DRAFT REPORT

SADC DIRECTORS OF AGRICULTURAL RESEARCH AND EXTENSION CONSULTATION MEETING

SALIENT ISSUES

Duneden Hotel, Johannesburg, South Africa
29 – 30 March 2007

SADC
FOOD AGRICULTURE AND NATURAL RESOURCES DIRECTORATE

RESEARCH AND DEVELOPMENT UNIT

Proposed Agenda
Consultative Meeting of Directors of Research and Extension

1. Adoption of the Agenda

2. Presentation of the FANR Directorate and of the main of activities of the Research and Development Unit - Broad agenda for the Technical Committee for Agricultural Research, Training and Development.

3. Presentation of the ICART project and the SADC MAPP project

4. Regional issues on Agricultural Research and Development – Situation Analysis of Agricultural Research, Training and Development

5. Knowledge and technology development and transfer

6. Coordination of Agricultural Research and Development in the SADC region – Institutional matters

7. Technical issues for Research and Development – Priorities and potentials for cooperation in the region and with other partners

8. The way forward for the integration of Research and Development

BACKGROUND INFORMATION

The ICART Project provided assistance (financial and logistical) to the FANR Directorate to organize a Regional Workshop for the SADC Directors of Research and Extension in Johannesburg from 26 to 27 March 2007. The overall goal of the meeting was to review the regional agricultural research and technology dissemination process, identify best-bet technologies for possible scaling up, and propose workable strategies for efficient management of agricultural research at regional level. The meeting had the following specific objectives:

1. To promote dialogue on Agricultural Research and Extension issues in SADC Member States.
2. To identify demands, practices and lessons learned on Agricultural Research, Extension and Development issues in the Region
3. To interchange experience and practices on Agricultural Research, Extension and Development among SADC MS.

DAY ONE

OPENING SESSION

Following welcoming statements by the Chairperson (Lesotho), the FANR Senior Programme Manager for Research & Development (Dr Molapong) also welcomed the participants on behalf of SADC Secretariat, FANR Directorate. The welcoming remarks were followed by the adoption of the agenda and general presentations on the FANR Directorate, and Research and Development Unit in particular.

KEY ISSUES FROM THE PRESENTATIONS

The following summary highlights key discussions, issues and conclusions from the presentations (provided in the Appendices)

FANR OVERVIEW AND MANDATE OF THE RESEARCH AND DEVELOPMENT UNIT

- The Directors noted the mandate of the Research and Development (R&D) Unit, and expressed concern on the current resource constraints. They recommended that more resources be allocated to the R&D Unit in line with its mandate; it should be immediately strengthened by at least one more person, and elevated since the current status is hampering the Unit to effectively serve Member States.

- The issue of the respective roles of the SRO and the FANR R&D Unit should be revisited. An inventory of what SACCAR did should provide relevant information to guide future planning of activities by the FANR R&D and the SRO in their new mandates.

- With regards to privatization of extension, access to resources by resource-poor farmers is a major issue to look at since they cannot afford to pay for the services.

- The evolution of the institutional set-up and financing mechanism for the dissemination of innovative technologies and methods is a major concern. The privatisation of extension services should consider the capacity of smallholders to access advisory services. Input suppliers should contribute to the research-extension-farmer linkages since input supplies make a significant impact on productivity

- Directors recommended that a separate meeting be organized to discuss the issues of priority setting for the implementation of the Dar-es-Salaam Declaration through research programmes and related dissemination programmes.

- Member States want to develop networking between themselves to implement the Dar-es-Salaam Declaration, and particularly the Research and Development component of the corresponding agenda.

- The Directors recommended that a holistic approach in the implementation of the CAADP pillars should be adopted, ensuring better coordination between Pillars 1, 2 and 3 with pillar 4, a cross-cutting pillar related to Research and Development.

- The Directors felt that there was an urgent need to strengthen the information dissemination (and transfer of appropriate technology) to farmers and other stakeholders, in particular to the input suppliers and service providers

- There is need to improve the capacity of other service providers in agriculture to support and eventually carry out transfer of technology.

- The Directors recommended that the SADC Secretariat should devise a system to charge administrative costs to R&D Projects so that the projects do not drain the already limited resources of the R&D Unit.

- Website of projects should be within the SADC Secretariat i.e. should be an integral part of FANR website

ICART PROJECT

- Research results should be shared among all MS; the research results after 3 years should be availed to all MS by translating in French & Portuguese so that the whole SADC Region can benefit.

- Future calls for agricultural research proposals should accept proposals in French and Portuguese also, otherwise non-English speaking countries will be disadvantaged as English is imposed on us.

- Whatever is being developed within these projects should be able to meet the broad objectives of not only Agric, but also FANR (not be isolated from FANR developments)

- Component "A" name should be changed to reflect operational activities

- Given that the individuals in the Project Steering committee are not representing all countries, but rather capacity in the main domain of the project, it is necessary to avail project information to the National Focal Points so that they can share the information within their respective countries.

SADC-MAPP PROJECT

- Directors of Research recommended that there should be greater involvement of Member States in the formulation of MAPP

- Given the commonalities between ICART (a running project) and MAPP (a project under preparation), the Directors recommended that the two projects should align their activities.

- There is need for a holistic approach to project implementation;

- MAPP should not concentrate on productivity issues alone, but also on marketing and value addition

- MAPP Project Reviews should be conducted at intervals of 5 years since this is a long-term project

- Directors have taken note that there are a number of technology transfer models available which would require evaluation, adaptation for use in the region and proper monitoring

SITUATION ANALYSIS OF RESEARCH INSTITUTIONS, PROGRAMMES, PARTNERSHIPS AND OUTPUTS - ICART

- Directors recommended the use of local consultants in conducting situation analyses of research institutions, programmes, partnerships and outputs, and in complementing information gathered so far.

- Resources allocated to the situation analysis should be revisited to enable realistic achievement of main objectives of the exercise

- Factors pertinent to improving productivity are not adequately addressed in the objectives of the MAPP project; therefore the objectives should be revisited.

- The Situation Analysis should cover regional programs by CGIAR Centres such as CIMMYT, ICRISAT, ICRAF that have a lot of information that can enrich the ICART and SADC MAPP Projects

- Results of the Situation Analysis should assist Directors and other Decision Makers to remodel the system of delivery of research and extension in order to deliver tangible outputs through implementation of the Dar-Es-Salaam Declaration

- The review of Institutional capacity in agricultural research should identify the strengths and weaknesses, and make proposals for capacity building of institutions prepared for the exercise, and with capacity to address the problems

- Directors recommended that the information gathered so far, should be analysed further

INVENTORY OF TECHNOLOGIES AND TECHNICAL NEEDS – MAPP

- As the MAPP project will embark on the inventory of promising technologies available in the region and technical needs for further development of innovation, the Directors noted that there was a big project on the collection of Indigenous Knowledge in the Region which should be referred to.

DAY TWO

REGIONAL ISSUES ON AGRICULTURAL RESEARCH, TRAINING AND DEVELOPMENT

REGIONAL INSTITUTIONAL ISSUES

- Directors wanted to know whether the consultant who worked on the SRO issue had looked at the rationale and conditions for the discontinuation of SACCAR. The response was that the consultant didn't go into the reasons why SACCAR was disbanded because it wasn't in his ToR. The Directors recommended that lessons learnt from SACCAR should be considered in the next study.

- Directors needed clarification on the criteria used to choose FARA as the mentor of the SRO in some options. It was noted that FARA was only quoted as an example; in as far as it has the experience of dealing with existing SROs. The Directors recommended further development on the mentoring issue.

- Directors noted that the SRO options 3 and 4 did not include MoUs with the SADC Secretariat, and as such, they recommended that there should be MoU for all options, otherwise commitments to implement the SADC policies will be a problem. After deliberations, the Directors opted for SRO Option 2 because it has the advantage of embracing political commitment from Member States.

OPEN FORUM ON ISSUES IN AGRICULTURAL RESEARCH AND EXTENSION

- It was recommended that the SADC secretariat should put a system in place to share information that impacts on research and development agenda in the Region. Relevant information from Member States should be shared throughout the region.

- Directors recommended that the flow of information should be a two-way process: from Secretariat to MS and vice versa so that everyone is kept abreast of new developments

- SADC/FANR should empower MS to bring their national databases to the Regional unit for information sharing

- Directors recommended that agricultural research and development should be market-driven; cover in a holistic manner the production chain, and advocate for value addition. The private sector should be engaged to participate in the process of empowering smallholder farmers.

- Re-establishment of the SADC Bio-technology and Bio-safety technical committee should be given priority. The SADC Secretariat needs to articulate the position regarding GMO issues as some countries like DRC are hoping that biotechnology can help combat cassava mosaic virus and other major viruses on banana.

- There is an urgent need to revitalize technical committees and corresponding information networks on basic staple foods. Bio-fuel may be addressed by a specific scientific committee as bio-fuel issues have become very important in the Region (Zambia, Swaziland, Zimbabwe); therefore sharing information on bio-fuels will be very important.

- There is an urgent need to revitalize technical committees on natural resource management. Given that the Congo forests play a major role in regulating the climate in SADC region, the Directors recommended that SADC comes up with a recommendation to protect Congo's forest areas, which should be included in Dar-es-Salaam declaration. Other forest issues (deforestation, charcoal production) from MS need to be included in Dar-es-Salaam declaration also.

- There is need to set up a technical committees and corresponding information networks on agricultural research for irrigation and water management.

- Directors expressed concern on the lack of networking on advisory services. It was noted that the extension network issue will be addressed through the SADC MAPP component 3, sub-component 3.2 "Scaling -out Good Practices and Knowledge Sharing on Advisory Services". There is need to create a sub-regional extension network in line with the Africa-wide SSANAAS.

- The Directors requested that further discussions take place to establish other Technical Committees, particularly in livestock and socio-economic research.

- Directors stressed that research on food security issues is very important in the region. To that effect, DRC delegates were requesting for feedback from SADC Secretariat on the results of the food security study that was commissioned sometime ago by FAO.

- Directors agreed to a proposal by FANR to establish a National Committee in every MS comprising of agricultural research and extension stakeholders under the leadership of the Directors of Agricultural Research and Extension.

WAY FORWARD

- Directors recommended that the Technical Committee for Agricultural Research and Training should be re-established to coordinate all ad-hoc Committees on technical issues mentioned in this report. This Technical Committee will be comprised of researchers, extension specialists, farmers, and the private sector. It was agreed that this committee should meet at least once a year, and that both the Directors of Research and Extension should attend. The SADC Secretariat was asked to draft the ToRs of the committee and circulate the draft ToRs for comments by MS.

- It was agreed that the Directors should send names of prospective private sector and farmer organisations representatives to SADC Secretariat not later than April 15th, 2007. Communications would be directed to kmolapong@sadc.int

AOB

- Following a presentation made by South Africa on the organisation of the 4th FARA General Assembly & African Agricultural Science Week, it was recommended that FARA should try to support as many Directors from SADC as possible during the FARA General Assembly to be held in Johannesburg, 10 – 16 June 2007. Brief information on the event is provided below:

SADC FANR MEETING OF DIRECTORS OF RESEARCH/EXTENSION
29 - 30 MARCH 2007
JOHANNESBURG

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APPENDICES

Appendix 1: Annotated Agenda for the Meeting

Appendix 2: Short versions of the Annexes to the Annotated Agenda

Appendix 3: Presentations made at the Meeting

Appendix 1: Annotated Agenda for the Meeting

DRAFT ANNOTATED AGENDA

CONSULTATIVE MEETING OF DIRECTORS OF RESEARCH AND EXTENSION

29-30 March 2007

Johannesburg, South Africa

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RESEARCH AND DEVELOPMENT UNIT

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3. Presentation of the ICART project and the SADC MAPP project

4. Regional issues on Agricultural Research and Development – **Situation Analysis of Agricultural Research, Training and Development**

5. Knowledge and technology development and transfer

6. Coordination of Agricultural Research and Development in the SADC region – Institutional matters

7. Technical issues for Research and Development – Priorities and potentials for cooperation in the region and with other partners

8. The way forward for the integration of Research and Development

1. Adoption of the agenda

The Directors of Research and the Directors of Extension are invited to consider and adopt the Agenda presented by the FANR Directorate.

2. Presentation of the FANR Directorate and of the main activities of the Research and Development Unit - Broad agenda for the Technical Committee for Agricultural Research, Training and Development.

2.1 The SADC Food, Agriculture and Natural Resource Directorate

The SADC Food, Agriculture and Natural Resources Directorate (FANR) is one of the four Directorates of the SADC Secretariat.

2.1.1. Mission

Its mission is to provide strategic expertise and coordinate the harmonization of policies and strategies to accelerate regional integration and sustainable development.

2.1.2. Objectives

The strategic objective of the Directorate is to develop, promote, coordinate and facilitate harmonization of policies and programs to increase agricultural and natural resources production and productivity and to promote trade, food security and economic development in the region on a sustainable basis.

2.13. Specific Functions

The specific functions of the Directorate are as follows:

- Development, promotion and facilitation of harmonization of agricultural policies; taking into account gender equity in development strategies and programmes;
- Ensuring sustainable food security policies and programs;
- Development, promotion and harmonization of biodiversity, sanitary, crop and animal husbandry policies;
- Strengthening regional capacity for agricultural research;
- Development, promotion and harmonization pf policies and programs aimed at effective and sustainable utilization of natural resources such as fisheries, forestry and wildlife; and
- Development and harmonization of sound environmental management policies;

2.1.4. Priority areas

Priority areas are as follows:
- Ensuring food availability
- Ensuring access to food
- Promoting improved food safety and nutritional value of food
- Ensuring disaster preparedness and awareness for food security
- Strengthening institutional frameworks and capacity building programmes

2.1.5. Regional priorities are coordinated through the following technical units:

- Agricultural Information Management Systems, which includes Early Warning System, Remote Sensing, Drought Monitoring Systems and the Regional Food Reserve
- Crop Development, which includes Seed Security, Plant Protection, Food Safety and Agricultural Trade
- Livestock Development
- Agricultural and Natural Resources Research & Development; and
- Natural Resources Management, comprising Fisheries, Forestry and Wildlife;
- Environment and Sustainable Development

2.2 The Regional Indicative Strategic Development Plan (RISDP)

(see the RISDP Document in Annex 1)

The Directors of Research and the Directors of Extension are informed that the SADC Council (Luanda, March 2003) adopted the Regional Indicative Strategic Plan (RISDP) as a working document.

The Directors of Research and the Directors of Extension are invited to take note of the final version of the RISDP document and, in particular, the following points detailed in the attached extracts of the RISDP document:

- Section 3.4.2: Sustainable Food Security
- Section 3.4.3: Agricultural Research and Training
- Section 3.6: Cross- Cutting Issues

This document guides the activities of the Research and Development Unit in FANR.

*Action to be taken***:**

Changes in the mandate, paradigms, methodologies and partnerships of the Secretariat for supporting the Agricultural Research and Training Unit are necessary. The resources allocated to the activities of the Unit should match the requirements and expected outputs. Through dialogue with the Member States and with the ICPs, and with the support of specialized

international agencies (FAO, World Bank, FARA), opportunities will be identified to enable the Unit to fulfil its mandate.

Strengthening cooperation with the Member States will be necessary. The re-establishment of Technical Committees linking the FANR Directorate with its stakeholders in R&D should allow for the development and implementation of changes agreed upon by all partners. Cooperation with the Directors of Research and Directors of Extension will be crucial. This meeting should therefore be the first step for implementing a shared agenda.

Directors raised the concern about the capacity of the Unit and that it immediately be strengthened by at least one more person and that the issue of the SRO be pursued.

The Directors noted the mandate of the AR&D Unit and noted the current resources constraint. The Directors recommended that more resources be allocated to the AR&D Unit and that the composition of the Technical Committee be expanded to include the Directors of Extension and Development Organisations (numbers?) that the Terms of Reference be reviewed accordingly (refer to DES Declaration)

The Directors recommended that the mandate of AR&D Unit be clarified (Development to feature?)

2.3 The Dar es Salaam Declaration for Agriculture

(see Abstract of the Dar es Salaam Document in Annex 2)

The Directors of Research and the Directors of Extension are informed that the SADC Council in May 2004 adopted the Dar es Salaam Declaration for Agriculture as a working document. The FANR Directorate is in charge of the implementation of the program of action of this Declaration.

The Directors of Research and the Directors of Extension are requested to take cognizance of extracts of the Dar es Salaam Declaration, in particular, the program of action as given in Annex 2 and Annex 3.

Action to be taken:

The Research and development Unit is currently compiling information on the budgets allocated to agricultural research, agricultural training and extension in the Member States from the early 1980s, and to relate these budgets to agricultural GDP. A situation analysis of the human resources capacity would also be carried out. The Research and Development Unit is reviewing the policies and strategies for agricultural research, training and extension and their relationships with the rural development policies and agricultural production policies in the Member States. In addition, the Unit is planning to evaluate ongoing agricultural research programs, agricultural advisory services and training in the Member States These initiatives are being carried out in order to contribute to the development of regional policies and strategies.

The Directors concur that the budget has to be immediately increased and that the structure and output from Research institutions be reviewed

Short term objectives

The Declaration establishes a comprehensive list of strategies and objectives on the short term which are all of relevant to agricultural research, training and extension.

- development of inputs use in agriculture
- mechanization and motorization in agriculture
- access to land and natural resources
- improvement of the availability and productivity of farm labour
- development of crops, livestock and fisheries production
- development of non conventional productions
- development of water management and irrigation
- facilitating market access
- facilitate private sector development in agriculture
- facilitate human resource development in agriculture and food security

Action to be taken

The short term objectives of the Dar es Salaam Declaration should guide the program for R&D of FANR. The activities proposed in chapter 7 of the Declaration should also guide the cooperation between research, and extension and other partners in the region.

Directors suggested that the short-term objectives be prioritised, based on a harmonised methodology/ set of criteria.

Directors requested that a separate meeting be organised to discuss the issue of priority setting.

2.4 ***The Research and Development Unit – Mandate, status and program of work***

Since the Technical Committee meeting for Agricultural Research and Training held in Pretoria, South Africa, in June 2003, the Research and Development Unit (formerly Research & Training Unit) has not had opportunity to interact with the Directors of Research and Directors of Extension in SADC.

2.4.1 Mandate of the FANR Research & Development Unit

The Directors of Research and the Directors of Agriculture are informed that according to NEPAD and the RISDP and as detailed by the Dar es Salaam Declaration, the overall goal of Agricultural Research in the region is to contribute to poverty alleviation and sustainable growth through agricultural and natural resource research and that the development of training and information of all stakeholders in agriculture should be efficiently linked to research activities. The objective of the Agricultural Research and Development unit as outlined in the

SADC Regional Indicative Strategic Development Plan (RISDP) is to promote partnerships in the area of agricultural research and development, improve regional research and training co-ordination and integration, improve the information and communication system and review the institutional framework. The agricultural research and development unit in collaboration with other research institutions has thus the challenge to develop new technologies so that the region can compete in the global economy as well as to meet market demands and contribute to food security. Agricultural Research has to provide agricultural innovations that will increase crop and livestock production.

Action to be taken:

The perception of the required contribution of agricultural research to rural development and to the progress in agriculture is evolving in relation with the global progress of Research and Development programs and outputs. Therefore, discussions with the Directors of Research and Directors of Extension will provide insights for change.

2.4.2 Status of the FANR Research & Development Unit

Since SACCAR was disbanded end of 2002, the FANR Directorate has made the Research and Development Unit a "platform" for regional cooperation on agricultural Research and Training. This mandate was extended in 2005 to Agricultural Research & Development, which encompasses the dissemination of innovations.

Action to be taken:

The Directors of Research and the Directors of Extension are invited to note that the Research and Development Unit is staffed with one senior officer only. The Government of France is providing a Technical Adviser to the FANR Directorate for Agricultural Research and Training.

2.4.3 Ongoing and upcoming donor supported projects supervised by the FANR Research & Development Unit

Coordination of agricultural research is done through regional research and development projects in collaboration with regional research and development institutions.

On-going Programmes (ranked by date of initiation)

1. The SADC Plant Genetic Resources Centre (SPGRC), focusing on conservation of crop species and varieties at national and regional level. Funded by the SADC Member States and Nordic countries-
2. Land and Water Management applied Research Programme, focusing on Training courses, seminars and conferences. Funded by the EU

3. Competitive Grant Fund for Innovative and Regional Collaborative Projects in support of the small-scale Farmer Development (FIRCOP). – Competitive Research Grant. Funded by the Government of France

4. Implementation and Coordination of Agricultural Research in the SADC Region (ICART) – Competitive Research grant, Fellowships grant, support to research networks, support to ICT. Funded by EU

5. Sub Saharan Africa Challenge Program – section Zimbabwe-Malawi-Mozambique (SSA-CP-ZMM). Competitive Research Grant. Funded by the CGIAR

Programmes under Development

1. SADC Multi Country Agricultural Productivity Programme (SADC MAPP). Under preparation with a Japanese grant managed by the World Bank

2. FARA Regional Agricultural Information Learning Systems (FARA RAILS)
3. Improve information and learning exchange

4. Dissemination of New Agricultural Technologies in Africa (DONATA). A FARA Program for out- scaling best bet technologies

5. SCARDA/ BASIC. A FARA Program on capacity building

6. Promotion of science and technology for agricultural development. AfDB funded, focusing on effective and efficient access, sharing and dissemination of proven new technologies for agricultural growth (funds partially for DONATA)

2.4 Broad agenda for the Technical Committee for Agricultural Research, Training and Extension

The R&D Unit has extremely limited staff resource and limited budget. Presently, the Unit is supported by donor funded regional projects to implement its agenda. However, projects are short term and can only deal with specific aspects of the agenda for the region. Regional projects may not achieve much if they are not anchored on national programs and driven by the end users in the Member States.

