

Figure 7 Internal business perspective

revised, or new ones formulated that reflect the internal changes that will need to be considered as a consequence of this enhanced client focus.

The delivery plan developed (Plan 2) does not illustrate existing activities and M&E contributing to the objective. These were discussed and noted by the CRI team, as were the critical success factors. Thus, the plan presented represents what CRI needs to do, but is not currently doing, to achieve this objective.

Plan 2 Draft delivery plan for internal business perspective at the CRI

Level	To achieve this objective, what has got to happen (critical success factors)?	By when?	By whom?
Are we doing the right things?			
Objective	Systems developed to regularly identify and address the needs of clients		
Key performance indicators	Bi-annual consultative planning meetings with clients to identify their needs Minutes of meetings with clients on clients needs documented		
Outputs	Existing systems for clients needs identification reviewed	2003	N/A
	Limitations of systems addressed	2003	
	Structures to intensify participatory client-centred research put in place	2003	
	New/emerging major clients identified	2003	
	Framework of identifying clients needs developed and identified	2003	
	Brochure on CRI developed		
Are we doing things right?			
Processes (activities)	Review existing systems for identifying and addressing clients needs	2003	Scientists and Business Development Unit (BDU)
	Address limitations/gaps in existing system	2003	
	Intensify participatory client-centred research	2003	Scientists and BDU
	Identify new/emerging major clients	2003	Management
	Develop framework for identifying needs from existing approaches and gaps	2003	Management, scientists and BDU
	Identify training needs of clients	2003	Management and scientists
	Develop brochure on CRI products/services and human resource capability	2003	Publications Unit and scientists
Inputs	Staff time – human resources	2003	Management
	Other resources – computers, etc.	2003	Scientists

Developing the client/stakeholder perspective

How do we appear to our clients?

This perspective considers the organization's performance through the eyes of a client or stakeholder, so that the institution retains a careful focus on client or stakeholder needs and satisfaction. The following issues were identified during the diagnosis and were considered in the development of the delivery plan.

- CRI has numerous clients. Linkages between CRI and several of these clients were considered to be strong, notably MOFA and farmers – the traditional client base of CRI. However, whilst these linkages were identified as strong, at the same time, a number of these clients and their function and/or mandate were also perceived to be threats.
- Further, and common to many research institutes, a number of the major clients of CRI's services (e.g. farmers, industry, etc.) are not the same agents as those who pay CRI (e.g. donors, government).
- The main opportunity rests with CRI being better able to *understand and analyse* how clients (other than farmers) perceive the institute, specifically the quality and relevance of its services – its institutional performance. That is as opposed to basing efforts too much on *describing* the ultimate impact of project-based work on farmers. The current approach not only leaves CRI vulnerable in terms of plausibility, it also runs the risk of under-valuing its impacts elsewhere among the operating environments of other clients.
- The perceived need to improve research-extension linkages is surpassed by the more imperative need to clarify the role and function of CRI and to articulate this in its relationship with dedicated extension providers.

Figure 8 illustrates the objectives and key performance indicators developed by CRI in the client/stakeholder perspective.

The objectives and draft delivery plan (Plan 3) developed focused clearly on developing a capacity within CRI to better understand the needs and views of key clients, and thus be better able to respond to their demands. As with the internal business perspective, the delivery plan developed does not illustrate existing activities and M&E contributing to the

Objective	Key Performance Indicator
1. Better understanding of how to ensure the institute is trusted as a provider of good services by clients/ stakeholders	• Percentage of respondents from independent surveys who say they trust CRI in relation to other institutes • Number of clients contacting CRI for services per year
2. Better understanding of client satisfaction with services or products	• Number of repeated client requests for CRI services • Levels of acceptability of CRI services and products by users
3. Institute identified as a centre of excellence for agricultural research by collaborators	• Number of publications in recognized journals • Number of awards from local and international organizations

Figure 8 Client/stakeholder perspective

objective. These were discussed and noted by the CRI team, as were the critical success factors. Thus, the plan presented represents what CRI needs to do, but is not currently doing, to achieve this objective.

