ITC - The Gambia - West Africa

International Trypanotolerance Centre

An Instrument for Regional Cooperation on Livestock-based Agricultural Research for Development

Trypanotolerance - Definition

"...ability of few livestock breeds to survive, reproduce and produce in tsetse-trypanosome infested areas where others can not, without recourse to use of chemical drugs."

ITC

- Founded in 1982 by an Act of Gambian Parliament with the main objective to research and multiply the unique **N'Dama** cattle in their ancestral region of West Africa

The Problem

Increased demand for food /Population increase (3% p.a) and rapid urbanisation (6%)

Reduction in local food production due to land degradation

Loss of diversity and possible reduction in capacity to cope with stress factors

- Number of animals increase in certain areas
- Predominantly traditional husbandry systems with the highest concentration of poor farmers

General Objective of ITC

Formulation, implementation and introduction of sustainable socio-economic and environmentally acceptable integrated packages at farmer level, for improved livestock health, production and exploitation

Livestock-Environment interactions

- Agriculture, including livestock, contributes to CC and is also directly affected by changing climatic patterns.
- Carbone dioxide emissions
  - Burning of savannah vegetation by traditional herders
- Methane emissions
  - Livestock contributes about 20% of total annual methane production (Rumen digestive fermentation = CH_4).
  - Factors affecting methane production
    - Low level of productivity- High maintenance cost – high level of emission per unit of useful product
    - Feed quality: roughage with low digestibility- Higher emission per unit of intake

Mitigation and Adaptation Livestock Related Technology Options

- Pasture improvement for permanent CO_2 sequestration (Andropogon)
- Improved productivity to reduce methane emission
  - –Breeding/Selection, veterinary care
  - –Mechanical and chemical treatment of fibrous materials
  - –Strategic supplementation and By-pass protein, 10-25% reduction in CH_4 production

ITC ’s Contribution

Captured in Mission Statementand Objective:

“...contribute to increasing livestock productivity and utilisation...
...through optimal and sustainable exploitation of genetic resistance of indigenous livestock...
...for the welfare of the human populations.“

R&D Focus: four pillars

1. Pillar –Improve local resources

Development of food-feed systems for long dry season feeding strategies

Introduction of novel feed resources/Fodder Cultivation

Multiplication and dissemination of genetically improved trypanotolerant livestock

2. Pillar - innovative changes

Cross-breeding for increase in milk production

Crop-Agroforestry-livestock integration

Improved diagnostic techniques

3. Pillar – regional collaboration & networking

- Engagement of NARES and grass root beneficiaries in problem and needs analysis, priority setting and R&D implementation and validation

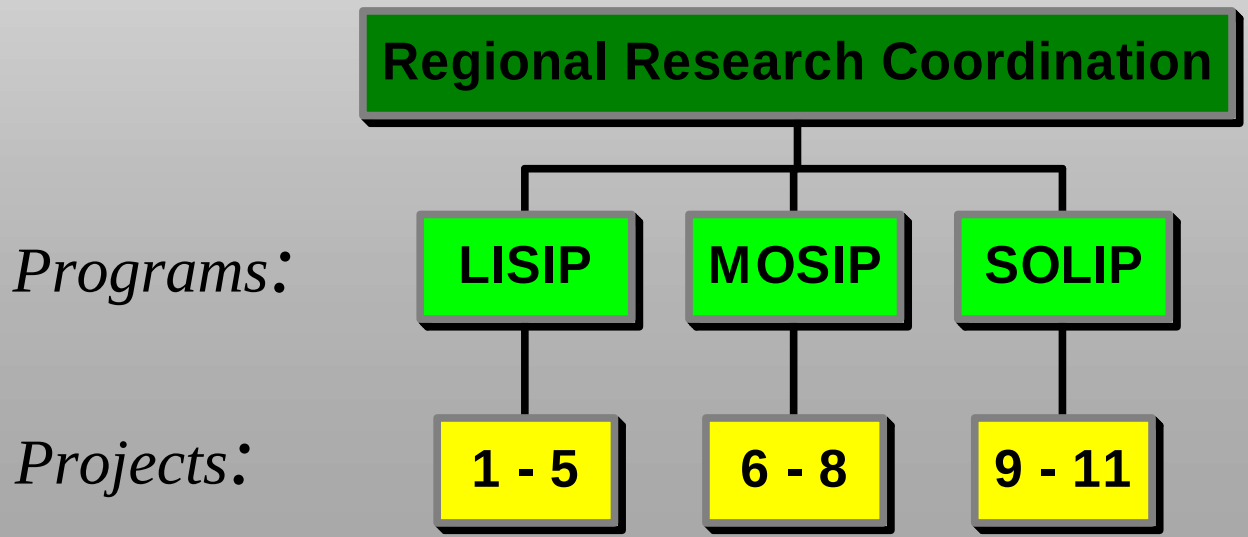
- Promote use of harmonised methodologies, techniques and approaches to research and development in the region
- Advisory role on policy formulation regarding livestock development to relevant regional bodies