Action to be taken:

The FANR Directorate suggests to the Directors of Research and to the Directors of Extension that the following agenda would be taken into consideration by the Technical Committee for Agricultural Research & Training for further meetings:

- Building the integration and development of R&D in SADC
- Setting the vision and the strategies
- Application of the Dar es Salaam Declaration – financing R&D

- Setting priorities for research and development
- Reinforcing participation from farmer organizations and contributions from Civil Society and the private sector

The Directors felt that was an urgent need to strengthen information dissemination (and transfer of appropriate technology) to farmers and other stakeholders, in particular to the input suppliers and service providers.
The service providers capacity also needs to be built to support and eventually carry out the transfer of technology

3. Presentation of the ICART project and the SADC MAPP project

4. Regional issues on Agricultural Research and Development – Situation Analysis of Agricultural Research, Training and Development

The functions of the FANR Research and Development Unit relies on information about activities in the sector and the active participation all major stakeholders in the agricultural development process, namely, those from agricultural research, extension, agricultural education, farmer organisations, agricultural NGOs and the private sector. Furthermore, projects implemented under the supervision of the Unit can improve the effectiveness of their actions through refined information on their areas of interest. However, the availability of such information has weakened at the level of the Unit over the past few years, due to its limited human resources and capacity to engage in a dialogue with stakeholders in the region. This situation is being remedied through the intervention of projects with activities which include strengthening the capacity of the SADC Secretariat and improving information and communication management.

Through the ICART project, the FANR has started the process of a situation analysis of Agricultural Research and Training in the region. An initial stage in the process was undertaken in all 14 SADC Member States between January and February 2007, with the assistance of consultants visiting Member States to meet with stakeholders following itineraries set by the ICART National Focal points. The limited time in each Member State only provided an opportunity for a rapid overview, but also allowed the gathering of basic information that will be fed into a regional information system on agricultural research and training.

The data entry process will be carried out until the third quarter of 2007. However, the collaboration of the Member States is being requested to obtain as comprehensive a data set about the functioning of National Agricultural Research Systems (NARS) in the region as possible by that time. It is currently envisaged that the consultants will return towards the end of the year to further analyse the information and hold a workshop with regional stakeholders. After the workshop, the consultants will assist the ICART project devise a strategy for support to regional research networks. Proposals on the development of the country reports through a consultative process will be presented, for discussion.

From a networking perspective, preliminary findings of the situation analysis reveal a number of common issues across topics or research status that may be amenable to being addressed through improved networking. These include:

- Coordination of activity planning and management of research agendas to optimise the benefits of externally funded networks that currently drive national research agendas where national operating budgets are very limited.;
- Involvement of small scale farmers and multidisciplinary teams in planning research with a livelihoods perspective;
- Improved knowledge by scientists within countries and across countries of work being done elsewhere;
- Relations between research and the wider farmer extension systems being developed in many countries;
- Exchange visits of young scientists to make maximum use of the few remaining experienced national researchers;
- Develop capacity for sourcing alternative funding for research.

As part of the continuing process of the situation analysis and in order to build up on the process which ICART has started, FANR is proposing to carry out further situation analyses as part of the preparation of the SADC MAPP. These situation analyses will provide details of smallholder farmers' organisations, additional research and extension organisations including NGOs, educational institutions, private sector and agribusiness linkages; communications methods and tools; and, promising technologies including indigenous knowledge that can be promoted and scaled out.

The proposed methodology for the implementation of the situation analysis to be carried out in the context of the SADC MAPP, will be different from the approach used under ICART. In this case, national consultants will be recruited in each Member State. The National Consultant working in consultation with the SADC MAPP Contact Person and the Core Team will consult as many stakeholders as possible by visiting and discussing with them. At the end of the individual consultations a national workshop will be held to consolidate the findings. It is hoped that during the workshop participants/stakeholders will explore the most promising national activities that can be scaled out to one or more countries within SADC. The workshop participants will review outstanding examples of 'best practice' in their own country and develop outline proposals as to how these might be scaled out elsewhere in the region. Scaling out does not need to involve all SADC countries but must show the potential for engaging a realistic and appropriate partner (or partners) in one or more collaborating countries. Regional consultants will be recruited to synthesize the reports produced by each national consultant to come up with a regional report, which will be used to fine tune the components in SADC MAPP.

The findings from the combined outputs of all national workshops will form the basis for identifying initial entry points for SADC MAPP components. SADC MAPP is envisaging to scale out to other countries in the region examples of 'best practice' within the six core component areas. The scaling out can be done through block funds (which may be used to

engage in study tours, workshops, meetings, start up activities, etc), or various types of funding mechanisms including competitive grants. Suggestions on the appropriate funding mechanisms are expected to come from the national consultations and the situation analysis.

3.2. Expectations (Action to be Taken):

a). The Directors of Research and Extension are requested to have an input on the methodology that has been proposed for the implementation of the situation analysis.

b). The Directors of Research and Extension are requested to be fully involved in assessing needs and prioritising network activities for the Region. ICART will call for a regional workshop to develop a networking strategy.

c). The Directors of Research and Extensions are requested to take note of the planned Institutional analysis consultancies to be conducted using national consultants under SADC MAPP

d). Once the Situation Analysis Reports have been circulated to member states, the Directors of Research and Extension are requested to facilitate feedback to the respective country reports by all relevant stakeholders. The final country reports are expected to be endorsed by the relevant authorities.

5. Knowledge and technology development and transfer

5.1. Emerging concepts in Technology development, dissemination and uptake

Farmer advisory services, more traditionally known as agricultural extension services, operate within a broader knowledge system comprised of agricultural research, agricultural education and farmers. For much of the past century, the traditional model of technology generation and transfer to smallholder farmers in Africa was seen as a one-way process where researchers generated technologies, passed them to extension staff who in turn extended them to farmers. This model was based on a "top-down" approach of information flow from researchers to extension and then to the target client.

The last several decades have seen significant change to approaches to agricultural extension, including, but not limited to, institutional, organizational, managerial and methodological dimensions of extension programs. Farmers now are encouraged to participate directly and positively to their own learning opportunities both to develop and then to spread knowledge and technology. In addition to providing space for technical learning and analytical skills and practice, these approaches provide opportunities for social learning, building organizational capacity for collective action (Figure 1).

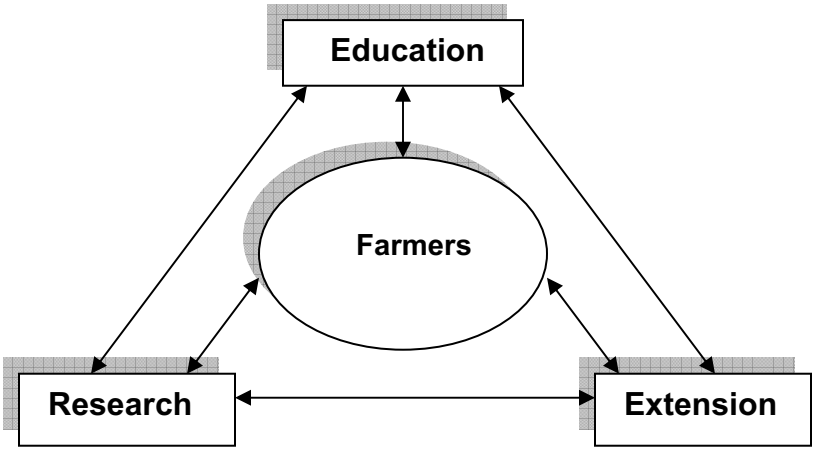

Figure 1: Farmer centered Agricultural Research, Extension and education Linkages

In the modern vision of research and farmer advisory services, there is a two-way flow of information between each of the major subsystems: research, extension, education, and farmers. This approach aims at involving all players in all stages of the agricultural research process. This model, engages farmers in ***experimentation and investigation rather than demonstrating 'approved' options***. This experimentation empowers farmers through knowledge generation and sharing. Farmers investigate a set of technologies and are helped to select the best technology combinations for their conditions. This allows farmers to experiment with various technologies from different providers, and helps them share the consequent knowledge with their fellow farmers. Previous experience has shown that this experimentation is quickly followed by diversification as farmers expand their capacity to diversify into other production activities. Such farmer-led, demand-driven agricultural innovation systems (research) and advisory services create social spaces for learning, spaces in which farmers can be listened to and influence solutions to their problems. However, this will require a radically different way of 'doing business' by farmers, researchers, training institutions and advisory services.

5.2. Expectations (Action to be Taken):

a). The Directors of Research and Extension are requested to engage a consultation within their respective countries and identify needs for training as a way to improve the linkages among farmers, research and extension and see how this can be expanded at a regional level.

b). The Directors of Research and Extension are asked to take note of the need for stronger Research and Extension linkages. Where necessary the Directors of Research and Extension are asked to communicate with FANR on training needs and prioritise training needs that may enhance the linkages if research and extension within country and regionally.

6. Coordination of Agricultural Research and Development in the Region – Institutional Matters

6.1. The need of a sub regional organisation (SRO)

The need of a sub regional organisation (SRO) for the SADC region has been recognised for some time and several discussions have been held over the last three years. In view of this, support to the establishment of an SRO will be an important activity for institutional capacity building under SADC MAPP, a programme which will be implemented in the region for a period of 15 years. In January 2007 a study was carried out to review the options and opportunities for an SRO. The study came up with a number of options and recommendations. The findings of that study will be presented for discussion to the Directors' meeting to solicit their views as to the most appropriate option and the best way forward on the SRO issue. When established, the SRO will be responsible for implementing the agricultural research and development (R&D) policies of SADC and for coordinating all R&D projects, programmes and activities in the region.

6.2. Expectations (Action to be Taken):

The Directors of Research and Extension are requested to discuss the SRO options and provide their views and recommend what they see as the appropriate option.

7 Technical issues for Research and Development – Priorities and potential for cooperation in the region and with other partners

The objectives enlisted in the Dar es Salaam Declaration classified into five categories of sub-objectives:

i. develop policies, regulations and a conducive environment,
ii. develop infrastructures and facilities,
iii. develop services and partnership,
iv. promote innovative technologies and decision making processes,
v. empower people through information and education and the mitigation of risks.

The Annex 3 to the Annotated Agenda provides matters for consideration of the main issues.

Action to be taken

The document "Application of the Dar es Salaam Declaration for setting the Regional SADC Program on Agricultural Research & Development" will be submitted to the Directors of Research and to the Directors of Extension.

All research and development actions in the Dar es Salaam Declaration are to be implemented by the SADC Secretariat.

8. The way forward for the integration of Research and Development in SADC

The SADC Secretariat requests that the TCART should identify what should be done at regional level and implemented by the SADC Secretariat for supporting national efforts at regional level. Funding for the coordination of the regional programs should be identified

Action to be taken:

Re-establishing the Technical Committee for Agricultural Research, Training (TCART) in Southern Africa and enlarge it to Development. This needs action for determining:

- Composition of the Committee and its TORs
- Frequency of meetings
- Sharing programs and responsibilities for outputs
- Reporting on the present institutional set up of institutions and programs and capacities for the agenda of the Dar es Salaam Declaration
- Reporting national plans for addressing through research, training and extension the Dar es Salaam Declaration

Annex 1 – Extracts of the RISDP document

3 .4.2 - Sustainable Food Security

3.4.2.1 – Review of the current Strategies and Policies

The Food Security Policy in SADC is to ensure that all people have access to an adequate diet to lead an active an normal life. Currently, the region has adopted three strategies to achieve the Food Security policy as contained into the Food Security Framework document, approved by Council in 1997. The three strategies are:

i) Improving food availability
ii) Improving access to food
iii) Improving nutrition

On the issue of food availability, Member States are required to promote agricultural production and productivity, take measures that increase competitiveness and promote trade. Member States are also urged to promote the sustainable use of natural resources.

Regarding improving access to food, Member States are encouraged to adopt policies which will generate the maximum employment gains and incomes, introduce measures that improve income stability and equity; and develop safety nets (such as food for work, cash for work, and targeted distribution of inputs or food) for vulnerable groups. Most of these measures require public, private and NGO partnerships.

Regarding improved nutrition, Member States are urged to adopt strategies that improve nutritional value of food, minimize food losses, particularly for the resource poor, and to address food safety.

3.4.2.2 – Evaluation of current Policies and Strategies

Food Security policies and strategies have addressed the SADC strategic priority to develop an effective disaster preparedness and management mechanism by implementing programs and projects aimed at early detection, early warning and mitigating the disaster effects. (.) But other suggested programs aimed at promoting food supply and availability, irrigation development and agricultural trade facilitation have not received much attention and resources. (.) Within FANR, there are several strategies on capacity building; however, none of these is addressing agri-business, agro-processing and trade in agricultural products.

The absence of a binding legal instrument on food security and agricultural development in general is a major weakness in the food security strategy. The current food crisis in the region has increased the need for greater cooperation in this area that would cover such issues as genetically modified organisms (GMOs), sanitary and phytosanitary (SPS) measures and trade.

3. 4.2.3 – Challenges in Current Policies and Strategies

- Absence of a regional food reserve facility and market development and over-dependence on rain-fed agriculture
- Promoting private trading in agricultural products
- Improving rural transport infrastructure; and
- Promoting agricultural production and productivity through creating an enabling policy environment for agricultural production, improving access to land and credit and enhancing technology generation and transfer.

3.4.3. Agricultural Research and Training

3.4.3.1 – Review of current Policies and Strategies

The overall goal of agricultural Research and Training is to contribute to Poverty Alleviation and sustainable growth through agricultural and natural resources research and training in the region. The specific objectives are to promote partnerships in the area of agricultural research and training, improve regional research and training co-ordination and integration, improve then information and communication system, and to review the institutional framework. The strategies for attaining these objectives focus on three broad areas. These areas are strengthening human resources capacity; strengthening regional research and training capacity; co-ordination mechanisms for related policy issues, partnerships and stakeholders' ownership of collaborative research programs; and facilitating exchange of information and dissemination of research results.

3.4.3.2 – Evaluation of current Policies and Strategies

It is apparent that the policies and strategies of Agricultural Research and Training address the following strategic priorities: the development of Science and Technology, Research and Development, the development, utilization and management of human resources, the development of agriculture and the sustainable utilization of natural resource; and the development of measures to alleviate poverty with a view to its ultimate eradication. The question is how effectively these have met the strategic priorities.

Agricultural Research and Training has provided a platform for closer interaction and collaboration between National Agricultural Research Systems (NARS) and scientists within and outside the region. In addition, the overall research capacity has neen strengthened through regional interventions focused on training and networking. A key latent achievement has been the provision of an environment for researchers to remain on the knowledge and technology frontiers, and increased efficiency of the utilization of resources for agricultural research.

However, the success of regional agricultural research interventions has directly depended on the performance of the NARS that has been constrained by limited capacity, especially in terms of size, funding and human resources, and weak linkages with local and international partners institutions.

The expansion of the mandate of Agricultural Research and Training from the original focus on coordinating research on food crops to research in agriculture and natural resources, and the coordination of advanced professional training in agriculture, has

not been matched by increases in research activities in these areas, and there has not been clear articulation of Agricultural Research and Training strategies in the same. As a result, Agricultural Research and Training has nt been visible nin initiating research on indigenous technical knowledge or guided research on emerging issues, such as biotechnology and intellectual property rights in indigenous flora and fauna. Furthermore, whereas Agricultural Research and Training has made progress in its crop research project and the gene bank, there has been limited promotion of research in indigenous vegetables, which play a significant role in the diets of rural people, and in floriculture, which is a major foreign exchange earner in some countries.

3.4.3.3 – Challenges in current Policies and Strategies

- Lack of market oriented smallholder production system where research is market led, demand driven and follows the commodity chain approach;
- Poor Research – Extension – Farmers linkages, amelioration of which would improve the transfer and adoption of technology;
- Need for policies and strategies to offset the high rate of natural resource degradation, focusing on soil, water and biodiversity;
- Focusing research on soil fertility improvements, soil and water management, development of irrigation, promotion of integrated livestock- wildlife – crop production systems, and development of drought mitigation strategies;
- Strengthening the capacities of institutions and farmers' organizations to support agricultural production systems;
- Information and communication for rural development, and
- Integration of a gender perspective in agricultural research and training

3.6. Cross- Cutting Issues

3.6.2 – Science and Technology

3.6.2.1 – Overview

As a region destined to deeper integration and the ultimate creation of a common market, it is imperative for SADC to cooperate on science and technology (S&T). Scientific and technological innovation could form the basis for socio-economic development in the region. Cooperation is essential in dealing with trans-boundary issues such as environmental management, which often requires regional solutions that are based on science and technology. Collaboration and networking in addressing issues of science, technology and innovation are requirements at national, regional and global levels. SADC Member States can maximize efficiency and effectiveness of their investments in research and technology development through regional cooperation.

3.6.2.2 – Review of current policies and strategies

The policies and strategies for regional cooperation in science and technology are not yet in place. (.) The report of a study [commissioned by SADC] published in 1994 produced the following findings, some of which are still relevant today:

- SADC economies are dominated by agriculture and mining and limited manufacturing which depend on imported technologies.

- Expenditure on research and technology development (R&D) is way below 1% of GDP throughout the region.
- Governments in the region offer little or no incentives to the private sector to encourage research and development activities.
- There are shortages in scientific and technological human resource including artisans, technicians, engineers and scientists, which are exacerbated by the brain drain due to more attractive research conditions in the developed countries.
- Education in research and technology is biased against girls and the performances of schools are not encouraging because of low enrolment and progression rates, poorly trained teachers and inappropriate curricula.
- There are gaps in legislation to protect intellectual property rights.
- There is very little cooperation in science and technology between countries in the region

3.6.2.3 – Evaluation of Science and Technology Policies and Strategies

(.) An analysis of the current situation reveals the lack of policies and strategies and the absence of an institutional framework as the main factor preventing meaningful cooperation in Science and Technology within SADC. (.)

3.6.2.3 – Challenges for Policies and Strategies

There is a need for an institutional framework for regional integration and cooperation in science and technology, which would include a legal instrument, well articulated policies and strategies and an organizational infrastructure to drive regional cooperation in science and technology. (.)

The science and technology function of the SADC Secretariat will also prioritize the issue of building science and technology networks to promote intra and interregional cooperation and linkages. This will require the necessary institutional arrangements and resources.

Annex 2 – Extracts of the Dar es Salaam Declaration

The Dar es Salaam Declaration elaborates the agenda for the regional agricultural research as far as all enlisted priorities should be supported upstream by research and evaluated downstream by research as well.

- **Medium to long term strategies**

  - ***Sustainable Agricultural Financing and Investment***

- Member States should progressively increase budgetary allocations for Agriculture to at least 10% of their national total budgets within a period of 5 years as recommended by the African Union Maputo Declaration on Agriculture and Food Security of July 2003.
- Member States should mobilize finances for agro-processing and development of rural infrastructure.
- Member States should up-scale the establishment and use of rural financial intermediaries such as savings and credit schemes, rural mobile banks, among others.
- The region should consider setting up an agricultural Development Bank/ Facility that should be financed through private equity, Member States Development Finance Institutions (DFIs) and International Finance Institutions.

  - ***Enhancing Food Production, Productivity and the overall availability***

- Promotion of the conservation, management and utilization of plant and animal genetic resources in line with the Convention on Biological Diversity and International Treaty on Plant and Animal Genetic Resources
- Promotion of demand driven, client oriented, participatory agricultural research and extension development focusing on crop varieties and animal breeds that are tolerant and perform better in the prevailing physical environment.
- Enhancing gender mainstream in particular, repealing discriminatory laws and customary practices on finance, credit and land access and promote technologies that are gender sensitive.

  - ***Sustainable utilization of Natural Resources***

- Member States should effectively manage catchment areas, forests and wetlands;
- Member States should enhance the management of marine resources and inland fish stocks;
- Member States should develop policies and land use plans that conserve and optimize the utilization of soils, forests, wildlife and water resources;
- Member States should develop national action plans which aim at combat desertification, controlling wild fires, mitigating drought and floods through land conservation, afforestation and water harvesting;
- Member States should increase investments in processing and packaging of natural products in order to add value to those products;

- Member States should develop regional information systems to monitor deforestation and surveillance on wildlife and fish resource. In this regard, there is a need to strengthen and harmonize natural resources management policies and programs

- ***Improving Access to Safe and Nutritious Food***

- Member States should strengthen the laws and regulations governing trade in agriculture through the implementation of the SADC Trade Protocol;
- Member States should promote commercially viable market access for strategic agricultural commodities originating from the region including those at the higher end of the processing chain;
- Member States should facilitate access to food at household level through promotion of non- farming agricultural income generating activities and implementation of safety nets;
- Member States should promote appropriate food processing, storage and transport technologies that reduce pre and post harvest losses and ensure food quality.

- ***Strengthening Disaster Preparation***

- Member States should strengthen their Early Warning Systems and Vulnerability Monitoring capabilities;
- Subject to the outcome of the study on the Regional Food Reserve Facility currently underway, SADC should establish a Regional Food Reserve Facility. As part of this process, Member States should strengthen the existing national food reserves facilities;
- SADC hould establish a Regional Integrated Agricultural Information System.

- ***Mitigating impacts of HIV and Aids*** and other Chronic Diseases on agriculture and Food Security

➢ **<u>Short term strategies</u>**

- ***Provision of key inputs – improved seed varieties***

- Member States should ensure seed supply and availability through:
  i) Promotion of seed multiplication
  ii) Contract farming
  iii) On farm seed production of Open Pollinated Varieties by farmers
  iv) Tissue culture
- Member States should ensure timely availability of good quality seeds to targeted vulnerable smallholder farmers;
- Member States and the Secretariat should expedite the harmonization of seed policies and legislation to facilitate increased seed trade;
- International Cooperating Partners (ICPs) and Local Non Governmental Organizations (NGOs) are urged to support Governments in sourcing and distributing seeds;

- The SADC Plant Genetic Resources Centre (SGPRC) in collaboration with the national agricultural research systems should contribute to the production of foundation seed from breeder material as may be required by the region;
- Member States should put in place National Disaster Plans for seed in order to meet seed requirements in case of emergency.

