

# Capacity Building Applied to a Livestock Research Network in West Africa to Enhance the Development Process

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## 1. Introduction

The International Trypanotolerance Centre (ITC) is a sub-regional Livestock Research Centre based in The Gambia, supporting applied Research and Development (R&D) in low-input and market-oriented livestock production systems in five countries in West Africa (The Gambia, Senegal, Guinea, Guinea Bissau, Sierra Leone). The Centre has given, since its inception in 1984, strong emphasis to capacity building of technical, scientific and extension personnel in the collaborating with NARS (National Agricultural Research Systems) and national Livestock Departments.

Over the years the Centre has strengthened its regional mandate through implementation of regional activities, presently supported by the EU-funded R&D programme *Programme Concerté de recherche-développement en Afrique de l'Ouest* (PROCORDEL), which covers 13 West African countries and is jointly coordinated by ITC and CIRDES<sup>2</sup>.

The R&D agenda and human resource development (HRD) plans of ITC, as spelled out in its Mid-term Plan 2000-2004, form the framework within which the project's results are to be achieved in the partner countries within a time frame of 4 years. Table 1 gives a summary of the project's logframe.

<b>Objective</b>	The programme aims at sustainable increase in stock breeders incomes, greater availability of animal proteins and improved food security in West Africa
<b>Purpose</b>	To help the intermediate and final beneficiaries of research (stock breeders, outreach agencies, decision-makers) do their tasks better by applying recommendations resulting from the research programme
<b>Results:</b>	1. The research themes, eligible in the current programme, are defined using criteria that will allow addressing the beneficiaries felt needs through a participatory process
	2. The research projects on the selected themes are implemented and generate directly useable results
	3. The research results are passed on and put at the disposal of the beneficiaries

Table 1: Summary logframe of PROCORDEL (2000 to 2004)

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The analysis of the development process in the agricultural sector of developing countries has often identified the limited capacity and/or lack of competent technical, scientific and extension personnel, isolation from sources of scientific information and limited opportunities for collaborative research as key constraints to the effective generation and dissemination of research outputs in form of improved and novel techniques and innovations for the benefit of the agriculture and livestock producer. Linkages between research, technology-transfer agencies and farmers are far from effective in African countries and have been identified as key problems (Eponou, 1996). Conscious of these constraints, ITC has developed a regional training concept, that considers the following major challenges within a project that attempts to strengthen these linkages:

- The partner countries in West Africa have different official languages and backgrounds to their education systems (British, French, Portuguese) with qualifications that are not always equivalent. Language barriers can only partly be overcome, as only few, usually senior scientists, are bi-lingual and the use of vernacular is not appropriate for high level training.
- In a resource constraint environment scientists are required to have multiple skills rather than highly specialised skills only. Their professional skills need to be expanded to include managerial and financial skills and the capability to work efficiently in multi-disciplinary teams.
- The ultimate aim of applied research is the transfer of results to the beneficiaries in order to enhance livestock productivity. This transfer has been the mandate of extension services with personnel specially trained to adapt research outputs to the livestock producers' requirements. With structural adjustment policies and scaling down of public government services, however, these extension services have become largely defunct. Personnel has either been made redundant, or made immobile due to lack of operational funds. Rather poor payment for a difficult task adds to poor motivation. In consequence, researchers are challenged to play an active and important part in the transformation process of research results into technological packages and socio-economic recommendations for appropriate transfer to the beneficiaries. In the context of PROCORDEL, the achievement of result 3 (see Table 1) will put the training concept to the test!