4. Pillar - HRD and Institutional Capacity Building

- Training department
  - build local experise & capacity and facilitate exchange of expertise in the region
  - built local confidence and critical mass available in the region
  - provide training on technical, managerial, scientific topics

The Program Structure

- 3 Programs:
  - LISIP - Low Input Systems Improvement Program
  - MOSIP - Market Oriented Systems Improvement Program
  - SOLIP - Systems ' Overlaps and Linkages Program



LISIP

Low-Input Systems Improvement Program

Objectives:

To improve the efficiency of livestock-based farming systems through the deployment of improved technological options based on better exploitation of adaptive traits of indigenous livestock

Institutional Projects:

1. Disease risk Assessment
Quantifies disease risk and and generate decision support systems as aids for choice of control strategies

2. Disease control strategies
Design integrated vector and parasite control measures and estimate impact of disease on production

3. Disease resistance and stability
Identifies and reduces impact of stress factors on disease resistance

4. Crop - agroforestry - livestock integration
Improve efficiency of total system through nutrient recycling

5. Pure – breeding of indigenous disease-resistant stock

MOSIP

Market-Oriented Systems Improvement Program

Objectives:

Improve the economic efficiency of medium to high input systems through optimisation of farm and market resources

Institutional Projects:

1. Emerging systems for meat and milk
Institutionalising community-based participatory breeding programs to meet market demand for Meat and milk in urban and high human population ar

2. Feeding systems
Strategies to better match feed and production requirements to maximize outputs

3. Biotechnology
Use available biotechnological tools to improve efficiency of animal production and processing

SOLIP

Systems' Overlaps and Linkages Improvement Program

Objectives:

Increase livestock productivity and sustainability and enhance outputs of agricultural systems through adoption of technological options and methods generated in partnership with NARS

Institutional Projects:

1. Address public health and safety concerns from consumption of livestock products
Improve consumer confidence in livestock production, processing and marketing systems through promotion of safety standards as recommended by Codex Alimentarius

2. Socio – economics and policy aspects of livestock enterprises
Evaluate economic profitability of improved technologies and clarify role of key policy reforms in livestock enterprises

3. Capacity building and information exchange
Increase region-wide critical mass for livestock-based R&D and improve rate of technology Generation through networking and use of common research methodologies

Regional Cooperation

- OBJECTIVES/PRINCIPLES
  - Exploit regional synergies for more efficient use of resources to conduct livestock based Research and Development activities in areas of regional importance.
  - Harmonise Research and Development methodologies, approaches and techniques in the region and build a critical on livestock-based ARD
  - Promote technology generation and dissemination, and information exchange in the region
  - NARES are key players for a sustainable regional collaboration
  - Regional cooperation complement but does not replace Research for Development efforts at the national level

Regional cooperation

Tools/Mechanisms

- Memorandum of Agreement with NARES, regional and international institutions and ARI in the North
- Focal Points, National Coordinator
- Consultative meetings, National and Regional Workshops/Conferences/Dialogue
- Coordination of Regional donor-funded restricted R&D Projects, including Training

Regional Cooperation

- Tools/Mechanisms
  - Networking with the partners
  - Linking CG centres/ ARIs with grassroots beneficiaries (NARES, producers, processors): bringing innovations «down to earth» for end users
  - Providing policy advice to Regional Structures and Govt. Ministries and Departments
  - Leadership in sourcing regional funds for NARS/Centre's R & D programs (EU's EDF 7 & 8)

Centre‘s Impact and Achievements

Scientific excellence

- Putting trypanotolerance on the global R & D agenda
  - Multiple production (meat, milk, draught, manure)
  - Multiple parasite resistance of trypanotolerant livestock
  - Large scale conservation projects (e.g. GEF) planned projects
- Impressive timely publication record

Impact & Achievements

- Regional mandate and presence well established

  in The Gambia, Senegal, Guinea, Guinea Bissau, Sierra Leone, Liberia
- Research collaboration within and outside the Region (IARI ’s & Universities) well developed
- New partnerships and structures:
  - CORAF/WECARD, CILSS, MRU, OMVG
  - ILRI, CIRDES, ISRA, DNE/IRAG

Impacts & Achievements

International recognition

- Donors, International and regional organisations recognise ITC as:
  - Lead institute / focal point for identifying, conceiving and driving livestock-based R & D in sub-region
  - Foremost regional centre in implementing and executing with NARS partners R & D programs on livestock-based agriculture
  - Unique Centre for “hand-on“ training