- ***Provision of key inputs – fertilizers and other agro-chemicals***

- Increase regional production of fertilizers and agro-chemicals for crop production through revamping of viable existing plants based on comparative advantage.
- Due to bulkiness of fertilizers, Member States should strive to have distribution points within easy reach in main production areas.
- Private sector should be encouraged to provide fertilizers in small and convenient packages to meet the demand of the various farmers (e.g. 5 to 10 kg).
- A study should be commissioned to explore ways of exploiting deposits and available capacity to produce fertilizers within the SADC region in order to meet demand. International Cooperating Partners should be urged to support this initiative.
- Provision of comprehensive liming program for acidic soils
- Provision of timely targeted support to vulnerable smallholders and emerging commercial farmers.
- The provision of comprehensive inputs support should be backed up by strong research and extension services.
- Promote the use of organic fertilizer through the sensitization of producers on the use of animal and green manure and increased use of nitrogen fixing plants.
- Considering the magnitude of the fertilizer requirement, the region appeals to the International Cooperating Partners (ICPS) and Non Governmental Organizations (NGOs) for support in sourcing and distribution of fertilizers as an emergency.
- Enhancing competition on trade in fertilizers and other agrochemicals to avoid monopolistic tendencies and ensure fair trade by 2006.
- Summit urged Member States to consider targeted agricultural support programs and services such as research and extension.

- ***Provision of Key inputs – Farm machinery and implements for tillage***

- Encourage the use of draught power through training of farmers, provision of appropriate implements and restocking, supplementary feeding and training of animals.
- Governments should offer timely support to tillage services to smallholder farmers and encourage establishment of tractor and draught power hiring services.
- Private sector should be encouraged, through appropriate incentives, to produce farm implements and to meet the required demand.
- Encourage research and development in designing appropriate and affordable farm implements.

- Promote collective use of draught power, farm machinery and implements through farmers' associations.
- Governments should remove all tariffs on farm machinery, implements and spare parts within the region where there is no local production.

- ***Provision of key inputs – Farm labor***

- Member States should intensify use of draught power and promote mechanization to ease the labor constraints.
- Member States should promote labor saving and gender sensitive technologies.
- Member States should promote agro-processing, storage and packaging for value addition to increase labor productivity.
- Member States should promote non-farming rural income generating activities and develop agro-business entrepreneurship.
- Member States should further enhance the capacity of national extension services through recruitment, retraining and retention in collaboration with private sector.
- Member States should enhance gender mainstreaming, in particular repealing discriminatory laws that create barriers to access key inputs.
- Member States should mainstream measures to combat HIV and Aids in agricultural and natural resources policies and programs.

- ***Provision of key inputs – Land***

- Member States should share experiences of best practices on land utilization, land tenure systems, land administration and adjudication.
- Member States should accelerate land distribution and policy reform programs based on various options such as willing seller – willing buyer.
- Member States should promote gender equality on access to land and accelerate ongoing land policy reform initiatives.
- Member States and ICPs should endeavor to clear landmines from agricultural land.
- The Summit directed the SADC Secretariat to fast track the establishment of the Technical Land Reform Support Facility and report to the Integrated Council of Ministers in June 2004.

- ***Impact of Food Aid and Imports on Domestic Agriculture***

-Summit urged Member States to carefully assess the implication of food aid and commercial imports on the long term sustainability f their food and agricultural sectors and promotion of intra –SADC trade and where possible, source from the region.

- ***Crops and Livestock Pests and Diseases***

- Member States should strengthen and coordinate surveillance and sharing of information on trans-boundary pests and diseases as part of their national early warning system through an increase in resource allocation to agriculture.
- Member States should revitalize national control measures for migratory pests and diseases and develop a regional program on the control and eradication of trans-boundary pests and diseases.

- Member States should enhance use of biological plant and animal protection agents, especially insects and pathogens, to control pests and diseases.
- Member States should intensify mass vaccination, surveillance and awareness campaigns against Trans-Boundary Animal Diseases. A regional approach to vaccine production should be pursued through the pooling of resources and creation of Centers of Excellence.
- Governments, NGOs and ICPs should provide targeted support to smallholders farmers for veterinary services. The region should harmonize Trans Boundary Animal Diseases control policies and strategies such as information sharing, disease control and preventive methodologies.
- Member States should review, update and harmonize the laws and regulations concerning Tse – Tse and Trypanosomosis.
- Member States should develop comprehensive national Tse – Tse and Trypanosomosis eradication strategies and programs to achieve PATTEC objectives.

- ***Enhancing Crop, Livestock and Fisheries production***

- Promote agro-ecological specialization and diversification of crops and livestock production based on comparative advantage.
- Increase production of drought tolerant crops such as sorghum, millets, cassava and other root crops as well as disease resistant crops.
- Increase the production of short cycle stocks such as poultry, small ruminants and piggery.
- Increase aquaculture production and marine farming (seaweeds, fish and other biota).
- Improve fish stock management and fish product quality through pre and post harvest handling, processing and storage.
- Enhance propagation, production and commercialization of non – traditional agricultural produce such as mushrooms for consumption, medicinal applications and export earnings, which would improve the overall food security and poverty reduction.

- ***Increasing Market Access***

- Market access and development

i) Member States should facilitate access by agricultural producers to national, regional and international markets

ii) SADC should ensure fair trade and access to other regional and global markets

iii) SADC should call upon developed countries to eliminate trade distorting agricultural subsidies

- Price stabilization

i) Member States should consider establishing price stabilization mechanisms with reasonable commodity price risk management in accordance with WTO as an incentive for farmers.

ii) Member States should consider the establishment of Sustainable Strategic Grains r]Reserve systems to protect both small holders producers and consumers, as buyers of last resort.

- Sanitary and Phytosanitary measures

i) Member States should expedite development of capacity to implement SPS measures to the required international standards and/or equivalence in order to facilitate trade and market access.

ii) SADC Secretariat should coordinate the harmonization of SPS standards within the region to the international standards.

- Market institutions

i) Member States should encourage and facilitate the establishment of farmers, producers and traders associations for marketing agricultural produce and inputs

ii) Member States should support voluntary farmers' organizations which would create opportunities for them to get into the value chains.

iii) Member States should strengthen their national agricultural market information systems and support the establishment of a Comprehensive Regional Agricultural Market Information System to promote intra –SADC and international trade. Infrastructural improvements that enhance the use of information communication technology, particularly computers, cell phones and radios in rural areas could be explored to facilitate information flows.

- Market infrastructure services

i) Governments should provide basic institutional and physical infrastructure to link producers with markets.

ii) Member States should increase budgetary resources and investment in the development and maintenance of physical infrastructure in particular roads, especially rural access roads, railways, grain handling and storage facilities and markets.

- ***Water Management and Irrigation***

Water demand management is poor and water retention infrastructure and exploitation of irrigation potential is inadequate. Global warming has exacerbated the highly seasonal and erratic rainfall pattern. The region is therefore constantly subjected to either floods or droughts. The region exhibits over dependence on rain-fed agriculture. Many irrigation systems in the region are inefficient, resulting in water losses averaging 40 – 60% which is unsustainable. Focus should therefore be on water harvesting for agricultural purposes.

i) Member States should aggressively embark on water management and development programs, which should facilitate agricultural development. These should include among others flood control, water harvesting and strategic water storage facilities.

ii) Member State should accelerate and upscale adoption and use of simple and cost effective irrigation technologies such as treadle and motorized pumps, canalization and water saving technologies.

iii) Interested Member States and the SADC Secretariat should expedite resource mobilization for the regional program identified by the AfDB on "irrigation development and water management".

iv) Member States should allocate a substantial share of the agricultural budget for water management and irrigation. Governments should develop and implement policies aimed at attracting investments from the private sector.

v) The region should fast track negotiations on trans-boundary water resources management and development with priority to agricultural irrigation support.

vi) The region should fast track ongoing initiatives aimed at promoting inter-basin water transfers and should ensure the full riparian consensus in accordance with the provision of the SADC revised Protocol on Shared Watercourses.

vii) SADC should identify Centers of Excellence on water management and irrigation for the region which links to national institutions for technical backstopping and capacity building.

- ***Research, Technology Development and Dissemination***

- Technology Dissemination

i) Member States, NGOs and the private sector should promote networks in the dissemination and adoption of appropriate technologies at grass root-level such as adoption of short maturing varieties of cereals and improved crop and animal husbandry.

ii) Research – Extension – Farmers linkages should be strengthened in order to facilitate the transfer of technologies

- Research

i) The development of crop varieties and animal breeds that are tolerant and perform better in the prevailing physical environment should be enhanced. Emphasis should be placed on increasing yields through improved genetic materials, production systems and management techniques.

ii) Member State are urged to develop and adopt appropriate technologies that will support emerging commercial farmers and resource poor small-holders

iii) Member States should strengthen capacities of public and private agricultural research institutions and universities

iv) Member States should strengthen research partnerships among the national agricultural research systems, the Consultative Group on International Agricultural Research (CGIAR) and the Forum for Agricultural Research in Africa (FARA).

- ***Private Sector Development in Agriculture and Rural Development***

- Member State should provide enabling regulatory frameworks, policies and support mechanisms aimed at strengthening capacities of private sector involvement in agriculture and rural development.

- ***Human resource Development in Agriculture and Food Security***

- Member States should enhance the capacity of professionals and farmers in the region with emphasis on farmers' exchange programs and scholarships for different specializations, and promote entrepreneurship development.

- Mitigating the impact of HIV and AIDS on Agricultural labor and Food Security
- Improved availability of nutritious food and nutrition education
- Improvement in the dissemination of information on the prevention and transmission of HIV and AIDS.

Annex 3

Application of the Dar es Salaam Declaration for setting the Regional SADC Program on Agricultural Research & Development

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The Regional Indicative Strategic Development Plan of SADC and the Dar Es Salaam Declaration should be developed in terms of researchable constraints and opportunities so that research programs are designed and shared by the scientific communities in SADC. Those researchable constraints should be shared by the stakeholders of research, and particularly extension institutions, farmers' organizations and the private sector in order to induce demand driven research and to closely relate development initiatives with research programs. In this respect, a review of what should be done in the main domains underlined by the Dar Es Salaam Declaration is presented in this document.

► *Inputs*

- *Inputs = Developing policies, regulations and a conducive environment*

The development of inputs use by farmers will result from the combination of the availability of affordable and efficient inputs, timely delivered and properly packaged, of the availability of accurate advisory service on their use, of financing arrangement for facilitating access, of favorable production conditions and marketing conditions for investments in inputs use. A large part of such conditions can be improved through the local organization of farmers sharing comparable production goals and conditions. This is mainly a matter of policies and regulations. However, research and extension have a key role in building a conducive environment.

It is the responsibility of research to develop in close partnership with farmers' organizations the germ- plasm that farming systems will mobilize. Research is responsible for conserving the germ- plasm. It is the responsibilities of extension to disseminate information on those varieties and breeds and to facilitate the contribution of farmers to this innovation process. It is also the responsibility of research and extension to promote sustainable production and distribution systems for the varieties and breeds; partnership with farmers' organizations and the private sector is required. Developing policies, regulations and a conducive environment requires inputs from research and extension. Particular attention should be given in this respect to the development of GMOs. In the field of genetic manipulation, research in Medicine, Nutrition, Environment, Agriculture, Economics and Legal Developments should be combined.

It is the responsibility of farming systems research to establish the recommendations for inputs use, according to the prevailing conditions of categories of farmers, and to document innovative distribution and financing systems through which farmers would have better access to inputs of value to their production systems and livelihoods. It is the responsibility of farming systems research to document the required improvement of the marketing systems and of the input supply and distribution system which would encourage farmers into inputs use through better adequacy of products, pricing and servicing. It is the responsibility of extension services to develop farmers' knowledge on inputs use and to facilitate the emergence of organizations facilitating the financing, procurement and impact of those inputs on production and income. Improving the commercialization of products is an effective way of supporting inputs use. However, those responsibilities should be shared by the private input sector who is taking the benefits from increased inputs use as well. Research has accrued responsibility into the quality control of inputs.

It is the responsibility of research to develop knowledge about interactions between inputs use by agriculture and health, nutrition, natural resource and the environment as well as on the income and well being of people. This impact analysis may hardly be the responsibility of agricultural research alone. Chemical science, Environment science, Medical science and Social and Economic sciences should be involved. Close partnership between research and extension is necessary to promote awareness of the public.

- *Inputs = Developing infrastructures and facilities*

Developing affordable and effective inputs from local resources and existing industries may well be possible. However, constraints that have discouraged the public sector to maintain activities in this domain and limitations that have deterred the private sector to do so up to now should not be underestimated. Such development cannot reasonably be implemented by agricultural research alone but should mobilize the concurrence of hard science and other sciences, and in particular industrial science and economic science. The economy of scale is a determining issue for running an input factory and the actual size of inputs markets is generally not sufficient at country level to run such factories on a competitive manner with imported products. In addition, in a depleted world fertilizer market, as resulting of the sharp decrease of fertilizer use by USSR and at a lesser degree by the European Community, the international competition for fertilizer manufacturing is tough. Hikes in oil and gas prices have largely modified conditions for the viability of fertilizer plants which are all now located close to the source of raw materials or at port level. As far as fertilizers are concerned, transport costs and handling costs are the most important component of farm gate price and products should have a high concentration to reduce transport costs. Farmers should mainly pay for the nutrients content of fertilizers, which also presses for the use of high grade products. There is no future for Ammonium sulfate, Carbo-ammonium nitrates and low grade phosphoric fertilizers but in countries not tackling the costs of fertilizers at farm gate. **Research has responsibility for documenting on a neutral basis those files for decision makers in governments**.

As far as seeds are concerned, the capacity to produce the diversity of varieties and breeds needed by farmers is the main issue in order to reserve bio-diversity, a major

aspect of risks mitigation. The property of seeds and breeds should be maintained in the hands of farmers' organizations as much as possible. As far as pesticides are concerned, the wise selection of products and the design of conditions for their use and for the safe management of stocks and containers, including the destruction of obsolete and dangerous products are issues of growing importance. Agricultural research and extension have shared responsibilities for the wise and safe use of inputs maximizing production and income and properly supplying markets. Agricultural research has responsibilities for analyzing costs components of inputs at farm gate and to propose accurate solutions for cutting those costs. **Agricultural research and extension have responsibilities for the development of local infrastructure and facilities which will provide flexibility, empowerment and self sufficiency for farmers**.

Nitrogen fertilizers are produced from natural gas and naphta and the region has limited resources in that, with exception of Angola. Some coal deposits may be used for a limited range of rather poor value products. Cheap manufacturing of phosphate fertilizers requires high grade phosphate deposits with limited content of components polluting the process (silica and soluble metallic compounds) and limited content of hazardous products (Cadmium, Chromium, Lead, Arsenic, Radio-nucleids). Availability of such products in the region is very limited. The region has no potash deposits and sulfur availability is limited to the cleaning of natural gas in Angola. The region has limited capacity for supplying micro-nutrients (magnesium, zinc, boron, copper) required in specific formulations. Therefore the comparative advantage of producing fertilizers better than importing should take into consideration the full picture of the formulation of fertilizers and not only the production of some basic products.

In relation with the important variability of soils, climate, crops, expected yields, the region is in need of a rather large range of fertilizer formulations, which cuts on the economic advantage related to economy of scale. Therefore, the development of local small scale bulk blending chains addressing local markets and mixing locally manufactured products with imported products or large scale regionally manufactured simple fertilizers may be more economic and flexible than the development of large scale fertilizer factories producing compounds. This will allow for the strictly local use of valuable rock phosphates, bulky and with poor nutrients content available on short terms for crops as it would cut on the transport for those products. In this respect, the redeployment of large scale fertilizer manufactures should better be oriented only on the manufacturing in ports or close to oil and gas deposits of simple fertilizers supplying bulk blending plants, if competitive. It should be underlined that international suppliers are making more money on the sale of bagged compound fertilizers than on straight bulk simple fertilizer supply because competition is more active on the second category of products. Therefore, the procurement strategy for imported fertilizers should give priority for large shipments of single fertilizers in bulk.

Then, the matter of packaging is not correctly addressed by the actual policy lines. As handling is a significant component of costs, international and national large scale transport in bulk is much cheaper than transport in bags. Thus products from the fertilizer factories producing simple fertilizers should not be packed into 50 kg or 35 kg bags, but supplied in bulk or in jumbo bags (500kg to a ton) to provincial blending

units that would pack all necessary blended formulations in small bags for local use. **This capacity for innovation is not in the hands of agricultural research, but should combine Chemistry research, industrial research and marketing research with agricultural research**. The private sector should be heavily involved in the search for solutions.

Financing fertilizer distribution is an issue of considerable importance, as far as one year may be necessary between commissioning the production order and the payment by farmers. Therefore, the establishment of financial circuits that cut on credit costs (and especially international banking costs) is of ultimate importance. Shortening the delay between orders and payments at import level is a must and requires banking organization. The same attitude should prevail for supporting small scale blending units. Empowering through accurate banking support the national and regional fertilizer industry is an issue if some independence from the world scale players is to be gained as China, India, Indonesia and to some respect Brazil could do it.

The manufacturing of pesticides requires patents from multi-national producing firms, access to reactants and catalysts which may be difficult to gather and maintain without a well developed industrial tissue. It also requires particular attention for packaging that requires specialized competences, machinery and materials that may have a high management cost in developing countries. Risks from by-products and wastes are extremely important in this industry and may generate heavy public health concerns if not properly addressed. There are more and more concerns about the pollution of food and natural resource by residues from pesticides. Tracking the problems related to those residues is complex and requires the combination of research programs in Medicine, Agriculture, Environment, Chemistry and Physics, and also Economic science. Solutions require the contribution of Industrial and Engineering science, and of Lawyers. It is the duty of research to enlighten the promising scenarios and to avoid that public decision makers would embark in solutions which are not viable. **This capacity for innovation is not in the hands of agricultural research, but should combine Chemical Research, Environment research, Financial and Marketing Research with Industrial and Logistics research, with a contribution from agricultural research.**

- *Inputs = develop services and partnership, promote innovative technologies and decision making processes*

Short term credit has proven to be a poor solution in all developing countries for financing fertilizer use by small scale farmers because it does not provide empowerment for farmers and for the national procurement and distribution companies. Backing revolving funds for fertilizers handled by farmers' organizations and national fertilizer distributors has proven to be a good solution for small scale farmers. The role of public support in the development and maintenance of those revolving funds is crucial. **In this field, a combination of agricultural research, small scale financing research for rural development, social research and extension is required.**

- *Inputs = empowering people through information and education and the mitigation of risks*

It is the duty of agricultural research and extension to elaborate ways and means for properly informing the public and particularly the rural public and the farmers about the issues related to the safe and efficient use of inputs and about the implementation of the selected solutions. Little will be achieved without the concurrence of farmers' organizations and without mobilizing the private sector.

Organizing the supply of fertilizers and other inputs at farm gate is an issue of considerable importance. The promotion of networks of outlets managed by competent personnel able to contribute to advisory services and to provide stuff at the best price should be supported. Major research and extension programs have been developed on the issue in Asia and could inspire what could be done in the region.

Organizing farmers' associations for joint procurement and distribution of inputs is a big challenge, which should be backed by rustic financial solutions, infrastructures and human resource development. The public sector should limit its role into the control of equity and regularity of movements and shares. Partnership with the private sector needs to be carefully regulated. Agricultural Research and Extension have key role to play in developing model solutions, in analyzing the development of systems, in developing human resource and proposing to Governments and professionals rules and regulations.

- *Inputs = the necessary mitigation of risks*

The main problem deterring small scale farmers into increased use of inputs, if the purchasing capacity is there, is the risk that production conditions and marketing conditions will not provide the expected returns from investments, while this investment may consume a significant portion of the available cash at family level. It is the responsibility of agricultural research and extension to develop with farmers" organization methods in order to mitigate the risks related to investments in input use. Such programs are necessary multi-prone:

- Reducing the price of inputs at farm gate through the proper adequacy of their nature and the control of costs components, in particular credit costs.
- Improving commercialization conditions of outputs thus improving the Outputs/ Inputs price ratio.
- Organizing forecasting methods for climate and rainfall through which farmers can optimize their decisions for running their production systems and their inputs investments.
- Improve the effectiveness of inputs through their fair combination and adequate use, and through the implementation of accurate farming practices in crop rotations, animal feeding.
- Develop water harvesting methods, complementary irrigation, dry farming technologies, crop diversification and improved use of available feed stock and pastures in order to mitigate drought risks.
- Protect the purchasing capacity of inputs revolving funds through risks mitigation arrangement (mutual insurance, de-stocking of livestock or timber, etc).

► Mechanization and motorization of agriculture – Improving the productivity of labor and land

- *Machinery, motorization and tools for agriculture and products processing / labor productivity and effectiveness = Developing policies, regulations and a conducive environment*

Considerable efforts should be developed in the sector of machinery, motorization and tools in relation with the purchasing capacity and production systems of farmers. Without adequate credit system, spare parts distribution and repairs services, such development may hardly take place. The partnership with the private sector is the basement of all developments in the issue and fiscal support is needed. The price of fuel for farmers in order to run motorized equipment is a key issue. It is the duty of research and extension to cooperate with the private sector in order to identify, try, evaluate feasible alternative solutions and the methodology for their adoption. Existing materials and processes already available worldwide should be largely explored. Active participation of farmers' organizations is necessary. More than any other issue in agriculture, this development is a complex multi-stakeholders issue; it may be a long term more than a short term endeavor.

Recent prices hike in oil have generated new interest for animal draught for small scale farmers. However, the potential impact from animal draught on the productivity of a farm may be badly affected by drought conditions. Indeed, when rain is scarce, it is important to act quickly when the rain is there, especially for setting the conditions for planting and putting seeds in place, which is a matter of power. The development of conservation agriculture and minimum tillage favors tillers versus ploughs and direct seedling equipments. Tillers and direct seedling machinery are poorly adapted to animal draught because power is necessary. However, animal draught is often more accurate than motorized machinery for weeding tall crops like traditional cereals, cotton, sugar cane and even sunflower. The use of herbicides should be considered in the picture but those products are not neutral to the environment and resistances from the flora are occurring. Transport, a key issue on farm, may still be cheaply addressed through animal drought than through tractors when those activities may be somewhat differed.

The intensification and securing of livestock raising will more and more combine grass production and the grazing of pastures. The problem of collecting hay will thus arise. The transfer of animal draught technology for making hay has not been effective so far in developing countries and special motorization is needed. In small scale farming in Asia, moto- cultivators had a tremendous impact on productivity and farmers income, particularly in intensive production systems: irrigated rice, horticulture, multi-story farming. Lessons could be drawn for the progress of some farming systems in the region.