## 2. Objectives

The training programme puts emphasis on the following objectives:

Short-term:	Immediate support to ongoing research activities through professional, technical and managerial training of personnel involved, taking cultural, educational and sociological country differences into account, with emphasis on the harmonisation of methodologies
Medium-term:	“Packaging” of research results by scientists/professionals and transfer to intermediate beneficiaries ( <i>Train the Trainer</i> ) and ultimate beneficiaries ( <i>Train the Farmer</i> ), assuring achievement of medium-term institution/project objectives

Long-term: Career development and institutional capacity building through post-graduate training for selected scientists

### 3. Material and Methods

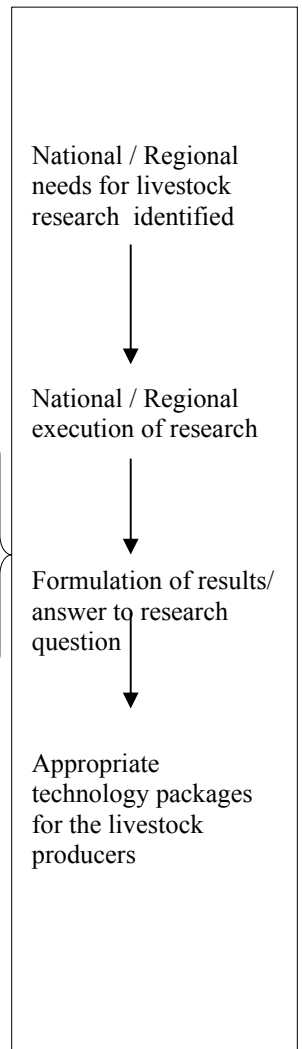
The ITC Annual Workplans and more specifically, the PROCORDEL workplans for each of the partner countries, form the basis for the analysis of the specific training needs, training subjects and training methods.

The training concept has two major sector entry-points, namely the *HRD component* and the *transfer of technology component*, which, synergistically, produce the overall outputs of applied research, as described in Table 2.

#### a) HRD component

Basis for analysis	Continuous analytical process	Action
Research programmes; Workplans	Analysis of workplans at regional level ⇨ regional training needs  Analysis of workplans at national level ⇨ national training needs	Training of scientific, technical, managerial personnel
Nomination of researchers, technicians, extensionists, as collaborators by respective national partner	Analysis of capacity of nominated collaborators ⇨ individual training needs of collaborators  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Monitoring and Evaluation</div>	

#### Research continuum



#### b) Transfer of technology component

Basis for analysis	Transformation process	Action
Research results e.g.  Animal Health Animal Production Socio-economics Policy research	„packaged“  to form comprehensive intervention strategies	transfer to beneficiary through:  Professional trainer/ researcher ↓ ToT      Printed media      IT www ↓      ↓      ↓ Extensionist      ↓      ↓ ↓ ToF      ↓      ↓ ↓      ↓      ↓ Beneficiary

Table 2: Key elements of the regional training concept

## 2.1. HRD Sector component

### 2.1.1 *Analysis and planning*

Research programmes and workplans address nationally or regionally identified research needs, as shown in table 2a. These programmes and plans are then executed by collaborators who should be adequately qualified to carry out specific tasks. Once such teams, workgroups, even departments, have been nominated by the relevant national partner institutions, the process of analysis of individual capacities to fulfil the given tasks, starts. A comparison of the present job profile and the educational background with the task at hand will reveal ranked individual training needs within the research institutions, including ITC.

An analysis of the national capacities for implementation of the research topics at the level of the NARS/Livestock Departments will allow ranking of these topics, and those with lowest implementation capacity, for example in the case of new methods and techniques, are defined as national training needs.

An analysis of the national workplans of all countries and their national training needs, will reveal common or regional training needs.

### 2.1.2 *Implementation*

These three categories of individual, national and regional needs are addressed using different methods and schemes to train professional, technical and managerial staff. Training contents are designed with the view to harmonise research protocols, data entry forms and data management and analysis in all partner countries. They are directly relevant to the research programmes and workplans.

Individual training needs: a wide range of training options offer themselves to address these needs. Given the limited resources of our project, the following was implemented:

- On-the job training
- Short-term attachments
- *Regional Mobility Scheme*: professionals from partner countries implemented specific research assignments at ITC
- Limited number of postgraduate training scholarships for professionals (MSc, PhD)

National training needs: courses of 2-10 days duration were organised in the respective country in a setting suitable for the topic of the training, usually combining instructions with practical sessions. Mainly national instructors alongside with one or two ITC scientists were engaged for this type of course.