Implicit within this approach is an initial step (not made explicit) which is a clear delineation of the major clients, both now and those that are likely in the near future. The type of approach taken will vary depending on the client (e.g. in relation to farmers in comparison with industry), but the principle remains the same.

Financial perspective

To succeed financially, how should we look to donors, government and investors from the corporate sector?

The diagnosis highlighted several issues relating to linkages with funding agencies – the Government and external stakeholders.

- Several difficulties exist. Disbursement problems, lower anticipated funding levels, and lack of access to some common-pool funding

Plan 3 Draft delivery plan for client perspective at the CRI

Level	To achieve this objective, what has got to happen (critical success factors)?	By when?	By whom?
Objective	Better understanding of client satisfaction and trust as a provider of good products and services		
Key performance indicators	Number of repeated client requests for CRI services Level of acceptability of CRI's services and products by clients		
Outputs	▮ Surveys undertaken	2003	N/A
	▮ Existing channels and processes reviewed	2003	
	▮ Structures to regularly monitor client satisfaction established and implemented	2003/ bi-annually	
	▮ Feedback from clients analysed, number of repeated clients and services requested, assessed and analysed	2003	
	▮ Report on clients' perspective of CRI training programmes	2003	
Processes (activities)	▮ Analyse the quality and quantity of feedback from clients	2003	Business Development Unit (BDU) and socio-economists
	▮ Assess and analyse the number of repeated clients and types of services requested	2003	
	▮ Survey on client satisfaction of CRI's products and services	2003/ bi-annually	Socio-economists
	▮ Review existing channels, processes and systems of service and product delivery	2003	Management and scientists
	▮ Implement structure developed	2003	Management
	▮ Establish a structure or system to regularly monitor client satisfaction	2003	Management
	▮ Evaluate client acceptability of CRI training programmes and materials developed	2003	Publications Unit
Inputs	▮ Staff time – human resources	2003	Management/scientists/BDU
	▮ Other resources – computers, etc.		

Are we doing the right things?

Are we doing things right?

from, or through, government are compounded by the nature of donor-funding (which is not always structured around the core areas and nature of operation of the institute) and the inability of a number of major clients to pay for services.

- Problems of funding through government may not be easily resolvable, but it is recognized that good information and feedback mechanisms will enable CRI to respond to impending or actual changes. For CRI to attract and compete for funding, there is a clear recognition that relationships with, and understanding of these funding bodies need to be well developed. Developing links with industry and increasing the portfolio of work on new product markets implies CRI enlarging its market base to meet its financial responsibilities *vis-a-vis* the commercialization policy/drive. The traditional markets will still be kept intact.

In attempting to resolve these constraints, the following issues were highlighted.

- The need for a corporate framework/basis with which to help CRI staff as well as its investors better understand its overall performance and impact as an institution if it is to attract funding on a more equally defined basis. For example, mechanisms are needed to provide feedback to government to show how its policies affect the work of CRI and its commercialization drive.
- Through consultation with clients, other than farmers, the need to develop a more consistent and commonly understood basis with which to monitor and evaluate products and services as a way to improve access to growing markets associated with newer/different products.

Figure 9 illustrates the objectives and key performance indicators developed by CRI in the financial perspective.

The objectives developed reflect a number of gaps in CRI's existing systems. These include being able to demonstrate CRI's financial efficiency to its clients, and its work effectiveness through demonstrating impact. This does not imply 'more of the same', but through clear and measurable objectives developed under the other perspectives, and drawing on the linkages between the perspectives,

Objective	Key Performance Indicator
1. CRI recognized as an efficient user of resources	• Number of technology products produced per unit spent • Number of research proposals funded by donors
2. Well-developed accounting system for financial resources	• Number of audit queries answered unsatisfactorily • Percentage of accounting reports delivered on time
3. Effective feedback and communication mechanisms established	• Number of feedback reports submitted • Nature of feedback reports received from donors/ government
4. Structures developed for showing impact of institute	• Number of published reports on impact studies • Number/nature of positive feedback reports

Figure 9 Financial perspective

arriving at a position where it can demonstrate accreditable performance. The current performance indicators were developed rapidly due to the lack of time during the workshop, and thus need to be re-considered in terms of how effectively they measure the challenging objectives set. No delivery plans were developed for this perspective due to the time constraint.