On farm processing of agricultural products requires mechanization and motorization. Transfers of available equipment from Asia may provide excellent solutions and cheap machines with easy maintenance. In this respect support to the development of small scale entrepreneurs has given excellent results in many countries. Many tractors ensuring services for land preparation are in fact only maintained because their owners derive a living through the processing of cereals. Machinery for minimal maintenance of canals, drains, terraces, rural paths and bridges, for local heavy transport (harvests, timber, building material, water, animals) are needed at community level.

Therefore, as far as possible, combination of systems should be preferred to single systems at farm level. Shared equipment may ease this diversification, but corresponding arrangements require significant understanding about the mobilization of the various tools by the partners and the share of costs and risks. Collective equipment run by entrepreneurs or associations are needed at village or county level. Training of all stakeholders involved in machinery is necessary (industrialists, blacksmiths, dealers, farmer, entrepreneurs,…). A full fledged research and development program is needed at provincial level in all Member States that should be backed by coherent policies.

- *Machinery, motorization and tools for agriculture and products processing = Developing infrastructures and facilities*

There is little point to embark on a research and development programs on mechanization and motorization if action is not taken to make the selected machinery options available, affordable and distributed. Developing infrastructures and facilities should be based on markets evaluation for the corresponding products, based on outputs from research and development programs. Such development is based on the contribution of Engineering science, marketing science, economic science together with agricultural science and to some extent to social science because adoption of machinery heavily changes human relationships on farm and in collectivities. This development is heavily dependant on macro-economic arrangements facilitating imports/ manufacturing of the equipment and spare parts and supplying energy to rural areas. It also heavily depends on arrangements organized by governments for facilitating the development of local industries.

- *Machinery, motorization and tools for agriculture and products processing = develop services and partnership, promote innovative technologies and decision making processes*

Partnership is the key issue for promoting mechanization and motorization in rural areas. The full set of actors providing machines, spare parts, repairs, energy, credit, training, and of traders is needed. Partnership between farmers is a must. Partnership between public services, NGOs and the private sector for providing advisory service, innovations, decision making support, credit and organization is necessary.

- *Machinery, motorization and tools for agriculture and products processing = empowering people through information and education and the mitigation of risks*

The development of mechanization and motorization is all about the empowerment of people through the improvement of labor productivity and of the use of the land. There is little development potential for mechanization and Motorization if land rights are not cleared, if conditions are not supportive for the use of inputs, if labor price is artificially maintained very cheap, if prices given to farmers are not balanced with investments costs for producing better or if the vagaries of those prices are high. Therefore, the development of mechanization and motorization are conditioned by the empowerment of farmers' organizations so that the problems above are properly addressed. Information and education are key issues and a systemic approach of

farming is a pre-requisite for a proper insertion of machines in the production systems and livelihoods. **Therefore, decisions for supporting mechanization and motorization require in most cases a sharp revision of research and development approaches in rural areas.**

► ***Access to Natural Resources and Access to Land***

- *Developing policies, regulation and a conducive environment for improved access to land and natural resource*

Natural resource necessary for the development of agricultural production are soils, water, natural vegetation (wet lands, pastures, rangelands and forests) and an array of wildlife involved into the biology of production. Social access to the resource should thus not be limited to the access to plots with deeds or other legal arrangements. Sociologists and specialists in legal science distinguish two categories of rights on natural resource: collective and private and three categories of access: free, toll and restricted. Different rights and accesses may exist on the same area and concern different resource. For example, on a private plot, the products from agriculture may belong to the farmer; however, crop residues and post harvest weeds may be accessible to the community of the farmer, as well as to herders regularly shifting through the area, timber and non timber products from trees and shrubs on the plot may belong to the women of the community, while herders may have access to the foliage ; run-off water belongs to the state ; surface water generally belongs to the state, but both farmers and herders may have rights on it. Ground waters may be the property of the farmer that had dug the well, the property of the community that is managing a collection of wells or the property of the state, but herders may have rights on wells. The collection of fuel wood for domestic use is often on conflict with activities for producing charcoal from members of communities. The property on wildlife and gathered natural resources is a growing issue. There is a need for updated diagnosis of the prevailing situation on rights and access to natural resource in most provinces of the Member States, which should encompass the analysis of the expectation of stakeholders of the land.

Research institutions and Extension Institutions should develop with farmers' organizations the required new paradigms and concepts for settling appropriate policies and regulations easing the required changes for access to land and to natural resources. Those changes are different from a country to another and even at provincial level depending on local traditional regulations.

Land development requires land use planning. Such exercise requires the combination of an accurate diagnosis by Earth Science and Biological sciences of Strengths, Weaknesses, Opportunity and Threats on the area proposed for this planning. This diagnosis has to be participatory and important theoretical developments are required for combining local traditional knowledge and modern knowledge on land management and the optimal development of resource at community level. The improvement of the insertion of livelihoods into development planning is still an unresolved scientific problem in most countries. Land use planning requires institutions form the grass root village level to the county level and provincial level. It has a heavy legal component. Research and extension institutions should increase

their co-operation with farmers' organizations and NGOs for improved Land use planning and the corresponding institutional development.

- *Developing infrastructures and facilities*

The insertion of local infrastructures into the land for agricultural purposes or for harnessing natural resource should be thought within a fair land use planning exercise. Losers and winners from the proposed infrastructure development should be carefully identified and compensations have to be settled on a sustainable manner. Provisions for recurrent costs related to the maintenance of the infrastructure should be delineated and managed by institutions mobilizing the end users of the infrastructure. Legal frameworks should be established designing how people may quit and enter access to infrastructures. More and more, costs of infrastructures are shared between the state and the end users. There is an urgent need for procedures on the way to develop the corresponding negotiations. In the case of small scale farmer having little cash facilities, labor mobilization and remuneration methods have been attempted and should be streamlined.

The development of joint investments by farmers for agricultural purpose within a community is an important factor of progress (timber plantation, rehabilitation of pastures, correcting gullies, protecting streams and river banks, developing terracing, drainage, water harvesting, development of ponds,…). Supporting those initiatives through accurate models combining techniques and decision making processes is important. Financing those initiatives through contributions in kind and in cash, possibly backed through external assistance is also an important issue.

- *Developing services and partnership, promoting innovative technologies and decision making processes*

It has already been said how the promotion of local entrepreneur and machinery and motorization is important in this respect. Technical support from research and extension is required in order to gain from experience and limit the development of inadequate infrastructures.

- *Empowering people through information and education - the mitigation of risks*

Interactions between improved access to machinery and inputs, to credit, between the emergence of local farmers' organizations and the development of land are the key issues for Research & Development. Exchange of experience and questions within the SADC region would provide momentum for progress. Developing the land through fair regulations, investments and the corresponding institutions is a powerful lever for rural development and the progress of agricultural production. Empowering local farmers' organizations, local district powers for properly planning action and for driving the institutions should mobilize the competence of research and extension, with the contribution of Civil Society Organizations. Mitigating risks through land management and investment is a major issue that should be dealt in close partnership with the beneficiaries. There is no improved risk management that does not bear costs and those should be internalized in the production systems through accurate financing mechanisms.

► ***Development of farm labor***

- *Policies and regulations*

Improvement of the availability, competence, involvement in economic activities and remuneration of farm labor is a complex issue that may hardly be addressed in short term by research and extension. Interactions between technical innovations and farm labor are important. However, action on land use planning, developing infrastructures, opening markets, facilitating the development of entrepreneurship, development of farmers' organizations and contractual arrangements within the production to consumption chains are often per-requisites for adoption of any technical innovation that would impulse the improvement of labor use and the efficiency of labor. Special attention has to be given to the gender issue and to the insertion of youth in rural activities. There is an obvious need of co-operative R&D programs on the issue of developing farm labor in the region. The first step is to support the development of accurate policies on the issue, balancing the role of the levers quoted above.

- *developing infrastructures and facilities — developing services and partnership*

A number of experimental infrastructures have been developed over the world for the local promotion of entrepreneurship in rural areas. Facilities for those launching new activities are organized in packages (credit, basic equipment, technical and accounting advisory service). Micro-scale cooperative of farmers sharing some equipments and facilities have been experiences as well, which have supported a significant improvement of the employment and efficiency of the labor force. However, local training centers are the most effective tool or labor employment. Cooperation with farmers' organizations is necessary for all quoted developments. There is a important need for the involvement of research and extension in those issues in all SADC Countries.

- *Empowering people through information and education and through the mitigation of risks*

The first objective of development of farm labor is to increase income through better employment and better remuneration of labor. There are tradeoffs between intensification of production systems in agriculture and particularly mechanization and employment. Therefore, the challenge is to maintain as much as possible the labor force while the progress in productivity requires that less labor is injected in every quantity of products. The diversification of production and the increase in production should be combined to address the issue. As the region is not self sufficient ion average for basic agricultural products consumed there, there are still opportunities for increasing the involvement of the labor force in filling such gaps. However, more people should now been involved in the making of more favorable conditions for production than in the production processes itself and this evolution requires information and education. Deriving a part of the farming labor force to develop local infrastructures, to develop services to agriculture, to process the production, to rehabilitate natural resource and to develop new rural activities is thus an important

part of the planning of rural development. It can be seen that the labor force thus employed should heavily contribute to mitigate risks for the communities, which should justify their remuneration. Financing mechanisms should be invented and the institutional set-up as well.

Special attention has to be given to the gender issue and to the insertion of youth in rural activities. Options for contractual agriculture, cottage industry, post- school preparation to entrepreneurship in rural areas should be identified. Micro-credit could play a better role in the making of new options. New technologies should be better gender sensitive and institutional development at local level as well. Agricultural research and development has a role to play on the issues.

► Development of crops, livestock and fisheries production - Development of non conventional productions and promotion of livelihoods

- *Policies, regulations and conducive environment*

There is a natural trend in the management of agriculture in most developing countries to put emphasis on two domains: improving genetics and controlling pests and diseases. If an outbreak of diseases is not controlled, the public can rapidly identify the weaknesses of public action. Improved varieties and breeds may showcase brilliant results of demonstrations through the media. In addition, improved varieties and breeds are important factors for improving the control of pests and diseases. However, rural development and the progress in agriculture are much more than the control of pests and diseases and the progress in genetics. In countries where agricultural development took off, priorities have been given to the social and professional organization of farmers and to the education in rural areas, to the development of economic relationships between the farmers and the industry, to investment in rural areas from farm level to provincial level, to marketing issues and credit, to insurances and risks mitigation. In those countries, the efficiency of improved genetics and protection of plant and animal health has got its magnitude from knowledge and education all over the production chains and from accurate policies and institutional development.

Therefore, there is a considerable effort to be developed by Research and Development programs for the formulation of accurate development policies which would consider the farmer as the master piece of development in rural areas and the necessary promotion of partnerships and investments. Progress in the productivity of labor in the one hand and risks mitigation in the other hand are the key issues and those goals cannot be achieved without investments. Thus the deal is to provide a conducive environment for a huge number of resource poor farmers so that investment makes sense to their perception of the progress of their livelihoods and can generate value for money. Many impressive results from Asia and from Latin America prove that only the combination between public investments and private investments by farmers can rapidly provide valuable outputs. However, agriculture is the science of situations and the accurate policies and strategies should be tailored to every country and even to every province. The weaknesses of research in agricultural policies, the lack of scientific analysis of the impacts of running policies should be corrected.

- *Development of infrastructures and facilities*

The first physical infrastructure needed for rural development is rural road properly connected to feeder roads. The second infrastructure that has proven to be very effective for rural development is electrification. The third infrastructure of importance is related to water supply/ water monitoring, but sharply depends on the availability and cost of distribution of water. In conditions where livestock is an important activity, fencing has also made possible tremendous progresses. But immaterial goods have also proven to be very effective in rural development: information and credit, mutual insurance, social organization, fair regulations and justice. There is an urgent need for Research and Development to develop programs related to the development of infrastructures and facilities in the rural areas and to articulate the promotion of other more technical and commodities oriented innovations with investment and facilities.

The development of infrastructures and facilities for education and training has a particular share in the immaterial goods development needed for rural development. It is important that Research and Development would explore innovative facilities for providing knowledge to farmers, as already initiated through farmers' fellowships, farmers' field schools and other training by doing initiatives. Proximity is a key word, particularly for women, and thus costs should be shared with the benefiting communities, which may be possible if the beneficiaries may see their benefits.

- *Development of services and partnership*

The provision of services to the producers is in general the most lacking factor of progress in agriculture. The difficulty lays into the grouping of all main services at community level. Many experimental development programs have attempted to built service centers but the running costs have made the pilot structures fail in many cases. However, scrutinizing the rationale of those difficulties shows that the lack of participation of farmers' organizations and the lack of human resource development for those organizations have in most cases been the main factors for failure. The deficit of cooperation with the private sector on clear contractual basis with a win-win orientation has also jeopardized many pilot attempts.

It is an important duty of Research and Development to experiment innovative services and partnership providing capacity and knowledge to the farmers' organizations. It is an important duty of Research and Development to identify the relevant institutions, regulations and development pathways for innovative services and the corresponding evolution of partnership. The development of Auxilliaries of Veterinary Services and of district inputs retailers successfully put in place in several developing countries refers. The development of grain banks, warrants systems on harvests, decentralized rural banks, banks of services are also examples that should inspire research programs in the region. Many lessons should also be drawn from the successes and failures of the cooperative movements in Africa. A particular attention could be given to the development of innovation chains within developing production chains associating stakeholders for shared profits. A particular attention could also be given to Innovation and Management groups of farmers developing innovative coordination between improved land use and innovative farming systems fitting with their livelihoods.

- *Promotion of innovative technologies and decision making processes*

While for long innovation has been based on commodity basis mainly for crops, livestock and eventually for fisheries production, there is now a growing concern about the necessary integration of an innovative approach for the production system driven according to the expectations of the producer. This approach is not only valuable for small scale farming with limited assets and fits as well for family farming commercially oriented. Technical innovations should fit with the income raising and consumption systems of families as well as with the technical rationale of the sequence of technical acts of production. Technical innovations should fit with the social representation of value for money, of efficacy of labor and investments. Technical innovations should secure social groups through the promotion of capitalization and social organization. In this respect, the contribution of innovations to the capitalization process have been quite neglected: social capital first providing social security and risks management, biological capital through an accrued bio-diversity on farm and a restored biological environment, physical capital through infrastructures, basic tools and machinery, animal draught and livestock, financial capital through food reserves, bank deposits, availability of cash. Technical innovations should contribute to the development of employment and income raising, particularly for the forgotten: women, youth, marginal classes of the rural society. In this respect, diversification of production systems and the insertion of non-conventional productions is of interest.

More than isolated technical inventions, research and development should promote through accurate partnership with all necessary stakeholders the development of articulated systems of innovative techniques and decision making process which would provide flexible response to a domain of problems for a rather diverse clientele. Impact analysis of the proposed decision scenarios and involved technical innovative actions or processes should be evaluated with the expected beneficiaries in contrasted situations and lessons learnt should provide basis for guides for users. Economic and social issues are of primary importance in this evaluation. As far as those conditions may evolve rather quickly, generations of innovative schemes are preferable to recommendations.

It is clear that the development of the corresponding participatory and evolutive research approach accepting to provide approximations of solutions shared with the beneficiary and adapted by them according to their changing environment requires the training of scientists and information and training specialists. Many aspects of this approach are derived from marketing science: no product has value without identified clientele.

- *Empowering people through information, education and the mitigation of risks*

The empowerment of people for decision making and mobilizing the appropriate or best available answers to their problems is an important component of the duty of Research and Development. Providing the accurate information within the understandable language for the targeted clientele according to the prevailing questions and problems is a very difficult task. Achieving this task requires the combination of a diversity of skills which may be available in research institutions

and in extension institutions. However, scrutinizing the required combination of competences could be revisited. Farmers are particularly risks adverse and this may be related to the difficulties met for finding alternatives when farming fails in rural areas. Therefore, the mitigation of risks related to the proposed progress is an important issue that so far research has largely neglected. Information and education are assets for managing risks, is those are taking into accounts risks factors. The perception of risks by farmers and the local approaches for mitigating risks should be considered as based on accrued experience. Economic risks are very important, but the attitude towards risks is also cultural and educational. Social organizations are important for changing both the nature of risks and the mitigation methods and the perception of risks. Therefore, all innovations chains to be developed by Research and Development should consider the monitoring of risks factors and the corresponding social organizations, information systems and measures to alleviate those risks.

► Particular case of Water Management and Irrigation

- Policies, regulations and conducive environment

Water management for agriculture and irrigation have a large potential of progress in the region. However, this management has to be inserted in the general picture of the multi-purpose use of water for development. First of all, in many major tropical catchments, flood control and water management for agriculture are intricate issues. The development of irrigated areas in valleys should not counteract the natural mechanisms regulating floods and some land development programs should also contribute to regulate flooding. The combination of dykes and reservoirs will apply in most infrastructures and the harmonious distribution of small scale and medium scale infrastructures is often better than gigantic infrastructures drowning valuable land resource. The size of infrastructures dictates the social and economic management of the water that they manage, which is far from neutral for agricultural development. Therefore, the policy for water is very much depending on what intentions are for the use of water.

Improved water management in agriculture requires accurate policy support and effective regulation if the wastage of water resources is to be addressed on an efficient manner. Research has a key role to play in modeling the different options for using water for agriculture at major watersheds level, at medium watershed level and in small catchment areas. Earth science has a key role in this work. Water should be shared between the various users and water wasted by some users may still be productive for other users. Water use systems, water users associations and arbitration mechanisms should be put in place. As far as water is used for agriculture, the efficiency of water for producing agricultural goods and the cost of water are important issues. The cost of energy will possibly continue to increase in close future; thus the cost of energy for making water available will be a growing issue in agriculture. Transfers of water through gravity in watersheds are not solutions of the past, but do not fit with all water supply needs. Cleaning water and withdrawing polutants from water will be a growing issue and agriculture may provide some solutions and generate many problems. A policy for water quality may hardly be driven without considering agriculture. The pricing of water for agriculture is a growing issue in most countries and requires accurate and finely tuned policy. There

is an obvious need for reinforcement of research and development capacity on the domain of water policy.

- *Development of infrastructures and facilities*

While large scale infrastructures for water management are public by nature, most infrastructures servicing water for agriculture will be at medium scale and small scale in order to provide vicinity and flexibility for water use. Cost-sharing with local communities and farmers' organizations then apply. Facilities should be developed for such investments through accurate financing systems, advisory services and technical support. The issue of maintenance is of importance.

- *Development of services and partnership*

Water users associations are emerging worldwide. Problems still occur for sound management of such organizations, but by and large outputs are rather positive for improving water sharing, water efficiency and the payment of water by users. Various partnerships between farmers' organizations, the private sector and local administrations have been settled with some successes.

The promotion of services for equipment and maintenance involving the private sector is necessary. Locally, the supply of water is privatized or semi-privatized, which provides solutions for the development of the supply systems. All options should be scrutinized by an accurate Research and Development organization.

- *Promotion of innovative technologies and decision making processes*

In water management and irrigation more than in other fields of agricultural development, innovation has to be shared by the stakeholders and success depends on information and training. No technology can be successfully promoted in this domain without accurate and appropriate decision making process. For becoming a performing irrigating farmer, most individuals need time and training. Investments are generally heavy and modify sharply the management and functions of a farming system. Economic risks may be important and the default of manpower availability may be fatal to the development. Irrigation without inputs and mechanization is hardly viable. Therefore, a systemic approach of innovation should be preferred. The modernization or the rehabilitation of irrigated areas is an important challenge in many provinces, which requires the combination of approaches and competences. There is little doubts that institutional capacities fro Research and Development in irrigation technologies should be reinforced.

- *Empowering people through information, education and the mitigation of risks*

Empowering people for embarking into improved water management and irrigation, or for developing their irrigation and water management practices is a major challenge, as far as traditions for irrigation are so far short for most small scale farmers. A diversity of approaches, methods, social organizations, infrastructures, practices can be proposed and should be carefully tailored to the physical, social and economical situation as well as to the servicing environment for the farmers. Specific Research and Development programs are required for promoting such empowerment.

► Facilitating Market Access

- *Policies, regulations and conducive environment*

Increasing market access requires first of all an updated cognizance of existing and potential markets, of their dynamics and potential expansion, of their weaknesses and threats. Within the progressing liberalization of markets, the capacity of governments for driving changes is limited, while the role of private actors on the markets prevails. Therefore, modeling the impact from empowering some key actors has some importance for identifying policies. In most developing countries, the agricultural markets for the main commodities are very much related to the purchasing capacity of the consumers which push prices down. In tropical agriculture, the vagaries of weather induce large fluctuations of market supplies which put producers at risk for poor harvests as well as for bumpy harvests. Therefore, physical regulations of supplied amounts may be wise considering which requires agreed programming of planting with farmers' organizations. De-stocking options may also be envisaged for livestock.

National processing of agricultural products may increase the added value of national agriculture, but may not significantly increase farmers' income. Policies and regulations are needed for ensuring a fare share of added values. Contractual approaches between stakeholders within a production chain have proven to be effective for the development of win- win solutions. This applies in particular for exported products.

There is a large need for a development of research and development related to policies for marketing access, which should involve other institutions than agricultural research institutions.

- *Development of infrastructures and facilities, services and partnership*

The development of marketing infrastructures is not a priority domain for Research and Development. However, the development of facilities for facilitating emerging markets is of great interest. Financing mechanisms, insurances, stabilization mechanisms should be evaluated. The promotion of local market institutions involving farmers' organizations and the programs for empowering entrepreneurs is of great importance.

- *Promotion of innovative decision making processes*

Decision making processes for production and marketing are closely related. The promotion of Research and Development programs for linking the process of marketing, and particularly the promotion of marketing intelligence for farmers, and the planning of production would generate a wealth of innovative decision making processes.

- *Empowering people through information, education and the mitigation of risks*

In the domain of marketing agricultural products, the emergence of new Information and Communication Technologies opens a wealth of potentials for empowering farmers, dealers and financing institutions with improved access to data and advisory service for commercialization.