Regional training needs: ITC or a NARS Centre were hosting these courses in which usually 2-4 delegates from each country participated. Bi-lingual preparation of training and teaching material was essential to avoid communication problems.

### 2.1.3 *Monitoring*

The assessment of training needs is a continuous activity and its results feed back into the planning of future training interventions. Information on trainees' professional and training background are collected and entered into an Access training database for reference and production of reports. Success monitoring focuses on increased research implementation capacity in reference to the milestones formulated in the workplans, on application of recommended and harmonised methods in the field and on increased regional collaboration and information exchange.

## 2.2 Transfer of technology component

Outputs from research programmes are a contribution to advance in science. However, when issues of practical relevance for livestock production are addressed, the transformation of technical results into usable recommendations for the producer is of prime importance. Results of policy and socio-economic investigations need to be translated into recommendations for policy and decision makers.

Printed media and IT have been increasingly used by the ITC and the project. The dissemination of scientific, technical and extension material via the *world wide web* is gaining more and more importance to make material also available on-line as downloads ([www.itc.gm](http://www.itc.gm)).

In addition, livestock producers needs are also addressed through direct extension work, in which the scientists play an important role as mediators, as shown in table 2b. Research results are "packaged" to address specific topics, e.g. *husbandry of crossbred cattle*. This package would include all aspects of relevance and recommendations, such as: selection of the breeding material, preventive and curative health measures for the crossbred animal, appropriate feeding ratios for optimal milk production and housing. This "package" is then transferred by professionals, often scientists, to a group of intermediate beneficiaries, either extensionists or educated farmers (e.g. leaders of livestock associations) using the *Train the Trainer (ToT)* approach. This group in turn, trains the livestock producers, using all techniques available for *Farmers Training (ToF)*, often with the support of NGOs with a mandate for this type of development work.

## 3. **Results**

With a budget of 230.000 Euro for training during a 4-year period (8% of the project's global budget), PROCORDEL gives a major boost to ITC's training programme. In a stepwise approach to HRD (analysis/planning, implementation and monitoring) that goes hand in hand with the transfer of scientific results to beneficiaries, enrolments of different target groups in the training activities have developed over time as shown in Annex 1.

Annex 2 gives an overview on topics delivered to the professional, technician, extension and farmers groups either in form of regional or national courses. Key topics focused on

animal health (diagnostics, epidemiology, disease risk assessment, meat and milk hygiene), animal production (breeding, feeding, reproduction), socio-economics (methodologies and policy studies), research management tools and data management. In addition, support was given to five PhD studies, one Doctorat d'Etat and one MSc, in close collaboration with academic institutions in the sub-region and in the North.

#### 4. Discussion

The livestock research network in the ITC mandate region consists of NARS and government departments under the umbrella of regional research organisations like the Conseil Ouest et Centre Afrique pour la Recherche en Développement Agricoles (CORAF). Efficient networking amongst these institutions is vital to address the demands on research for increased agricultural productivity and is a challenge for agricultural research policy formulation (Münstermann et al., 2003).

HRD and institutional capacity building can make a major contribution to strengthen these networks through training of the individuals that form them. In the project described in this paper, a training concept has been set up, that takes a systems' approach, consisting of analytic programme formulation and priority setting, implementation and monitoring/evaluation in its HRD component.

This process contributed significantly to networking and regional integration of livestock research. At the level of research implementation, it contributed to discussion and harmonisation of methodologies used in the sub-region, to updating of knowledge and skills and to the reduction of duplication in research. Research results have been described in publications, reports, conference proceedings and posters displayed at national, regional and international events.