•<u>Examples:</u>

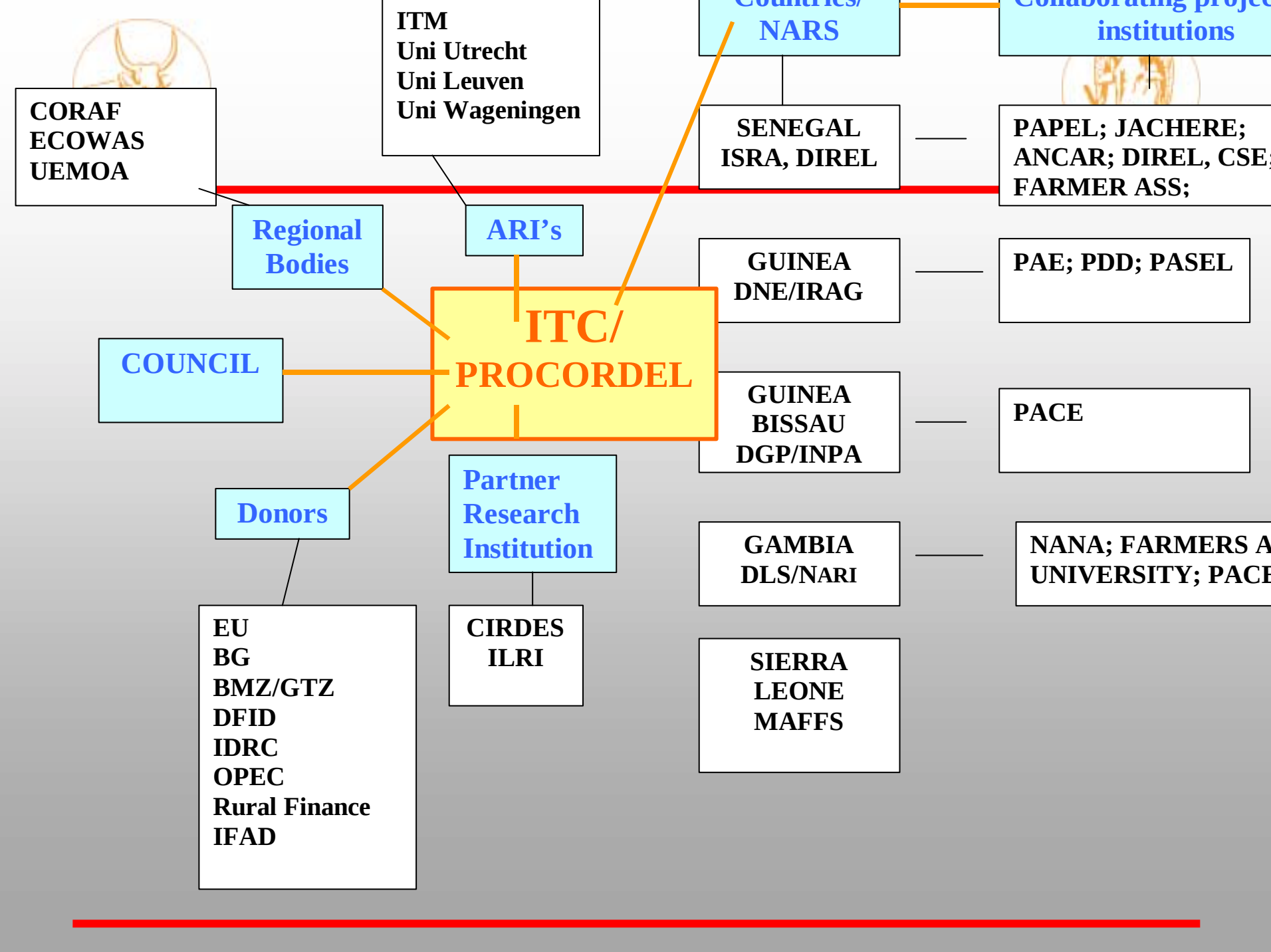
FAO identifies ITC as collaborating Centre on parasitic diseases and genetic improvement for Africa

CORAF/WECARD identifies ITC as base centre / centre of excellence for livestock improvement programs

A Success History

E.U.-funded Regional Project

- PROCORDEL


ITM
Uni Utrecht
Uni Leuven
Uni Wageningen
Countries/ NARS
Collaborating project institutions
CORAF
ECOWAS
UEMOA
SENEGAL
ISRA, DIREL
PAPEL; JACHERE;
ANCAR; DIREL, CSE;
FARMER ASS;
Regional Bodies
ARI's
GUINEA
DNE/IRAG
PAE; PDD; PASEL
ITC/
PROCORDEL
COUNCIL
GUINEA
BISSAU
DGP/INPA
PACE
Partner Research Institution
Donors
GAMBIA
DLS/NARI
NANA; FARMERS A
UNIVERSITY; PACH
EU
BG
BMZ/GTZ
DFID
IDRC
OPEC
Rural Finance
IFAD
CIRDES
ILRI
SIERRA
LEONE
MAFFS

Conclusions

- In developing and implementing Article 6 activities, ITC could serve as a partner that has already established solid networking mechanisms and collaborative linkages in the region
- ITC can play a role in the coordination of training programmes and the facilitation of information exchange

Thank you