► Conclusions

The empowerment of people for the progress of rural development and agricultural production is finally the main goal of all R&D, better than technical innovations only. The shift from focus on commodities to a focus on people may require significant adaptation of the paradigms, concepts, methods, alliances and outputs in Research and Development for agriculture.

Appendix 2: Short versions of the Annexes to the Annotated Agenda

Short versions of Annexes to Annotated Agenda

RISDP and Research & Development in Short

By A. Ange

Sustainable food security and rural development are intricate issues addressed in a detailed manner by RISDP. Member States are required to promote agricultural production and productivity, to take measures that increase competitiveness and promote trade. Member States are also required to improve access to food for vulnerable populations and support improvement of the nutritional value of food, to minimize food losses and to address food safety. Food Security Policies and Strategies should be embedded into policies and strategies for rural development and agricultural production. **Agricultural research policies, education and training policies, extension strategies, institutional development strategies for the development of effective and efficient Research and Development policies and strategies should be active sections of policies and strategies for Rural Development and Agricultural Production**.

At regional level, Agricultural Research and Training in the SADC Secretariat has provided a **platform** for closer interaction and collaboration between National Agricultural Research systems (NARS) and scientists within and outside the region. However, it is clear that this function has not addressed the key issue of developing an environment for researchers in every institution in the Member States to remain on the knowledge and technology frontiers, and to support increased efficiency of the utilization of resources for agricultural research. It is also clear that the success of integration of regional research directly depends on the performance of the NARS that has been constrained by limited capacity, especially in terms of size, funding and human resources, and weak linkages with local and international partner institutions. But the performance of NARS has also been limited by inadequate design of mandate, institutional set-up and policies in many countries. Progress will be gained by **a reform of both the regional research institutions and the national research institutions** which would provide grounds for new and accurate development in science and technology. Therefore, from the actual platform, it is necessary to develop an institutional set-up which will address research and development policies, assist the Member States in elaborating their strategies and the corresponding work programs and when needed institutional reforms. This set-up will be participatory and established under the direct supervision of Member States or it will not be effective.

The **poor linkage between Research – Farmers – Extension** is still prevailing in most countries and there is little hope for better public support to agricultural research, training and extension if this situation is not steadily improving. The decreasing budget support to public extension services is affecting all developing countries. Therefore, better than only resisting to this trend, partners in the Member States are conveyed to develop new partnerships, new institutional set-ups and new funding mechanisms which would actively involve the civil society, the farmers organizations and the private sector as it is presently the case in all developed countries and many intermediate countries. It is clear that this improvement will hardly be achieved if the **capacities of farmers' institutions** to participate in research and dissemination of research findings and training are not developed. It is also clear

that **alliances with the organizations of the civil society and with the private sector** operating in agriculture and rural development are important assets for success. The required changes need a sharp review of the paradigms, of the roles and functions of every partner. They should be supported through a revision of the allocation of working means to the stakeholders.

Agricultural science is a component of Science and Technology development. Improving linkages between hard sciences, sciences in non agricultural domains and science in agriculture is vital for developing breakthroughs in agriculture. The light bulbs were not discovered while attempting to improve the candles. Crossing research disciplines is a necessity. Such connections are necessary in Information science, Biometrics and Modeling science, Earth science, Chemistry and physics, Energy, Machinery, Processing and industrial science, Environmental sciences, Social and Economic sciences. In most countries in the region, expenditures on research and technology development (R&D) is way below the worldwide identified threshold for effectiveness in R& D, i.e. 1% of the GDP, which is jeopardizing future progress. In addition, the contribution of the private sector for scientific development adapted to the need of the region is weak, while still international R&D development not related to the regional needs provides from far the largest budget contribution to innovations that are currently developed in agriculture (genetics and breeds, agro-chemicals, machinery, engineering of processing, financial engineering, trade methods, etc). **International cooperation is necessary for addressing those issues and should be reinforced**.

Agricultural Training should also benefit from effective crossing of knowledge acquisition from training on hard sciences quoted above, through adaptation of their outputs to the needs of trainees in agricultural science. There is also a need to reevaluate the combination of general education and knowledge transfer to the rural population and the extension messages, through a vision for empowerment addressing in particular the sustainable use of natural resource, entrepreneurship and investment, local organizations, understanding of laws and regulations, and access to market information.

Research and Development in Agriculture is far from reaching the capacity developed in the industry worldwide. This situation results from the combination of the lack of vision based on theoretical models for R&D in agriculture in the region, from the lack of partnership, from the lack of trained human resources. The region should embark in the **innovation chains systems** within organized production to consumption chains that have been successfully developed by the industry and have been developed for agriculture in developed countries and now in several intermediate countries, adapting the approaches to its own conditions.

The Dar Es Salaam Declaration in Short and comments

Medium to long terms objectives

The Dar Es Salaam Declaration is a commitment of SADC Member States to increase their support to agriculture in order to improve rural development and agricultural production, thus reducing food insecurity, poverty and vulnerability and increasing the economic output of agriculture for the benefit of all national economies. This increase should address institutional development, investments, support to agricultural progress and human resource development as well as better involvement into international negotiations related to agriculture. It is extremely important **that this commitment for more budgetary and policy support to agriculture and rural development would have a balanced impact on Agricultural Research, Training and Development**, which is not yet explicated in the Declaration.

The Declaration requests the development of demand driven, client oriented, participatory agricultural research and extension development, which would encompass the enhancement of food production, productivity and the overall availability of food and agricultural products, the sustainable utilization of natural resources, improve access to safe and nutritious food and contribute to disaster preparation and mitigation. This research should contribute to mitigating the impacts of HIV and Aids on the rural population. Indeed, the Research and Development Regional program should embrace all issues related to Rural Development and Agricultural production.

Short term objectives

The Declaration establishes a comprehensive list of strategies and objectives on the short term which are **all of concern to agricultural research, training and extension**.

- development of inputs use in agriculture
- mechanization and motorization in agriculture
- access to land and natural resources
- improvement of the availability and productivity of farm labor
- development of crops, livestock and fisheries production
- development of non conventional productions
- development of water management and irrigation
- facilitating market access
- facilitate private sector development in agriculture
- facilitate human resource development in agriculture and food security

Application of the Dar Es SALAAM Declaration for the regional program R&D in short

► The domain of **agricultural inputs** is an extremely important one for the progress of agricultural production and food security and for rural development. The development of inputs use by farmers will result from the combination of the availability of affordable and efficient inputs, timely delivered and properly packaged, of the availability of accurate advisory service on their use, of financing arrangement for facilitating access, of favorable production conditions and marketing conditions for investments in inputs use. A large part of such conditions can be improved through the local organization of farmers sharing comparable production goals and conditions. This is mainly a matter of policies and regulations. However, research and extension have a key role in building a conducive environment. Those responsibilities should be shared by the private input sector who is taking the benefits from increased inputs use as well. Research has acrrued responsibility into the quality control of inputs. It is the responsibility of research to develop knowledge about interactions between inputs use by agriculture and health, nutrition, natural resource and the environment as well as on the income and well being of people. This impact analysis may hardly be the responsibility of agricultural research alone. Chemical science, Environment science, Medical science and Social and Economic sciences should be involved. Close partnership between research and extension is necessary to promote awareness of the public.

Developing affordable and effective inputs from local resources and existing industries may well be possible. Such development cannot reasonably be implemented by agricultural research alone but should mobilize the concurrence of hard science and other sciences, and in particular industrial science and economic science. **Research has responsibility for documenting on a neutral basis those files for decision makers in governments**. As far as seeds are concerned, the capacity to produce the diversity of varieties and breeds needed by farmers is the main issue in order to reserve bio-diversity, a major aspect of risks mitigation. The property of seeds and breeds should be maintained in the hands of farmers' organizations as much as possible. As far as pesticides are concerned, the wise selection of products and the design of conditions for their use and for the safe management of stocks and containers, including the destruction of obsolete and dangerous products are issues of growing importance. **As far as mineral fertilizers are concerned, the capacity for innovation is not in the hands of agricultural research, but should combine Chemistry research, industrial research and marketing research with agricultural research**. The private sector should be heavily involved in the search for solutions. Financing fertilizer distribution is an issue of considerable importance, and financial and marketing research should be combined with Agricultural research and Social science. Agricultural research and extension have shared responsibilities for the wise and safe use of inputs maximizing production and income and properly supplying markets. Agricultural research has responsibilities for analyzing costs components of inputs at farm gate and to propose accurate solutions for cutting those costs. The development of inputs use should be closely related with the progress of methods for mitigating economic and natural risks for farmers. **Agricultural research and extension have responsibilities for the development of local infrastructure**

and facilities which will provide flexibility, empowerment and self sufficiency for farmers, and for developing risk mitigating strategies and methodologies.

► The domain of **mechanization and motorization of agriculture** is second to the domain of inputs use and closely related to it. Without adequate credit system, spare parts distribution and repairs services, the development of mechanization and motorization may hardly take place. The partnership with the private sector is the basement of all developments. The price of fuel for farmers in order to run motorized equipment is a key issue. It is the duty of research and extension to cooperate with the private sector in order to identify, to try, to evaluate feasible alternative solutions and the methodology for their adoption. Existing materials and processes already available worldwide should be largely explored. Active participation of farmers' organizations is necessary. Combination of systems should be preferred to single systems at farm level. Training of all stakeholders involved in machinery is necessary (industrialists, blacksmiths, dealers, farmer, entrepreneurs,…). A full fledged research and development program is needed at provincial level in all Member States that should be backed by coherent policies. The development of infrastructures and facilities should be based on the evaluation of markets for the corresponding products which relays on the outputs from research and development programs. However, this development is based on the contribution of Engineering science, Marketing science, Economic science together with Agricultural science and to some extent to Social science because adoption of machinery heavily changes human relationships on farm and within collectivities. This development is heavily dependant on macro-economic arrangements facilitating imports/ manufacturing of the equipment and spare parts and supplying energy to rural areas. It also heavily depends on arrangements organized by governments for facilitating the development of local industries.

The development of mechanization and motorization is all about the empowerment of people through the improvement of labor productivity and of the use of the land. There is little development potential for Mechanization and Motorization if land rights are not cleared, if conditions are not supportive for the use of inputs, if labor price is artificially maintained very cheap, if prices given to farmers are not balanced with investments costs for producing better or if the vagaries of those prices are high. Therefore, the development of Mechanization and Motorization are conditioned by the empowerment of farmers' organizations so that the problems above are properly addressed. Information and education are key issues and a systemic approach of farming is a pre-requisite for a proper insertion of machines in the production systems and livelihoods. **Therefore, decisions for supporting mechanization and motorization require in most cases a sharp revision of research and development approaches in rural areas.**

► There is a need for updated diagnosis of the prevailing situation on **rights and access to natural resource** in most provinces of the Member States, which should encompass the analysis of the expectation of stakeholders of the land. Land development requires land use planning. Such exercise requires the combination of an accurate diagnosis by Earth Science and Biological sciences of Strengths, Weaknesses, Opportunity and Threats on the area proposed for this planning. This diagnosis has to be participatory and important theoretical developments are required for combining local traditional knowledge and modern knowledge on land management and the optimal development of resource at community level. The

improvement of the insertion of livelihoods into development planning is still an unresolved scientific problem in most countries. Land use planning requires institutions form the grass root village level to the county level and provincial level. It has a heavy legal component. Inserting local infrastructures into the land for agricultural purposes or for harnessing natural resource should be thought within a land use planning exercise. Interactions between improved access to machinery, inputs and credit, between the emergence of local farmers' organizations and the development of land are the key issues for Research & Development. Exchange of experience and questions within the SADC region would provide momentum for progress.

► **Improvement** of the availability, competence, involvement in economic activities and remuneration **of farm labor** is a complex issue that may hardly be addressed in short term by research and extension. Interactions between technical innovations and farm labor are important. However, action on land use planning, developing infrastructures, promoting diversification of activities, opening markets, facilitating the development of entrepreneurship, development of farmers' organizations and contractual arrangements within the production to consumption chains are often per-requisites for adoption of any technical innovation that would impulse the improvement of labor use and the efficiency of labor. Special attention has to be given to the gender issue and to the insertion of youth in rural activities. There is an obvious need of co-operative R&D programs on the issue of developing farm labor in the region.

► **Development of crops, livestock and fisheries production and development of non conventional productions should be combined for the promotion of livelihoods.** Rural development and the progress in agriculture are much more than the control of pests and diseases and the progress in genetics. There is a need for the formulation of accurate development policies which would consider the farmer as the master piece of development in rural areas and the necessary promotion of partnerships and investments. Progress in the productivity of labor in the one hand and risks mitigation in the other hand are the key issues and those goals cannot be achieved without investments. Thus the a conducive environment should be organized for a huge number of resource poor farmers so that investment makes sense to their perception of the progress of their livelihoods and can generate value for money. The weaknesses of research in agricultural policies, the lack of scientific analysis of the impacts of running policies should be corrected.

The first physical infrastructure needed for rural development is rural road properly connected to feeder roads. The second infrastructure that has proven to be very effective for rural development is electrification. The third infrastructure of importance is related to water supply/ water monitoring, but sharply depends on the availability and cost of distribution of water. In conditions where livestock is an important activity, fencing has also made possible tremendous progresses. But immaterial goods have also proven to be very effective in rural development: information and credit, mutual insurance, social organization, fair regulations and justice. It is important that Research and Development would explore innovative facilities for providing knowledge to farmers, as already initiated through farmers' fellowships, farmers' field schools and other training by doing.

The provision of services to the producers is in general the most lacking factor of progress in agriculture. The difficulty lays into the grouping of all main services at community level. Cooperation with the private sector on clear contractual basis with a win- win orientation should be developed. It is an important duty of Research and Development to experiment innovative services and partnership providing capacity and knowledge to the farmers' organizations, to identify the relevant institutions, regulations and development pathways for innovative services and the corresponding evolution of partnership. A particular attention could be given to the development of innovation chains within developing production chains associating stakeholders for shared profits. A particular attention could also be given to Innovation and Management groups of farmers developing innovative coordination between improved land use and innovative farming systems fitting with their livelihoods.

Technical innovations should fit with the income raising and consumption systems of families as well as with the technical rationale of the sequence of technical acts of production. Technical innovations should fit with the social representation of value for money, of efficacy of labor and investments. Technical innovations should secure social groups through the promotion of capitalization and social organization. In this respect, the contribution of innovations to the capitalization process has been quite neglected. Technical innovations should contribute to the development of employment and income raising, particularly for the forgotten: women, youth, marginal classes of the rural society. In this respect, diversification of production systems and the insertion of non- conventional productions are of interest. More than isolated technical inventions, research and development should promote through accurate partnership with all necessary stakeholders the development of articulated systems of innovative techniques and decision making process which would provide flexible response to a domain of problems for a rather diverse clientele. Impact analysis of the proposed decision scenarios and involved technical innovative actions or processes should be evaluated with the expected beneficiaries in contrasted situations and lessons learnt should provide basis for guides for users. Economic and social issues are of primary importance in this evaluation. As far as those conditions may evolve rather quickly, generations of innovative schemes are preferable to recommendations. It is clear that the development of the corresponding participatory and open-ended research approach accepting to provide approximations of solutions shared with the beneficiary and adapted by them according to their changing environment requires the training of scientists and information and training specialists. Many aspects of this approach are derived from marketing science: no product has value without identified clientele.

The empowerment of people for decision making and mobilizing the appropriate or best available answers to their problems is an important component of the duty of Research and Development. Providing the accurate information within the understandable language for the targeted clientele according to the prevailing questions and problems is a very difficult task. Achieving this task requires the combination of a diversity of skills.

► **Water Management and Irrigation** should be inserted in the general picture of the multi-purpose use of water for development. First of all, in many major tropical catchments, flood control and water management for agriculture are intricate issues. The size of infrastructures dictates the social and economic management of the water

that they manage, which is far from neutral for agricultural development. Therefore, the policy for water is very much depending on what intentions are for the use of water. Improved water management in agriculture requires accurate policy support and effective regulation if the wastage of water resources is to be addressed on an efficient manner. Research has a key role to play in modeling the different options for using water for agriculture at major watersheds level, at medium watershed level and in small catchment areas. Earth science has a key role in this work. Water use systems, water users associations and arbitration mechanisms should be put in place. As far as water is used for agriculture, the efficiency of water for producing agricultural goods and the cost of water are important issues. Cleaning water and withdrawing polutants from water will be a growing issue and agriculture may provide some solutions and generate many problems. The pricing of water for agriculture is a growing issue in most countries and requires accurate and finely tuned policy. There is an obvious need for reinforcement of research and development capacity on the domain of water policy.

While large scale infrastructures for water management are public by nature, most infrastructures servicing water for agriculture will be at medium scale and small scale in order to provide vicinity and flexibility for water use. Cost-sharing with local communities and farmers' organizations then apply. Facilities should be developed for such investments through accurate financing systems, advisory services and technical support. The issue of maintenance is of importance. Water users associations are emerging worldwide. Problems still occur for sound management of such organizations, but by and large outputs are rather positive for improving water sharing, water efficiency and the payment of water by users. Various partnerships between farmers' organizations, the private sector and local administrations have been settled with some successes. The promotion of services for equipment and maintenance involving the private sector is necessary. All options should be scrutinized by Research and Development.

In water management and irrigation more than in other fields of agricultural development, innovation has to be shared by the stakeholders and success depends on information and training. No technology can be successfully promoted in this domain without accurate and appropriate decision making process. Therefore, a systemic approach of innovation should be preferred. The modernization or the rehabilitation of irrigated areas is an important challenge in many provinces, which requires the combination of approaches and competences. Institutional capacities fro Research and Development in irrigation technologies should be reinforced.

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► **Facilitating Market Access** requires first of all an updated cognizance of existing and potential markets, of their dynamics and potential expansion, of their weaknesses and threats. Modeling the impact from empowering some key actors has some

importance for identifying policies. Agricultural markets for the main commodities are very much related to the purchasing capacity of consumers. In tropical agriculture, the vagaries of weather induce large fluctuations of market supplies which put producers at risk for poor harvests as well as for bumpy harvests. Therefore, physical regulations of supplied amounts may be wise considering which requires agreed programming of planting with farmers' organizations. De-stocking options may also be envisaged for livestock. National processing of agricultural products may increase the added value of national agriculture, but may not significantly increase farmers' income. Policies and regulations are needed for ensuring a fare share of added values. Contractual approaches between stakeholders within a production chain have proven to be effective for the development of win- win solutions. This applies in particular for exported products. There is a large need for a development of research and development related to policies for marketing access, which should involve other institutions than agricultural research institutions. Financing mechanisms, insurances, stabilization mechanisms should be evaluated. The promotion of local market institutions involving farmers' organizations and the programs for empowering entrepreneurs is of great importance.

Decision making processes for production and marketing are closely related. The promotion of Research and Development programs for linking the process of marketing, and particularly the promotion of marketing intelligence for farmers, and the planning of production would generate a wealth of innovative decision making processes. The emergence of new Information and Communication Technologies opens a wealth of potentials for empowering farmers, dealers and financing institutions with improved access to data and advisory service for commercialization.

► Conclusions

The empowerment of people for the progress of rural development and agricultural production is finally the main goal of all R&D, better than technical innovations only. The shift from focus on commodities to a focus on people may require significant adaptation of the paradigms, concepts, methods, alliances and outputs in Research and Development for agriculture.

Appendix 3: Presentations made at the Meeting

The SADC Food, Agriculture and Natural Resources (FANR) Directorate

One of the four Directorates of the SADC Secretariat

Its mission is:

- To provide strategic expertise and coordinate the harmonization of policies and strategies to accelerate regional integration and sustainable development

1

Objectives

- To develop, promote, coordinate and facilitate harmonisation of policies and programs to increase agricultural and natural resources production and productivity
- To promote trade, food security and economic development in the region on a sustainable basis.

2

Specific Functions

- Development, promotion and facilitation of harmonisation of agricultural policies
- Ensuring sustainable food security policies and programs
- Strengthening regional capacity for agricultural research ….

3

Specific Functions *contd*

- Harmonisation of policies and programs aimed at effective and sustainable utilization of natural resources
- Development and harmonisation of sound environmental management policies; and
- Promotion of trade in agricultural products

4

Priority Intervention Areas

- Ensuring food availability
- Ensuring access to food
- Promoting improved food safety and nutritional value of food
- Ensuring disaster preparedness and awareness for food security
- Strengthening institutional frameworks and capacity building

5

Programmes

- Agricultural Information Management Systems (AIMS) which includes Early Warning System, Remote Sensing, Drought Monitoring Systems and the Regional Food Reserve
- Crop Development, which includes seed Security, Plant Protection, Food Safety and Agricultural Trade
- Livestock Development

6

Programmes..*cont*

- Agricultural and Natural Resources Research & Development;
- Natural Resources Management, comprising Fisheries, Forestry and Wildlife; and,
- Environment and Sustainable Development

7

Agricultural Research and Development Unit

Objective

- To promote partnerships in agricultural research and development,
- Improve regional research and training coordination and integration,
- Improve the information and communication system and
- Review the institutional framework

8

R & D Challenge

- To develop new technologies so that the region can compete in the global economy
- Develop technologies to meet market demands and contribute to food security.
- To provide agricultural innovations that will increase crop and livestock production.