The other focal point of the training concept is the *transfer of technology* component. This approach aims to overcome, at least in part, the ineffective linkages between research and extension, as they have been described in ISNAR's work on linkages within technology transfer systems (Merrill-Sands and Kamowitz, 1990; Eponou 1993 a,b; Eponou 1996). Very recently, these issues have been re-emphasised, in a wider context, in the "Challenge Programme for Africa" document "*Building sustainable livelihoods through Integrated Agricultural Research for Development*" (working draft, July 2003), stating that in a new integrated approach researchers (national, regional and international) would have to work together with smallholders, extension agencies and civil society so that their products could be upscaled nationally and regionally, and outscaled from participating communities to their neighbours<sup>3</sup>.

Some critical points that have been identified in these studies, such as lack of interaction between researchers and extension agencies and farmers; poor linkage between on-station and on-farm research and integration of other partners such as private sector and NGO's in the transfer process, were given special attention over the last 1.5 years of our training programme.

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<sup>3</sup> Presently, this complex approach is being discussed in an e-forum forming part of the activities of the ICRA-NATURA Project on „Mobilising a partnership of Sub-Saharan African, European and International Organisations to develop and diffuse ARD methodologies“, funded by the European Commission. For further details, refer to [www.isicad.org/jar4d](http://www.isicad.org/jar4d)

Researchers are being encouraged to play a new, active role at two levels: (1) the reformulation of science into useable recommendations for farmers and (2) the engagement in training of extension agents and/or farmers.

In some of these training activities NGO's with a mandate for training of farmers, were solicited as partners (Caritas, Senegal and Projet d'Appui à l'Elevage, Guinea).

Farmers reacted very positive to this type of exchange with research institutions and consider it as a forum for discussion of their own experience, knowledge and needs versus new technologies proposed to them. Their comments can be valued as feedback into the R&D priority setting exercise of the research institutions.

In a recent analysis of sources of knowledge and technologies used by dairy farmers in Kenya (Schreiber, 2002), it is shown that when farmers move from subsistence to market oriented production, they are adapting from reliance on a publicly funded research and extension system alone to involvement with a more diverse set of actors. This process is certainly less advanced in West Africa but it is evolving. The research institutions are called to take initiative to become a major actor in addressing the needs of the farmers more directly and assuring their participation in the formulation of research programmes in order to maximise the benefits of public-sector research.

A full assessment of the ITC/Procordel training concept's efficiency as a model for technology transfer is not yet possible. However, first results are encouraging. Under the umbrella of the training programme, the "missing linkages" between research and beneficiaries are being re-established.

In the authors opinion, the ITC – NARS regional initiative for livestock research and development under the EU-funded PROCORDEL and its training components are a valid practical example for a more integrated R&D approach and South-South as well as North-South partnership.

It has to be realised, however, that these gains can easily be lost again, unless new concepts as tested here, are integrated into core-budgets of institutions and do not cease with ending donor support. On the other hand, capacity building has been a long standing major donor objective and the plea to donors to make long-term investment into HRD and capacity building must, once again, be renewed.