MAPPING OBJECTIVES

The strength of the balanced scorecard approach lies not only in the consideration of independent perspectives of organizational performance, but also in the interdependence of these perspectives and their contribution to the organization's goal. The mapping of objectives – looking at cause-and-effect relationships – visualizes how the objectives are linked.

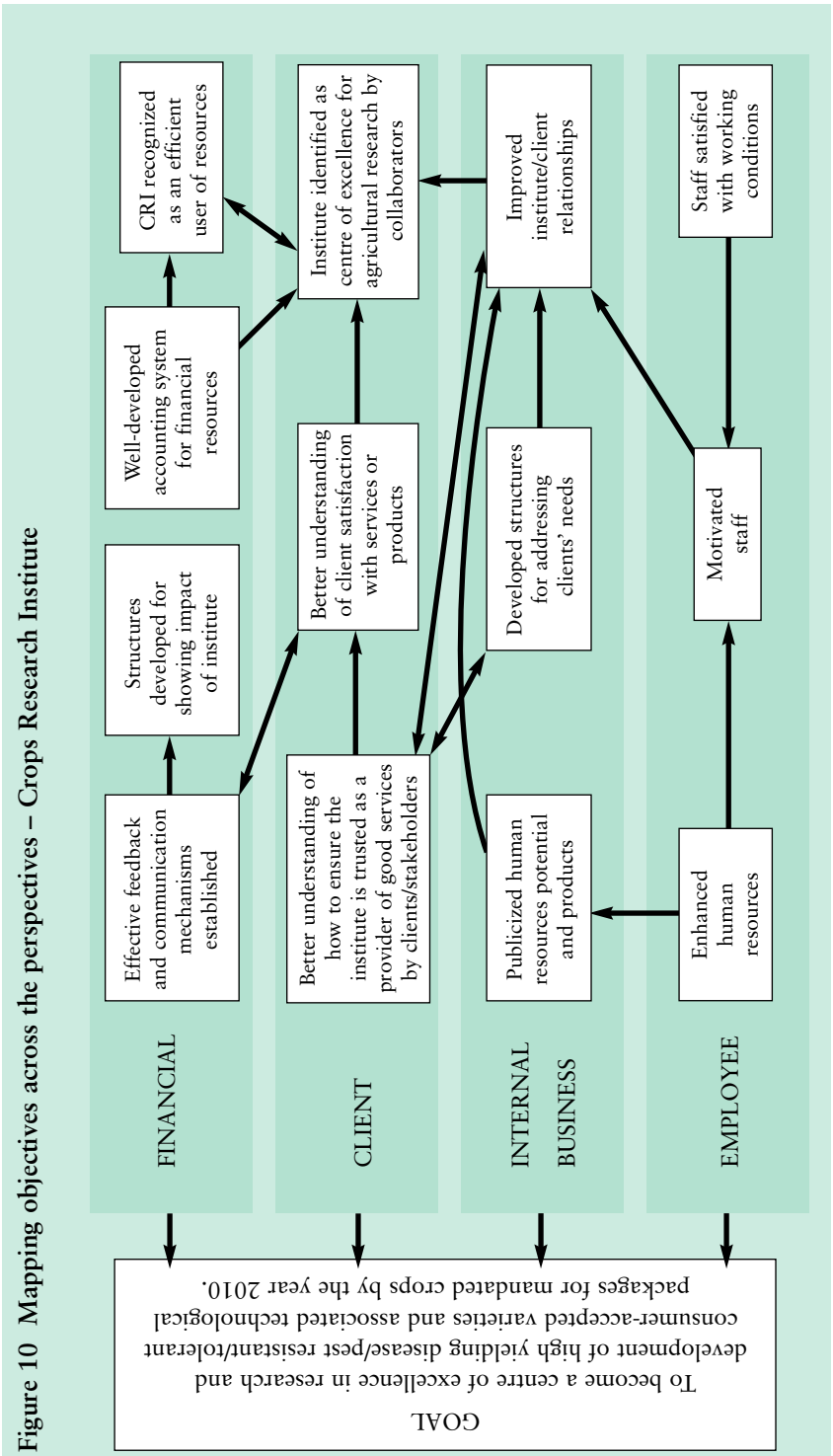


Figure 10 Mapping objectives across the perspectives – Crops Research Institute

An objective-mapping exercise was conducted at the end of the workshop using CRI as an example (Figure 10) of how cause-and-effect relationships can be analysed and charted. Numerous assumptions exist in this linkage map. At the lowest level, if human resources are enhanced, staff motivation will improve and CRI will feel more confident in publicizing its human resource capacity. Improved staff motivation and demonstrated human resource capacity are likely to lead to improved institute/client relationships. Improved institute/client relationships are also contingent on a better understanding of, and linkages with, clients in terms of understanding their satisfaction (and acting upon it). Alongside strong internal fiscal systems, this should contribute to CRI being recognized as an efficient user of resources, and more broadly, a centre of excellence for crops research.

In this example, some overlap exists at different levels, and certain objectives have less clear linkages than others. The goal of the CRI, to be a centre of excellence, is also present as an objective within the client perspective, albeit as recognized by collaborators rather than by all clients and stakeholders (the overall goal). At the top level, the financial perspective, objectives such as 'structures developed for showing impact' are not so clearly linked back down the chain. Clearly, the validity of these assumptions, and the key performance indicators need to be reviewed after conducting this exercise.

Current key performance indicators were designed to measure the performance, or achievement of each specific objective. If a snapshot of this map is taken (Figure 11), it is clear that the key performance indicators do not reflect these linkages. For example, the measures of staff motivation (satisfaction and task completion) do not provide any measure of the link to the next objective – improved institute-client relationships. If improved staff motivation is perceived to have an effect on improved institute-client relationships, the nature of this effect needs to be considered, and if deemed necessary, measured.

The next step, therefore, may be to consider, for example, one or more critical indicators for measuring the cause-and-effect relationship between staff motivation and improved institute/client relationships. Whilst this approach does not rely solely upon linkages across the perspectives (each in its own right contributing to the organizational