9

On-going Programmes

- Implementation and Coordination of Agricultural Research and Training in the SADC Region (ICART)
- Competitive Grant Fund for Innovative and Regional Collaborative Projects in support of the small-scale Farmer Development (FIRCOP)
- Land and Water Management applied Research Programme
- The SADC Plant Genetic Resources Centre
- Sub Saharan Africa Challenge Program

10

Programmes under Development

- SADC Multi Country Agricultural Productivity Program (SADC MAPP)
- FARA Regional Agricultural Information & Learning Systems (FARA RAILS)
- DONATA
- SCARDA

11

Portfolio of projects run by the R&D Unit in FANR

On going Projects

- SADC Plant Genetic Resource Center – SGPRC
- Land & Water Management applied research
- Competitive Grant Fund for Innovative and Regional Collaborative Projects in support to small scale farmers development – FIRCOP
- Implementation and Coordination of Agricultural Research and Training in the SADC Region – ICART
- Sub-Saharan Challenge Program – Section Zimbabwe – Malawi – Mozambique (SSA-CP-ZMM)

Projects under development

- SADC Multi- country Agricultural Productivity Program – SADC MAPP
- FARA Regional Agricultural Information Learning Systems (FARA – RAILS)
- Dissemination of New Agricultural Technologies in Africa (DONATA)
- FARA Regional Program for capacity Building (under formulation) – SCARDA – BASIC
- Promotion of Science and Technology for Agricultural Development

THE FANR RESEARCH AND DEVELOPMENT UNIT

Mandate, Status and Program of Work

The Regional Indicative Strategic Development Plan orients the activities for R&D in agriculture

- Sustainable food security and rural development are intricate issues
- The linkage between Research – Farmers – Extension should be improved
- Improving the capacity of farmers' organization is a priority
- Agricultural science is a component of Science and Technology development
- The actual "platform for R&D" in FANR replacing SACCAR should provide an enabling environment for national institutions
- It should support increased efficiency of the utilization of resources for agricultural research

Action taken for implementation of RISDP

- Adapt mandate, paradigms, methodologies and partnerships
- Increase the working means
- Improve the dialogue with institutions in Member States and International Cooperation Partners
- Re-establishment of accurate Technical Committees connecting FANR-R&D Unit with stakeholders in R&D
- Develop shared agendas

The Dar Es Salaam Declaration on Agriculture designs the Priorities for R&D

Medium and long term

- Promote budget allocation to agriculture and R&D in agriculture
- Promote policies and strategies for R&D facilitating regional integration

→ Action taken

Reviewing research policies and insertion into agricultural policies
Reviewing evolution of budget and human resource allocation
Reviewing research programs and activities of research networks

The Dar Es Salaam Declaration on Agriculture designs the Priorities for R&D

Short term objectives

- Development of inputs use
- Mechanization and motorization
- Access to land and natural resources
- Improvement of availability and productivity of farm labor
- Development of crops, livestock and fisheries production
- Development of non- conventional productions
- Development of water management and irrigation
- Facilitating market access
- Facilitate private sector development
- Facilitate human resource development and food security

The program of work should be identified with Member States

Mandate and status of FANR R&D Unit

- To promote partnerships in the area of agricultural research and development
- To improve regional research and training coordination and integration
- To promote the development of research outputs
- To improve the information and communication system
- To review the institutional framework

→ One Senior Officer R&D
support from a Technical Assistant [FRANCE]

►Lacking budget support, action on R&D depends on donors' funded projects

BROAD AGENDA for the Technical Committee for Agricultural Research, Training & Extension

- Building the integration and development of R&D
- Setting the vision and the strategies
- Application of the Dar Es Salaam Declaration
- Financing R&D in SADC
- Setting priorities for research and development
- Promoting cooperative programs
- Reinforcing participation from Farmers' Organizations and contribution from the Civil Society and the Private Sector

The Implementation and Coordination of Agricultural Research and Training (ICART) in Southern Africa

FANR Consultation Meeting with Directors of Research and Extension
Johannesburg
29-30 March 2007

1

Introduction

- Project is housed within the Directorate of Food, Agriculture and Natural Resources (FANR) within the SADC Secretariat
- EU supported to the tune of € 15 million; agreement signed in Nov 2003
- Implementation over 5 years (2006 – 2010)

2

Overall Objectives

Contribute to regional **economy growth** and **poverty alleviation** by **promoting innovative research and training** activities to overcome the constraints to **sustainable use of natural resources** with **improved technologies** and **policies** that will **enable resource-poor** smallholders to **achieve improvements** in their livelihoods.

3

Project Purpose

Improve NARS **capacity** to manage research networks, implement common research and develop regional opportunities **addressing regional constraints** for **improving incomes of small-scale farmers** and **other end-users** in the SADC region

4

Main components

- The ICART project is composed of **four** components with **six** main result areas
- **Component A: Institutional support to the SADC Secretariat** (€ 3.60 million)
- **Component B: Support to Research Networks (RN) development** (€ 2.95 million)
- **Component C: Regional Research Projects to be implemented through mechanisms of competitive grant funds** (€ 5.60 million)
- **Component D: Specific activities of Information, Communication and Training** (€ 2.35 million)

5

Component A: Institutional support to the SADC Secretariat

- **Result Area 1**:SADC secretariat has the regional capacity to coordinate agricultural research and training

6

Component B: Support to Research Networks (RN) development

- **Result Area 2**: Research networks are established in accordance with the research priorities for the SADC region

7

Component C: Regional Research Projects implemented through competitive grant funds (CRARF)

- **Result Area 3**: The competitive grant system has improved regional performance of the agricultural research and training. The competitively funded regional projects have been demand driven with a priority given to small-scale farmers development

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Component C: (contd.)

- **Result Area 4:** Competitively funded research projects are providing results to address rural development priorities and technologies for:
  - Efficient use of natural resources and improvement of sustainable market-oriented smallholders' production systems.
  - Natural resource conservation, with focus on soil, water and biodiversity.
  - Research-farmer-extension linkages and developed farmers' organizations are improving transfer and adoption of technology to support the agricultural production systems.

Component D: Specific activities of Information, Communication and Training

- **Result Area 5:** A regional research information and communication system based on regional Research & Development outputs is providing products to disseminate the programme results and support rural development
- **Result Area 6**: The sub-regional Scholarships fund has strengthened the sub-regional MSc programme and the technical training capacity in agricultural and veterinary sectors **(Regional Training Programme, RTP)**

Progress so far

(March 2007)

Background (I)

- Project was developed as an 8th EDF supported project but is being financed under the 9th EDF, with a different set of rules
- D+3 rule: Funds for special commitments, especially grant contracts and budget estimates have to be committed within 3 years of signature of project financing agreement (by Nov 06)
- Therefore, actions had to be initiated prior to the arrival of Project staff to satisfy the D+3 rule

Background (II)

- €10.2 million of € 15 million foreseen for the project has been committed before D+3 date
- A second Financing Proposal has been submitted to use the balance (after some inevitable losses) of funds remaining, to complete the activities planned for ICART which could not properly be addressed by D+3
- Agreement has to be approved and signed by December 2007

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Background (III)

Implementation of ICART (2006-2010)

- ICART-1 (2006-2010)
  - Strengthening Capacity of SADC
  - CRARF & RTP Award and Monitoring
  - Capacity building (Networking/Proposal Writing)
- ICART-2 (2008-2010)
  - Support to networks
  - Consolidating ICT & ICM
  - Capacity building

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Component A: Support to SADC

- Project Management: Administrative and financial issues planned and executed (Staffing; Programme Estimate 3, Office; Equipment)
- Strategy for implementing project beyond D+3 developed, submitted
- Steering Committee established; meeting twice a year
- National Focal points for ICART project identified for all Member States
- Coordination meetings with other programmes and projects within the FANR Directorate
- First Stakeholders' assembly, September 2006
- Situation analysis of Research and Training initiated
- Consultation meetings ICT, Research, Extension, Deans (& networks in mid 2007)
- Project Monitoring & Evaluation System to be developed

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Component B: Support to Research Networks (RN) development

- Component B not adequately addressed until and due to D+3
- Issue discussed at 1st Stakeholder's Assembly
- Competitive Call for proposals for network support is not the preferred option
- Capacity building actions involving networks to be launched in 2007– Networking; Proposal Writing; Management of Projects and Networks
- Situation analysis of Research and Training in the region will inform of needs for support to networking activities
- Consultation process during 2007, workshop with current research networks and regional stakeholders, leading to a strategy for support to Networks
- Staff to be recruited in ICART-2 specifically to implement strategy for support defined by start of 2008 (3 years of implementation)

16

Component C: Regional Research Projects to be implemented (CRARF)

- Call launched Nov 05, Awareness workshop, help desk, closed end of March 06
- 49 project proposals received
- Team of 4 assessors evaluated 34 proposals for technical and financial qualities
- Assessors based their assessment on the RISDP, Dar-es-Salaam declaration and the Guidelines to the Call for proposals

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CRARF - Overview

- Strengthening of appropriate technology generation for small-scale farming
- Technology development for the processing of agricultural products
- Empowerment of small-scale farmers and development of production chains and production to consumption chains
- Agriculture and the environment
- Agricultural policy and development of services to agriculture
  - Impact of adopted agricultural policies
  - Improved services to agriculture
  - Mitigating measures for food security
  - Diversification and intensification of agricultural production systems

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CRARF - Overview

- Call described the necessity for innovative research
- Clearly demonstrate and articulate the demand
- Should not be development projects
- Capacity building
- Communication plan

- 7 CRARF Grant contracts have been signed
- Start dates in November 2006, January and July 2007 for 3 years.
- Projects implemented in 10 of the 14 SADC Member States

19

CRARF Grants awarded

20

ICART CRARF GC 001/006

Agricultural Research and Capacity Building Programme (ARCB) for post-conflict regions of the Republic of Angola and the Democratic Republic of Congo

World Vision; Agricultural Research Institute (IIA); Angola National Institute of Agricultural Research (INERA) DRC

Locations: Huambo in the central highlands of the Republic of Angola and Bas-Congo and Kinshasa regions in the Democratic Republic of Congo (DRC).

€ 998,950

21

Objectives

- To revitalise the capacity of the NARS in Angola and DRC
- To carry out demand led research

Overall Objective 1 will promote the participative and adaptive evaluation and demonstration of improved technology packages for demand-led crop production and practices for the sustainable improvement in soil fertility practices

Overall Objective 2 will empower smallholder farmers that are organized in terms of production processes, business capabilities and market information/linkages - 47 different crop varieties are evaluated (16 maize, 6 rice, 10 soybean/beans, 5 groundnut, 10 Irish Potato)

22

ICART CRARF GC 002/006:

Linking the production and marketing chain for development of smallholder agricultural commodities using sesame in Mozambique and Tanzania as model

Natural Resource Institute (UK); Naliendele Agricultural Research Institute (Tanzania); Economic and Social Research Foundation (Tanzania); The Savings and Credit Cooperative Union League of Tanzania [SCCULT] (19920 Ltd); TechnoServe Inc. (Mocambique); Instituto de Investigacao Agraria de Mocambique - Centro Zonal Nordeste [IIAM] (Mocambique)

Locations: Mozambique and Tanzania

€ 610,205

23

Objectives

- Increased production and marketing of white sesame by smallholder farmers
- Address constraints to production and marketing of sesame
- Evaluate appropriate integrated crop management packages for the new high value sesame varieties developed by the NARS
- Research seed supply systems to meet smallholder demand that the project is expected to create
- Policy research to provide evidence for policy change that favours investment by producers and traders in sesame and agricultural commodities in general.

24

ICART CRARF GC 003/006:

Environmental and human health impact assessment of quelea bird control in southern Africa and novel means of harvesting quelea birds for protein and income generation

Natural Resource Institute (UK); Agricultural Research Council - Plant Protection Research Institute (RSA); Ministry of Agriculture, Plant Protection Division (Botswana); The Ministry of Agriculture, Food and Co-operatives of the United Republic of Tanzania

Locations: Botswana, Tanzania

€ 472,321

25

Objectives

1.Extent of environmental effects of quelea control established on the basis of increased knowledge of environmental and human health impacts

2. Potential of farmers to increase protein supplies and income enhanced by

- Efficient techniques to trap and harvest quelea birds
- Efficient techniques to process and preserve quelea birds
- Development of farmers' access to markets, both nationally and internationally, to sell processed quelea birds.

26

ICART CRARF GC 004/006:

Development of Ecologically-Based Rodent Management for the SADC Region

Acronym: ECORAT

Natural Resource Institute; Agricultural Research Council (RSA) - Plant Protection Research Institute; Durban Natural Science Museum (RSA); National Museum of Namibia; Sokoine University of Agriculture; University of Swaziland

Locations: On-the-ground activities are confined to Namibia, Swaziland and Tanzania

€ 620,883

27

Objectives

- To strengthen the generation of appropriate, cost-effective and sustainable technologies for rodent pest management in small-scale farming for the SADC region.

1. Cost-beneficial rodent management strategy developed for small-scale farming communities
2. Rodent ecology better understood
3. Extension programmes beginning to adopt rodent intervention programmes by end of project
4. At least 8 scientists trained from Namibia, Tanzania and Swaziland on rodent research for the development of ecologically-based rodent management
5. SADC research institutions pro-actively supporting rodent research activities

28

ICART CRARF GC 005/006

Caesalpinioid woodlands of Southern Africa: Optimising the indigenous use of pesticidal plants- Southern African Pesticidal Plant project (SAPP)

Natural Resource Institute (UK); Department of Agricultural Research Services, Lunyangwa Research Station (Malawi); World Agroforestry Centre (ICRAF) (Zambia); University of Zimbabwe; Southern Alliance for Indigenous Resources (Zimbabwean NGO); Royal Botanic Gardens, Kew (UK); Mzuzu University (Malawi)

Locations: Malawi, Zambia, Zimbabwe

€ 690,146

29

Objectives

- To strengthen generation of appropriate, cost-effective and environmentally sustainable technologies using local plant materials for pest management in small-scale farming in the region:
  - Indigenous use and distribution of botanical pesticides surveyed
  - Active chemical components determined
  - Vertebrate toxicity determined
  - At least one botanical pesticide validated for use in the Region on each of stored grain, vegetables and livestock.
  - Sustainable production and supply of these to farmers established and promoted.
  - At least 5 scientists trained in each country in aspects of development and promotion of botanical pesticides.

30

ICART CRARF GC 006/006:

Livestock and Livelihoods: Improving market participation by small-scale livestock producers

ICRISAT ZIMBABWE; Desert Research Foundation of Namibia (DRFN); Practical Action (formerly Intermediate Technology Development Group) Zimbabwe; Department of Agricultural Research and extension (AREX), Zimbabwe; Agricultural Research Institute of Mozambique (IIAM); International Livestock Research Institute (ILRI)

Locations: Mozambique - Namibia - Zimbabwe

€ 1,000,000

31

Objectives

1. Assess the potential for strengthening commercial livestock production to provide guidance for policy/program design
2. Test & evaluate alternative product marketing systems;
3. Test &evaluate alternative input delivery systems
4. Assess impact of strengthened input delivery & product markets
5. Establish a communication strategy working with farmers, traders and service providers

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ICART CRARF GC 007/006

Community based forecasting for improved cereal productivity and profitability in Malawi, Tanzania and Zimbabwe. (Short working title: Community Based Armyworm Forecasting (CBAF))

Centre for Applied Bio Sciences International (CABI) (UK/Kenya); Plant Protection Research Institute (Zimbabwe); Department of Agricultural Research Services, Bvumbwe Agricultural Research Station (Malawi); Ministry of Agriculture, Plant Health Services, Tanzania; Agricultural Research Council-Public Support Services (ARC:PSS) Plant Protection Research Institute (PPRI) (RSA); University of Greenwich, (UK)

Locations: Malawi, Tanzania, Zimbabwe

€955,000

33

Objectives

- Innovative community based approach for army worm forecasting
- Involves pilot testing, models for scaling up, analysis to determine best forecast procedures, cost benefit analysis and sustainability options
- Community based armyworm forecasting for reduced cereal losses established in Malawi, Tanzania and Zimbabwe.
- At least 70% of armyworm outbreaks successfully controlled by small scale farmers in CBAF areas by end of action.
- CBAF adopted as a national strategy in Malawi, Tanzania and Zimbabwe by end of action.
- Capacity built in innovative research on migrant pests

34

Component D: Information, Communication and Training

- Database developed on details of applicants, partners of applicants, institutions, names of contact persons and addresses from the research and training project proposals received through CRARF and RTP call for proposals (FIRCOP project information also captured)
- Situation analysis has gathered more information from the region that will be entered into the Regional Information System to contain databases of institutions, experts, networks, projects, publications.

35

Component D: Information, Communication and Training

- ICART system to be linked to SADC FANR-Agricultural Information Management System (AIMS)
- Links with other regional information systems such as ASARECA-RAIN, FARA-RAILS and global databases of experts and research projects
- Consultation with regional Agricultural Information Managers (March 07) to start process of developing integrated AIMS
- Newsletter developed and distributed; website

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Component D: Information, Communication and Training Regional Training Programme (RTP)

Scholarship fund under the ICART project aiming to achieve:-

- Increased number of appropriately trained agricultural researchers and high level professionals in the region
- Improvement of the quality of University and high level technical training in the region

37

Component D: Information, Communication and Training (RTP)

- Masters programmes in the Agricultural sector
- Short professional training courses
- Minimum 60% of students from SADC region other than contracted institution's home country
- Funds also to be used for teaching material development
- One year of preparation and two years of implementation of a Masters Level course

38

RTP - Overview

- 17 proposals received
- 15 undergone Technical and Financial evaluation
- 7 proposals recommended for funding-ranked
- Funds available for 4 top-ranked projects
- Start dates for 3 projects in January 2007 and the fourth during August 2007

39

Grants awarded RTP

40

ICART RTP/GC/001/06

Post-Graduate Training to improve skills in Land and Water Management in SADC countries

Sokoine University of Agriculture, Tanzania

€ 350,680.51

41

Objectives

- Proposal to train 15 students in three Masters programmes: Irrigation Engineering and Management, Land Use Planning and Management, and Soil Science and Land Management currently offered at Sokoine Agricultural University.
- Full details of programmes provided as well as expected costs
- The programmes have previously been funded by SACCAR followed by GTZ.
- The programmes remain relevant to the SADC region priorities

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ICART RTP/GC/002/06

Collaborative Masters Programme for Broad-Based Agricultural Training in SADC

(*SADC Agricultural Masters Programme*)

University of the Free State, South Africa

€ 454,088.00

43

Objectives

- Offering their current courses to 12 regional students, 3 in each of the areas of Plant Sciences, Animal and Wildlife and Grassland Science; Soil and Crop and Climate sciences; and, Agricultural Economics
- Students are staff of NARS institutions and fresh BSc graduates from universities in neighbouring countries
- Interactions with these institutions in the region in preparation year to identify the students, devise their research work and plan supervision for the second year of the Masters Programme.
- Contents of the course may be changed if really needed, based on the needs of the students identified.
- Actions for teaching and research work follow normal University structures and provisions made for students to carry out research work back in their country

44

ICART RTP/GC/003/06

Strengthening Participatory Plant Breeding and Seed systems to improve productivity and incomes of Smallholder farmers in the SADC region

University of Zambia, Zambia

€ 285,607.00

45

Objectives

- To strengthen human resource capacities of National Agricultural Research Institutions in plant breeding, biotechnology and seed systems as a means to enhance productivity and value chains, to support improved productivity and incomes of smallholder farmers in the SADC region.
- 12 Masters students (7 foreign) to be enrolled in a Masters in Plant Breeding programme to be trained in participatory plant breeding and seed systems. Univ of Zambia already quite active in this field of research and has managed similar training programmes before, some previously funded by SADC.
- Students to carry out research and field attachments at research institutions located in Zambia (partners in the action)

46

ICART RTP/GC/004/06

MSc and short courses in Dairy Science and Technology

University of Zimbabwe, Faculty of Veterinary and Animal Sciences, Faculty of Agriculture (Zimbabwe); University of Malawi – Bunda College of Agriculture (Malawi)

€ 343,121.61

47

Objectives

- Masters programme addressing the whole production-consumption chain in Dairy Science and Technology in the region. Bunda College of Agriculture (Univ of Malawi also involved in teaching). Regional consultation process leading to the development of the programme as well as stakeholder demand-driven short courses
- 3 training workshops per year (yr 2&3), as part of professional training, using regional competencies
- 15 Masters students trained during year 2&3 of the project
- Research topics to address aspects of the production-consumption chain

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ISSUES

- Strategy for support to networks
- Setting up a common information-base and mechanism for interaction
- Capacity building initiatives
- Implementation of the situation analysis (presentation later)

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Multi-country Agricultural Productivity Programme

(MAPP)

MAPP OBJECTIVES

- To promote agricultural productivity across countries and regions in Sub-Saharan Africa
- To enable countries within region to pool resources and work together in areas of common interest
- To provide mechanisms for African countries to implement more innovative approaches to agricultural R&D

Origin and development of MAPP concept

Development of the MAPP concept started some 4 years ago.
The concept has been prepared with the cooperation of the following key organisations:

- The New Partnership for Africa's Development (NEPAD), an initiative of the African Union (AU)
- The Forum for Agricultural Research in Africa (FARA)
- The World Bank
- Food and Agriculture Organisation of the United Nations (FAO)
- Other stakeholders in the African and International communities

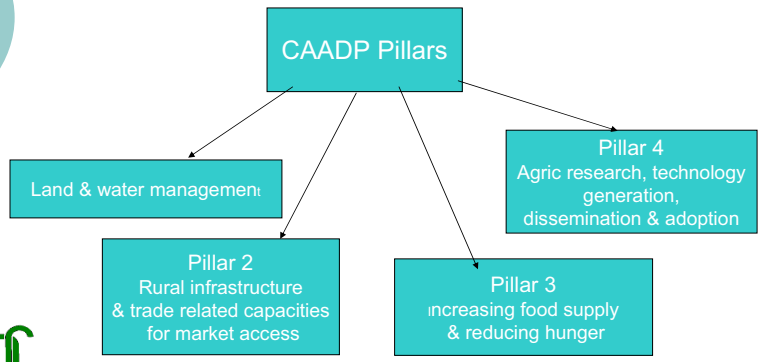
Origin and development of MAPP concept (cont …)

MAPP is intended to translate Pillar 4 of the Comprehensive African Agricultural Development Program (CAADP) of NEPAD into a program of activities

Focus of Pillar 4 of CAADP:

agricultural research, technology generation, dissemination and adoption.

The four pillars of NEPAD's CAADP



5

MAPP Goal

To substantially increase productivity, competitiveness and incomes in African agriculture by improving farmers' access to technologies.