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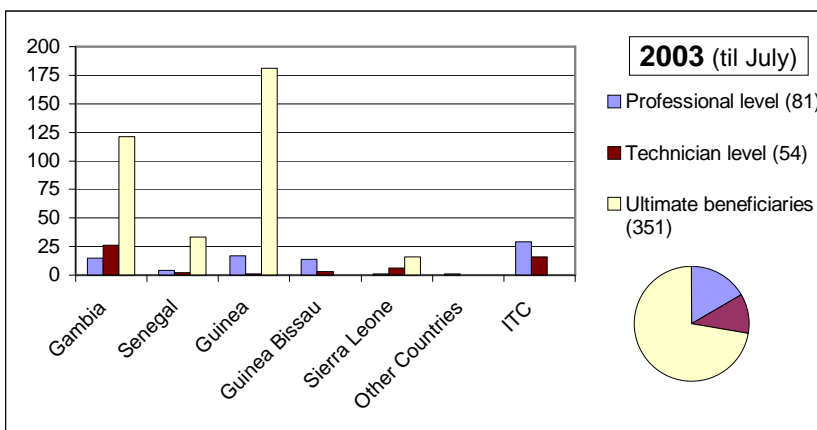
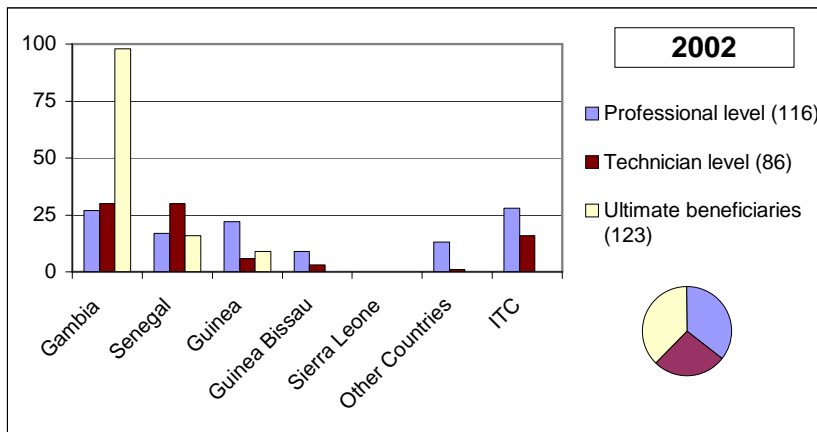
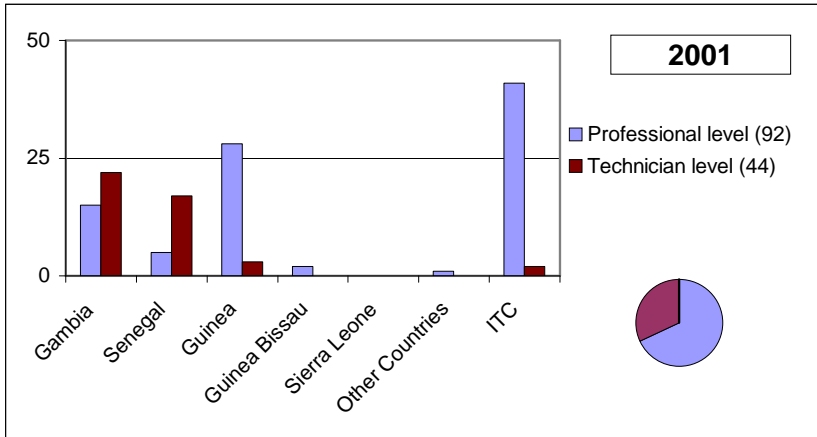
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## Annexes

1. Number of persons trained by ITC and collaborators
2. Key training topics for selected target groups and offered either at regional or at national level



Annex 1: Number of persons trained by ITC and Collaborators  
(Short-term courses and attachments 2001-2003)



Annex 2: Key training topics for selected target groups and offered either at regional or at national level

Research Field	Topic	Target group				Postgraduate	Regional	National
		Professional	Technician	Extension	Farmer			
Animal Health	Serology (PCR, ELISA, CFT)	X	X			X	X	
	Bacteriology	X	X					X
	Helminthology	X	X			X		X
	Refresher courses on divers laboratory diagnostic techniques		X					X
	Tsetse and trypanosomosis diagnosis	X	X			X	X	X
	Tick and tick-borne disease diagnosis	X	X			X	X	X
	Milking hygiene		X	X	X			X
Animal Production	Ruminant nutrition (NPN..)	X	X	X	X	X	X	X
	Crossbreeding (A.I., Oestrus synchronisation, management and husbandry)	X	X	X	X		X	X
	Purebreeding (management and husbandry)	X	X	X	X	X		X
	Stabling technology		X	X	X			X
	Use of draught oxen		X	X	X			X
Socio-economics								
	Research methodologies; policy studies	X				X	X	X
Project Management tools								
	Project Cycle Management	X						X
	Data management and livestock statistics	X	X				X	X
	Specialised software (PP, SAS, Epi-Info, LASER, GIS)	X					X	X