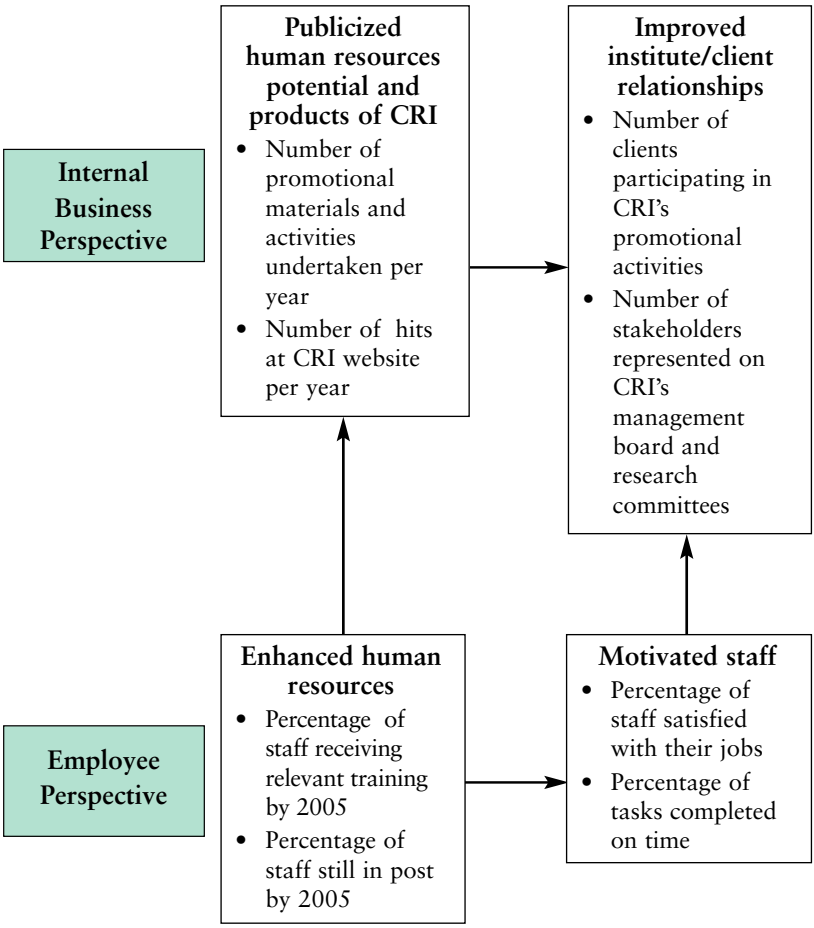


Figure 11 Snapshot of the objective-mapping exercise illustrating key performance indicators

goal), where linkages are deemed to exist, the measurement of these linkages will enable assessment of progress.

Having linked the objectives, revision and perhaps rationalization needs to take place, alongside the selection of key performance indicators that measure the linkage. Key performance indicators have a crucial role to play as measures of the success of each objective, and as indicators of the likelihood of the linked objective being met. Having established and tested the key linkages between objectives, it may be necessary to review the key performance indicators, to see

whether or not they effectively fulfil this function. If not, they made need to be adjusted or added to, or it may be considered appropriate to develop some extra indicators to look at the interface between one or more objectives. This moves the scorecard approach into the realm of impact pathway development, as the linkage key performance indicators are essential measures of progress towards the goal on the basis of a cause-and-effect model.

This initiative did not progress beyond illustrating possible objective-mapping using those generated by each case study organization. The extent to which this exercise is deemed useful will determine its validity within an overall performance management system at the organizational level for each case study organization.

CRI summary

The following summary presents the main issues identified through the organizational diagnosis, the steps taken using the scorecard construction process, and the perceived value added of the project as a whole.

The **organizational diagnosis** identified**:**

- certain inherent weaknesses within the system at the organizational level – poor feedback and learning mechanisms, lack of clearly defined attributable achievements, lack of a well-balanced set of performance measures
- certain strengths and opportunities that CRI would like to be better able to pursue – effective utilization of the human resource base, enhanced linkages and feedback with clients (existing and potential), policy-makers and funders
- the need to be adaptable within a changing institutional environment through strengthening linkages with important external agents to anticipate and respond pro-actively.

Utilizing the scorecard approach enabled:

- the reconfiguration of existing activities under the framework of the balanced scorecard – namely, a review of the organization's goal to accurately represent the work and aims of the institute, objectives and indicators to achieve this goal, and drafted delivery plans to achieve some of these objectives
- The identification of areas that have not previously received attention – notably methods for enhancing feedback and thus learning across several dimensions, for example, employee satisfaction and its linkages to organization performance.

Added value from this project included:

- clarification of current capacity and issues, potential opportunities and threats which reflect the existing capacity and utilization of systems within CRI

- utilization of a framework for facilitating a broader understanding of organizational performance
- development of corporate objectives and indicators that aim to bring together the core work areas of the institute
- identification of critical success factors for achieving these objectives in view of what is currently being done in these areas; identifying current M&E activities; revealing gaps to be addressed through draft delivery plans.

Acronyms

ABR	Annual Budgetary Requirement
AgSIP	Agricultural Services Sector Investment Programme
CIDA	Canadian International Development Agency
CRI	Crops Research Institute
CRU	Crops Research Unit
CSIR	Council for Scientific and Industrial Research
DANIDA	Danish Aid Agency
DFID	Department for International Development
EPA	Environmental Protection Agency
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
IARC	International Agricultural Research Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFAD	International Fund for Agricultural Development
IITA	International Institute for Tropical Agriculture
JICA	Japanese International Co-operative Agency
MOFA	Ministry of Food and Agriculture
NARP	National Agricultural Research Project
NIRP	National Institutional Renewal Programme
RECL	Research Extension Liaison Committee
SMART	Specific, Measurable, Achievable, Realistic and Timely
USAID	United States Agency for International Development