Targets: MDGs and NEPAD – 50% reduction in absolute poor and 6% growth in agricultural GDP by 2015

6

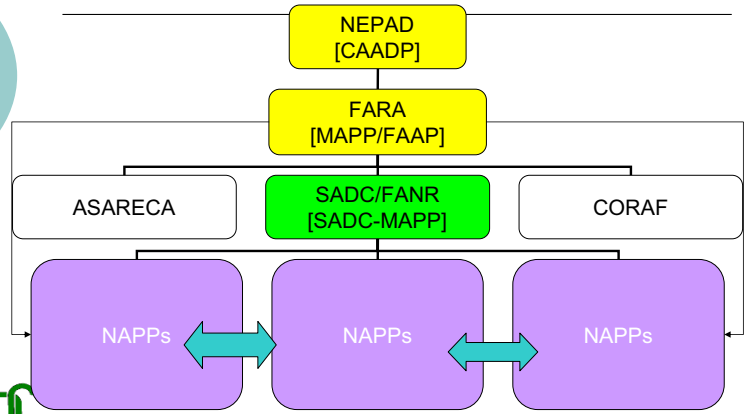
- FARA has been mandated by NEPAD to provide the overall strategy for the implementation of the MAPP across Africa through partnership with the Sub-regional Organisations (SROs), Regional Economic Communities and national governments.
- The vision for African agricultural research developed by FARA and its member SROs are summarised in the "Durban Statement".
- FARA has further developed the Durban Statement and the ideas presented in the MAPP concept document into a framework:

The Framework for African Agricultural Productivity (FAAP)

FAAP will guide development and implementation of the MAPP in the Sub-regions of Africa and in Member States, taking into account Sub-regional priorities and strategies (e.g. the Regional Indicative Strategic Development Plan (RISDP) of SADC)

7

Linkages and relationships between Regional, Sub-regional and National Programs under MAPP



8

MAPP is in line with SADC's RISDP

- Allows for costs and benefits that spill across borders to be shared between Member States in planning and priority setting
- Permits economies of scale
- Makes it possible to establish programmes with a minimum critical mass of staff and facilities
- Avoids unnecessary duplications

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SADC MAPP will promote:

1. Priority activities that are common across Member States and add value to trans-boundary collaboration
2. Stronger linkages between research, extension, education, the NGOs and the private sector;
3. Greater stakeholder involvement in priority setting , project planning and implementation
4. Greater national collaboration in the overall technology generation, dissemination and adoption systems

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FAAP/MAPP Guiding principles

- Greater participation of key stakeholders, especially smallholder farmers, in the definition of research priorities and in system governance
- Greater institutional pluralism in technology development by opening to other service providers e.g. universities
- Greater institutional pluralism in technology dissemination by opening to other service providers, e.g. universities, NGOs, civil society
- Greater market orientation in technology development
- Stronger linkages between extension, research, agricultural education and the private sector
- Subsidiarity in regional programming. i.e. the sub-region (e.g. SADC FANR) should not undertake activities that are more appropriate for implementation at the national or lower level.
- Harmonized donor support for regional activities

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Time horizon for MAPP Implementation

- Improving the efficiency and sustainability of agricultural technology generation and delivery systems in Africa is a long-term challenge
- Therefore, MAPP will be implemented in three phases of about 5 years each, spanning a 15-year period.
- Each phase will build on the achievements and lessons learnt from previous phases.

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- SADC MAPP comprises six technical components or themes

Theme 1
Farmer empowerment and market access

Sub theme	Activity areas
Promoting good practice and capacity building in farmer empowerment	○Promoting information sharing on good practice, lessons learned ○Promoting partnerships with a range of actors (public, private, market, research, advisory services) ○Continuous learning by doing from implementation of partnerships (what works and doesn't) – assessing partnership experiences ○Capacity building to national systems on demand driven basis on how to use farmer organisations for real empowerment ○Advocacy and targeted capacity building to assist national systems to develop farmer empowerment mechanisms, and develop supportive environment for farmer organisations
Promoting good practice and capacity building for agribusiness linkages and private sector development	○Knowledge sharing on lessons learned and good practice in agribusiness linkages ○Developing networks and partnerships with the private sector

Theme 2
Research and technology generation

Sub theme	Activity areas
Support to regional research priorities	○Promoting partnerships, networking and linkages with a range of actors (public, private, market, research, advisory services) ○Inventories to identify national and regional priorities and research thrusts ○Support to priority regional research programmes ○Support to centres of leadership/networks of specialisation ○Support to knowledge sharing
Institutional capacity building	○Capacity building to national systems on demand driven basis on how to reform the research and technology generation systems ○Advocating for a supportive, farmer centred enabling environment for NARS ○Advocacy and targeted capacity building to assist national systems to develop market oriented, farmer led research and innovation systems ○Capacity building to national systems on preparing research proposals and bidding for competitive and other funds

Theme 3
Farmer led advisory services and innovation systems

Sub theme	Activity area
Promoting and out-scaling best-bet technologies	○Inventories to identify potential technologies and practices for scaling out in the region ○Support to national systems to promote methodologies and share successful experiences in market and farmer led technology applications ○Scaling out best-bet technologies
Scaling-out good practices and knowledge sharing on advisory services	○Promoting information sharing on good practice, lessons learned ○Promoting partnerships, networking and linkages with a range of actors (public, private, market, research advisory services) ○Continuous learning by doing from implementation of partnerships (what works and doesn't) – assessing partnership experiences
Institutional capacity building and change	○Capacity building to national systems on demand driven basis on how to reform advisory services ○Advocacy and targeted capacity building to assist national systems to develop market oriented, farmer led advisory services and innovation systems ○Advocating for a supportive environment for effective advisory services and innovation systems (including farmer organisations and building research-advisory service-farmer linkages)

Theme 4
Education, training and learning systems

Sub theme	Activity area
Scaling out good practices in education and training	○Understanding the dynamics and identifying demand within education and learning systems in the region ○Advocacy and sharing of successful experiences in institutional reforms in lifelong learning approaches and improved gender balance ○Identify good practice in non formal and formal education, curriculum development, and pedagogy ○Identifying and disseminating lessons learned from other sectors (e.g. science and technology councils)
Building networks and partnerships for more innovative and responsive education and training systems	○Facilitate regional networking and partnerships between educational systems and research, and advisory services systems and farmers' organisations for innovation ○Identify opportunities for using mass media and ICT for building partnerships for distance and e-learning (both traditional and non-traditional), improving curriculum, delivery and access to materials and literature
Learning for innovation	○Facilitate access to regional scholarship programmes (BASIC) ○Capacity building and training for national systems to introduce new methodologies and update education and learning systems ○Identifying opportunities for development of programmes that allow schools (secondary and below) to improve access to technology, participate in technology development and use in agriculture for income generation

Theme 5
Knowledge, information and communication

Sub theme	Activity area
Promoting knowledge sharing and networking on ICT	○Knowledge sharing on good practice and successful examples of ICT policy, strategy and use in the region and elsewhere ○Development of networks or partnerships between communication practitioners (both public and private) nationally and regionally and linking them to other stakeholders
Strengthening capacity for communication for innovation and development	○Strengthening use of ICT and other media to support smallholder innovation and improve access, participation and ownership in knowledge and information systems
Regional information management	○Facilitating the compiling and analysis of national knowledge and data for RAILS and AIMS and other regional information management initiatives ○Capacity building for creation of integrated information platform at regional level ○Development of SRO information management capacity.

Theme 6
Institutional development and capacity building

Sub theme	Activity area
Strengthening complementarity with FANR	○Support to FANR to participate in SRO related activities ○Providing knowledge resources to support FANR priorities
Developing a Sub-regional Organisation	○Core institutional support for the SRO ○Institutional development and change management assistance ○Partnership building to implement SADC MAPP activities and avoid centralising all functions within the SRO
Monitoring and evaluating theme implementation	○Monitoring and evaluation of SADC MAPP activities ○Management of grants

Funding

- Activities common across Member States to be coordinated by SADC through grants.
- Activities that will be supported at national level will be those that are of regional importance, using resources available through the SADC MAPP regional programme.
- The Programme will promote the harmonisation of external financial support and the concept of 'basket funding' in line with the Paris Declaration on Improving Aid Effectiveness (2005), and the Windhoek Declaration on a new partnership between SADC and its International Cooperating Partners (ICPs).
- National governments will be expected to provide more funds to support national activities in line with the commitment they have made to contribute 10% of their budgets towards agriculture.

Funding mechanisms currently under consideration

Mechanism	Purpose	Key criteria for use	To be used by
Competitive grants	○Support to generation of new knowledge on specific regional priorities or lines of work across SADC MAPP themes, not just the research and technology generation theme	○Should demonstrate regional priority activities ○Should be led by institutions in the national agric research, extension and education systems ○Grant award based on call for proposals ○Used for operational activities only ○Cost sharing	○Open to the full range of SADC MAPP stakeholders (farmers, private sector, public sector, international, regional and civil society institutions
Commissioned grants	○To support specific short term priorities or pieces of work across the range of SADC MAPP themes ○Used where competitive grants are not seen as the best mechanism	○SRO led activities ○Follows standard procurement procedures approved by the SRO ○Activities to be justified and implemented through appropriate grant approval process	○The SRO ○Specific partner institutions which participate in a modified competitive funding system
Institutional capacity building and partnering grants	○To strengthen capacity of regional institutions, partnerships or networks ○To enable SADC MAPP to complement other ongoing regional exercises	○Must support a regional activity (can support certain national activities with potential regional benefit) ○Should demonstrate regional partnerships and linkages ○Cost sharing ○ Renewable based on need and meeting performance criteria	○Open to the full range of SADC MAPP stakeholders (farmers, private sector, public sector, international, regional and civil society institutions
Innovation grant	○Testing new approaches and methodologies at national level so they can be eventually scaled up within a national system – and regionally	○Should demonstrate partnership internally with multiple institutions ○Should demonstrate or generate lessons for other countries in the region ○Small and short term use only, 12 – 18 ○One time grant and not renewable ○Should be results oriented and with a learning as main output	○Private sector ○Public sector ○Civil society

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SADC MAPP Preparation process

- Initial stakeholder consultations were carried out in all SADC Member States (except DRC) between mid August and early October 2006
- A zero draft document was prepared Jan – Feb 2007 on the basis of
  1. The in-country consultations
  2. The programme Concept Note
  3. Available SADC documents
  4. Working papers and reports from commissioned studies

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SADC MAPP Preparation process

Next steps

Apr – May 2007	➢In-country integrated situation analysis and workshops ➢Study to determine the process and requirements for the establishments the SRO. This report will be presented at a regional workshop prior to finalisation
May – Jul 2007	➢Further fine tuning of document themes, institutional arrangements, implementation plans and preparation of draft implementation manuals
Aug 2007	➢Regional stakeholder workshop to discuss the first draft proposal document and related implementation plans and manuals
Aug - Oct 2007	➢Preparation of revised draft proposal document
Oct – Dec 2007	➢Preparation of pre-implementation start up activities

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- THANK YOU

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Situation Analysis of Agricultural Research, Training and Development in the SADC Region

Introduction

FANR Consultation Meeting with Directors of Research and Extension
Johannesburg
29-30 March 2007

1

Background

- The FANR R&D Unit relies on information about activities in the agricultural sector & the active participation of all major stakeholders in agriculture (agricultural research, extension, agricultural education, farmer organisations, agricultural NGOs and the private sector).
- ***Problem:*** availability of information has weakened at the level of the Unit over the past few years, due to its limited human resources and its capacity to engage in a dialogue with its stakeholders in the region.

2

Background

- This lack of information is being remedied through the intervention of projects & their activities to strengthen the capacity of the SADC Secretariat and to improve information and communication management.
- The FANR has started, through the ICART project, the process of a situation analysis of Agricultural Research & Training in the region
- An initial stage in the process was undertaken in all 14 SADC MS between Jan and Feb 2007, with the assistance of consultants visiting MS to meet with stakeholders

3

Purpose of the Situation Analysis

1. To build up knowledge base at SADC Secretariat on Agricultural Research in the region
2. Establish an electronic information system on Agricultural research and training in the region for use by SADC and member states (to be continuously consolidated thereafter)
3. Start the process of analysis of RDT interventions in the region to facilitate dialogue on these issues
4. Provide background material for the development of a strategy to support networking in Agricultural research and training in the region

4

The Process

- The mission was undertaken by 4 consultants, who visited all 14 SADC member states over the period January 24 to February 13, 2007.
- The schedule of visits in each country was arranged by national scientists in each country, who had been nominated as focal points for the ICART project
- The consultants were tasked to collect information from each country in the form of:
  - lists of institutions conducting research and in-service training
  - lists of research managers and scientists, with their contact details

5

The Process

- Information collected (contd.):
  - lists of research publications and reviews of research systems
  - lists of institutions involved with alliances and the numbers of researchers concerned.
- In addition, the consultants were required to assess:
  - coordination mechanisms in place to share activities among research stakeholders
  - mechanisms for planning and managing research agendas.

6

Data Collection Methods

- The information was collected in two ways:

1. By visiting with research managers, scientists and users of research outputs to discuss research activity, modes of operation and funding sources.
2. By distributing a formal questionnaire to as many research scientists as possible.
   - This questionnaire asked for information on each researcher about:
     - their qualification and status
     - their current research projects
     - any alliances/networks they were involved with
     - recent publications.

7

Preliminary Findings of the Situation Analysis

8

Proposed Networking Areas

- From a networking perspective, the following issues were considered amenable to being addressed through improved networking:

1. Coordination of activity planning & management of research agendas
   - to optimise the benefits of externally funded networks that currently drive national research agendas where national operating budgets are limited.;
2. Networks for identified priority research topics
   - Involvement of small scale farmers and multidisciplinary teams in planning research with a livelihoods perspective;

9

Proposed Networking Areas (cont.)

3. Knowledge links
   - Improved knowledge by scientists within countries and across countries of work being done elsewhere;
4. Output generation and dissemination mechanisms
   - Relations between research and the wider farmer extension systems being developed in many countries;
5. Human resource strength and experience
   - Exchange visits of young scientists to make maximum use of the few remaining experienced national researchers;

10

Proposed Networking Areas (cont.)

6. Sourcing alternative funding for research
   - Develop capacity for sourcing alternative funding for research.

11

Proposed Way Forward

- Although the limited time in each MS only provided an opportunity for a rapid overview, it also allowed the gathering of basic information that will be fed into a regional information system on agricultural research & training.
- The data collected will be entered and analysed until the 3rd quarter of 2007.
- Consultants will return towards the end of 2007 to further analyse the information and hold a workshop with regional stakeholders

12

Proposed Way Forward

- Workshop outcomes will assist the ICART project devise a strategy for support to regional research networks.
- Proposals on the development of the country reports through a consultative process will be presented, for discussion
- ∴ **collaboration of the MS** is being requested to obtain as comprehensive a dataset about the functioning of National Agricultural Research Systems (NARS) in the region as possible by the 3rd quarter of 2007.

13

Thank You

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SADC MAPP Situation analysis

Objective is to obtain information on:

- promising technologies that can be promoted and scaled out
- indigenous knowledge that can be promoted and scaled out
- Key agric stakeholder institutions (smallholder farmer organisations, educational institutions, NGOs, private sector and agribusiness, research, extension)
- Current communications methods and linkages

15

Proposed Methodology

- National consultants will be recruited in each Member State
- Individual consultations
- A national workshop
- National Situational analysis report
- Regional situation analysis report

16

Expected Outputs from the work

- Inventory of technologies
- Inventory most promising technologies and 'best practice' for their out-scaling
- Inventory of key stakeholders
- Stakeholder views on the most appropriate SRO option

17

Expected Outputs from the work contd

- National Consultant will produce a report for each of the Member States
- Regional consultants will be recruited to synthesize the reports produced by each national consultant into one regional report

18

Situation Analysis

The situation analysis will be a continuous process during the implementation of SADC MAPP and other projects within FANR

19

Expected output from this workshop

Views and comments about the situation analyses

20

SADC MAPP Situation analysis

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Expected output from this workshop

Views and comments about the situation analyses

6

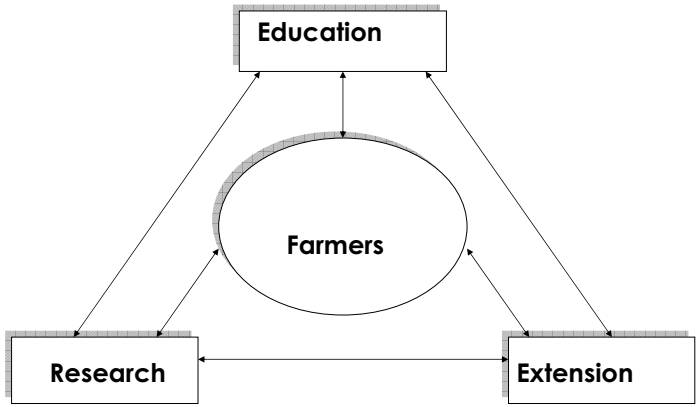
Linkages: Research and Advisory Services (Extension)

FANR Consultation Meeting with Directors of Research and Extension

Paul THANGATA, PhD

Johannesburg, South Africa
29-30 March 2007

…..A problem exists when there is a need felt by a client….



….. The successful implementation of the reform agenda of research and extension agencies is integral to the new vision of agriculture as the 'motor of sustainable economic growth' as perceived in NEPAD's 'Comprehensive Africa Agriculture Development Programme' (CAADP)(NEPAD 2002). ….

The past……a review…….

Technology generation and transfer to smallholder farmers

Technology generation and transfer to smallholder farmers

1. seen as a one-way process where researchers generated technologies, passed them to extension staff who in turn extended them to farmers.

2. the model was based on a "top-down" approach of information flow from researchers to extension and then to the target client.

Methods used in the technology generation and transfer model included:

The training of farmers through:

- organized courses, mass media,
- meetings,
- individual farm visits,
- group extension methods (e.g., training and visits),
- demonstrations, and
- exhibits and contacts at agricultural shows.

…….. but the technology generation and transfer model ……..

..has some success stories too…. And still being used in some countries……

The present…….a review…….

The new paradigm in the agric. advisory services (agricultural extension)

The new paradigm is a two way approach……

……it is a two-way flow of information between each of the major subsystems: research, extension, educators, private sector, and farmers……

…….pluralistic approach……

The new paradigm in the advisory services…….1/3

1. significant changes including, but not limited to, institutional, organizational, managerial and methodological dimensions of extension programs.
2. farmers are encouraged to participate directly and positively to their own learning opportunities both to develop and then to spread knowledge and technology.

The new paradigm in the advisory services……..2/3

3. access to markets as well as technology is central to the new advisory service paradigm.
4. farmer-led and demand-driven research and advisory services
5. the need to move beyond subsistence agriculture,

The new paradigm in the advisory services…….3/3

6. Market oriented agricultural advisory services (MOAAS).
7. The concept moves beyond services targeted directly *to farmers to generally targeting all actors in the value chain* of a given commodity

Some of the new methods in the new paradigm in the advisory services

1. farmer field schools (FFS) and local agricultural research committees (CIALs) – in particular promote participatory learning and action research.
2. Farmers become engaged directly in activities such as experimentation, observation, and measurement and then learn to adapt technologies and innovate for themselves.

Science based Development

…Supporting Evidence-Based Policy Dialogue…

Science based Development

What we know

1. We know researchers' job is to do research informed by farmers' needs.
2. Researchers contribute to science based development
3. There are very good development projects and networks through which science can be fed

Scientists are relatively strong in …

- ☑ Characterizing situations and constraints
- ☑ Exploring for new options under controlled conditions
- ☑ Constructing and conducting evaluations
- ☑ And many other skills……

Science based Development

What we know

1. Farmers are 'crying' for good science
2. Development has stagnated
3. Policy is inadequately informed by science
4. Many partnerships are marriages of convenience rather than adding value

Reminder……..

…..A problem exists when there is a need felt by a client….

..but problems are non-hypothetical….

*…….**We have a problem in the SADC sub-region……***

….to answer the farmers' cry for good science…..

…..Both research and Extension have the same client.

Therefore, the need for close linkages

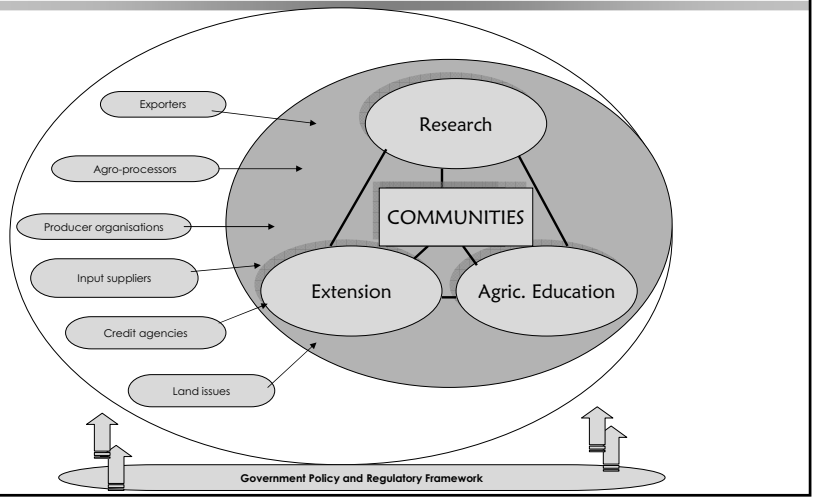
why the linkage problem is so persistent

…in part the problem is due to the fact that both researchers and advisory services tend to forget the client…

….and the solution..

…could be to empower farmers so that they can "pull down" researchers, extensionists and educators into their fields to address 'their' priority problems.

…..but both research and extension are affected by issues beyond their control



Coffee Filter Reality in R&D Process

fresh grounds $ *used grounds*

new ideas

fundamental research

R&D grants

old new ideas

applied research

adaptive research

Assumptions

New knowledge is better than old

Prescriptive recommendations more effective than participatory approaches

Impacts

Scientists are best rewarded for fundamental research

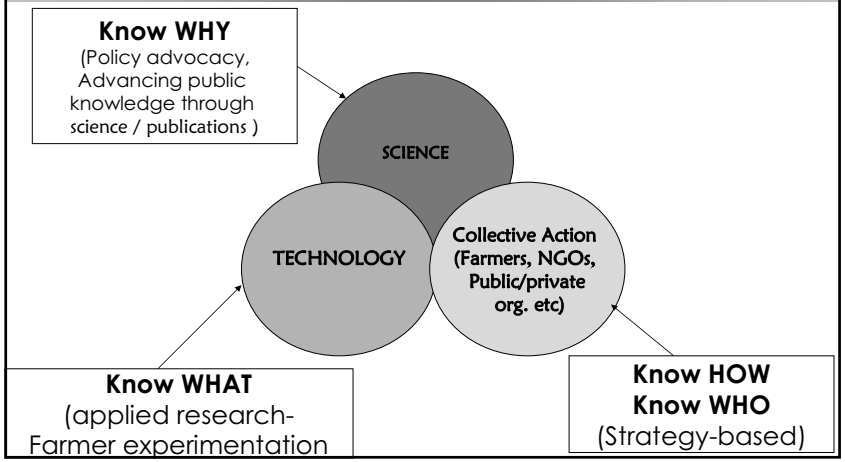
Empowerment of the poor and excluded remains arrested

benefits to the poor and excluded

After Jo Anderson

……*Knowledge is power*……

Research, extension and farmer linkages..



……Knowledge is power……..1/2

… two central pillars for science based participatory development:

- Knowledge: is a major driver of innovation and growth
- Empowerment: through sharing knowledge in the innovation system and institutions are key to the innovative process.

……Knowledge is power……2/2

…. two tools in this approach……

- Partnerships: to create access to knowledge flows that contribute to the development, dissemination and uptake of a technology
- Networks: to facilitate the flow of technology and information among people, enterprises and institutions are key to the innovative process.

Science based participatory development..1/2

- Builds on an evolving partnership of scientists, farming communities, development agencies (both private and public), and commercial enterprises
- Efficient, fast, and objective in selecting the best options

Science based participatory development..2/2

- Uses multiple channels and players, and allows choices to emerge and be tested - and the best options to be adopted, and through feedback, they are further developed (*with farmer*)
- Foundation of good science, directed by farmers' needs and informed by the commercial, social, and ecological environments of the continent, can provide gains, not only for the better off producers, but also for poor and excluded.

Can we do things 'business unusual'

…..Examples……..

Farmer experimentation: Example 1/3

…..the case of the FIPS ……..

……not demonstration……

Experimentation……..1/2

1. Farmers investigate a set of technologies and are helped to select the best technology combinations for their conditions.
2. Allows farmers to *experiment with various technologies from different providers*, and
3. Helps farmers share the consequent knowledge with their fellow farmers through FFS, field tours, and field days.

Experimentation……..2/2

- Focuses on the *developmental problem* rather than the research discipline
- Chooses the best and improve the 'less best'
- Involvement of ALL in innovation development
- Active encouragement of weaker farmers

Lessons from experience……1/2

1. Science-led development: more than participation, it is changing perceptions /actions in private sector

2. Communicating the message: Spillovers to:

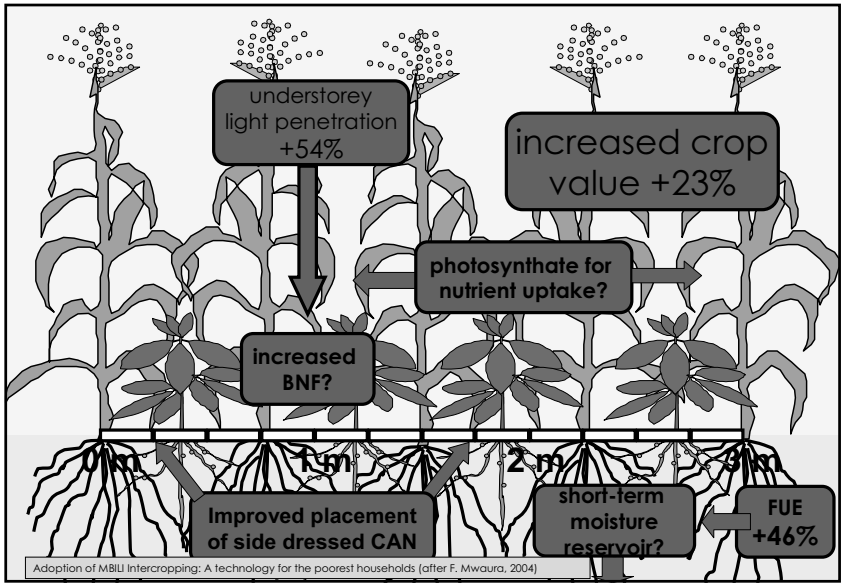
- Farmers –farmer to farmer knowledge transfer
- Agribusiness-develops new products for growth in smallholder sector e.g. ARM-Mavuno, Minjingu phosphate-Mkombozi, Monsanto-seed and herbicides; Dow chemicals- crop storage.

Lessons from experience……..2/2

- Previous experience has shown that this *experimentation is quickly followed by diversification* as farmers expand their capacity to diversify into other production activities.
- Such farmer-led, demand-driven advisory services and agricultural innovation systems *create social spaces for learning, spaces in which farmers can be listened to and influence solutions to their problems*.

Farmer participation in research: Example 2/3

…..the case of MBILI Intercropping-East Africa……..



Farmer empowerment: Example 3/3

…..the case of PADEP……..

PADEP

Farmers:

- Form groups/ associations
- Contribute funds as a group
- Group funds are topped-up by govt/projects
- They are able to hire advisory services/ research services etc from both government and the private sector

Generic points from all examples

Participatory Research and extension requires

- Intensive interaction with farmers;
- Strong national level technology development and dissemination capacity;
- Strong and effective links to science; and
- Adequate funding

Way forward for SADC

Way forward for SADC

Can the SADC sub-region CREATE;

- A research agenda which moves beyond technology;
- A policy agenda which is informed by science
- Farmer-led and demand-driven research and advisory services

What does all this mean?

……..Perhaps our success as researchers and extensionists is the proper identification of our client's problem……

obrigado, merci, thank you,

Discussion

1. What forms of R&D examples are there from the region that can be highlighted
1. What are the main problems/issues in linkages
2. Experimentation is not demonstration, farmer empowerment is not farmer participation, and participation is *Science-led development*. What is the way forward?
3. How can we influence policy at the national level?
4. Any other issues?

SADC MAPP
Presentation on Institutional Arrangements

Note

1. The need for an SRO for the SADC region has been an issue since the demise of SACCAR.

2. Over the last 3-4 years, workshops and discussions have been held on the issue of the SRO. A SADC MAPP meeting of 17 October 2006 resolved that a consultant be hired to review and analyse the available literature and come up with options and recommendations of an SRO for the SADC region

3. A consultant was hired through FAO in January 2007.

4. Four options were identified. All the options include strengthening of the SADC FANR Directorate to better fulfil its mandate, focusing on:

    a. Formulation of agricultural research and development policy and strategy, and
    b. monitoring and evaluation..

Three cross-cutting principles were identified by the consultant as important for all options to be effective:

- The need for effective leadership (and hence the incentives to attract and retain quality staff);

- The need for decision making at the appropriate level, while promoting collective sub-regional R&D efforts driven by farmers, and

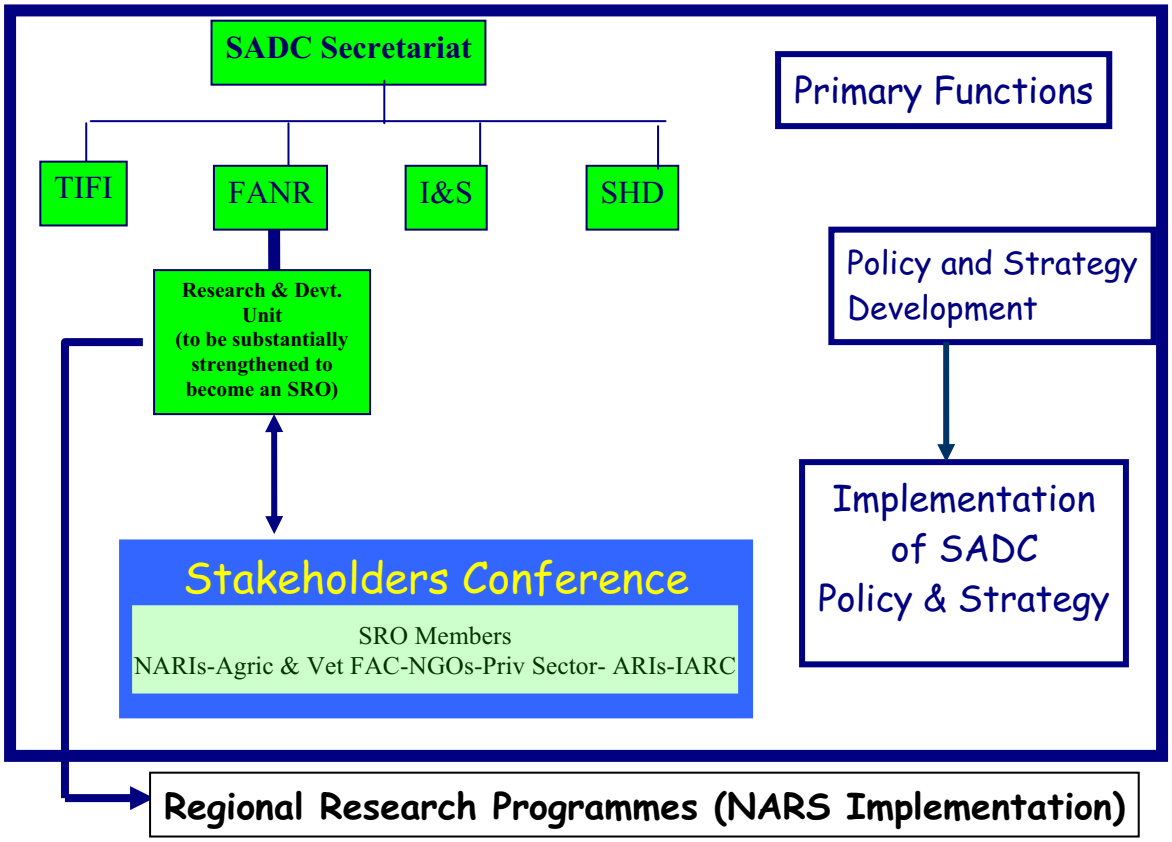
- The importance of collective "appropriation", such that the SRO entity is a federating institution of stakeholders for a shared agenda, and sharing in its responsibilities and costs.

Option 1: Strengthened SADC FANR Directorate as the SRO

Strengthened through:

- A substantial increase in FANR core staff (at least an additional 4 professional staff, 3 technical assistants),
- A 4 to 6-fold increase from current funding level to support its main mandate of a policy/strategy and monitoring agenda, and
- An increase in overall funding

This option was considered not viable but was included in the assessment mainly for comparison purposes because it is the option that the ICM opted for in 2004 (apparently without analysis). It has not been implemented due mainly to financial constraints and frozen posts in FANR.


SADC Secretariat
Primary Functions
TIFI
FANR
I&S
SHD
Research & Devt. Unit (to be substantially strengthened to become an SRO)
Policy and Strategy Development
Implementation of SADC Policy & Strategy
Stakeholders Conference
SRO Members
NARIs-Agric & Vet FAC-NGOs-Priv Sector- ARIs-IARC
Regional Research Programmes (NARS Implementation)

Advantages of Option 1

No clear advantages

Disadvantages

- FANR will be responsible for both policy and strategy formulation and implementation, giving limited accountability
- Limited capacity within FANR to increase staff for the SRO. This is the main reason for lack of progress since the demise of SACCAR
- An SRO entirely within the SADC admin structure can be expected to continue to experience operational constraints hindering timely response to the needs of national and regional R&D institutions because of:
    - Inadequate staffing
    - Limited funding
    - Rather lengthy approval system causing implementation delays due to lack of flexibility in the management of finances, operating procedures and staff recruitment/dismissal
    - Recruitment of the best qualified staff will be compromised by the current quarter system within the Secretariat

Option 2: Establishing a Semi-Autonomous SRO

This option would involve:

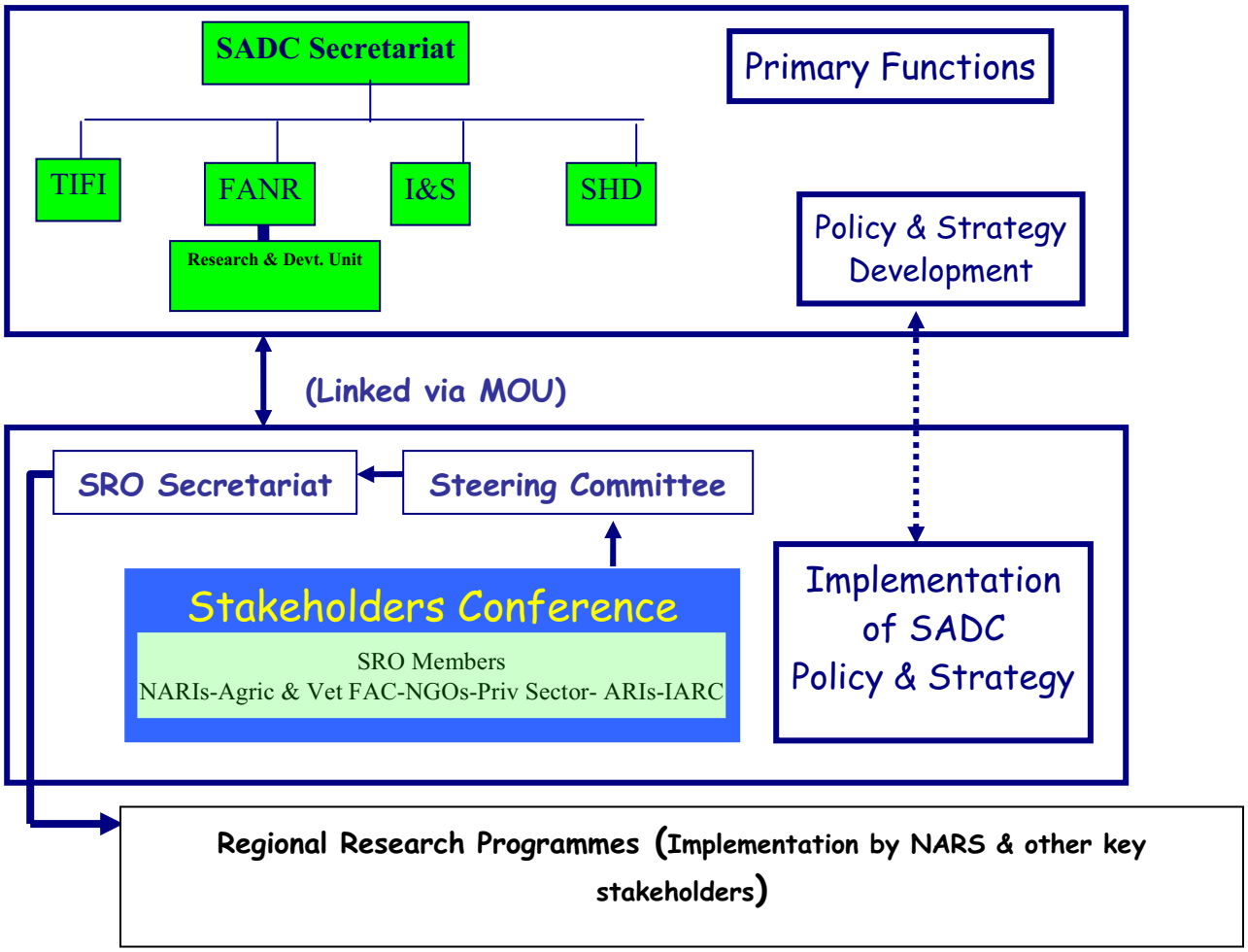
- Establishing a new organizational body, with additional professional staff to assume the day-to-day implementation of key R&D strategies

- The SRO would be placed outside the organizational structure of the SADC Secretariat, but closely "linked" to the SADC Secretariat through an MOU establishing the nature and scope of its autonomy and complementary role with the FANR Directorate

- SADC FANR Directorate providing the policy and strategic directions

- Establish a Steering Committee as a key governance mechanism, focusing on providing technical guidance to the SRO on setting its research and development priorities and annual work plans

- Providing the SRO with adequate level of flexibility in the management of finances and operating procedures, in the recruitment of required quality staff, and in determining their conditions of service.


SADC Secretariat
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Policy & Strategy Development
(Linked via MOU)
SRO Secretariat
Steering Committee
Stakeholders Conference
SRO Members
NARIs-Agric & Vet FAC-NGOs-Priv Sector- ARIs-IARC
Implementation of SADC Policy & Strategy
Regional Research Programmes (Implementation by NARS & other key stakeholders)

Advantages of Option 2

- Policy and strategy formulation and implementation separate, giving greater accountability of the SRO
- Greater flexibility in the management of finances operating procedures
- Greater flexibility in hiring of best qualified staff
- This option could be an entry point for a phased process to achieving full autonomy in future years

Disadvantages

Will depend on the level of autonomy in comparison with Option 1 in terms of level of flexibility in the management of finances and operating procedures, in the recruitment of required quality staff, and in determining their conditions of service

Option 3: Establishing an Autonomous SRO

(with active "nurturing" by a suitable regional entity, e.g. FARA)

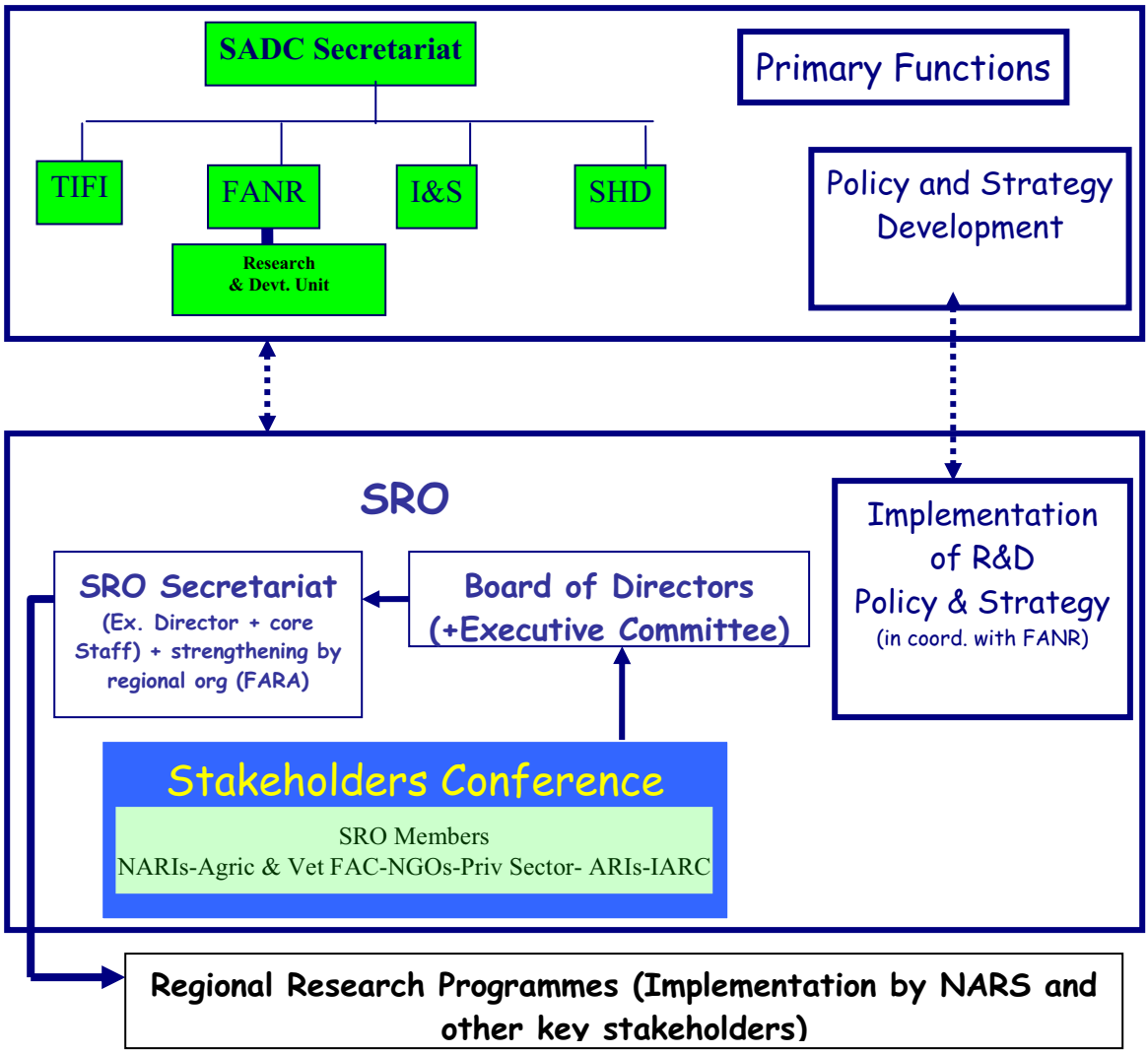
The SRO would have:

- Own legal identity, governance structure (a Board of Directors, elected by a multi stakeholder general assembly. SADC FANR would be represented in the Board by the Director),
- Operating procedures (work plan/budget, human resources, procurement, and financial procedures, which would have the capability of and donor confidence in a "basket fund" approach to funding strategic programmes)

- The day-to-day activities would be carried out by a lean and effective Technical Secretariat, headed by an Executive Secretary, and supported by a small technical staff (perhaps about 5 "core" staff, supplemented by consultants, as needed).

- Have a mentoring organization to nurture the SRO through its formative stages. This mentoring would need support from a credible regional organization or similar one with a strong track record of achievement and would probably require the initial 2-3 years.

- Have the flexibility to devise its operational procedures supported by sound transparency and accountability mechanisms (clear procedures and independent operational and financial audits to ensure effective compliance and improvements responsive to its stakeholders).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Primary Functions
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FANR
I&S
SHD
Research & Devt. Unit
Policy and Strategy Development
SRO
Implementation of R&D Policy & Strategy
(in coord. with FANR)
SRO Secretariat
(Ex. Director + core Staff) + strengthening by regional org (FARA)
Board of Directors (+Executive Committee)
Stakeholders Conference
SRO Members
NARIs-Agric & Vet FAC-NGOs-Priv Sector- ARIs-IARC
Regional Research Programmes (Implementation by NARS and other key stakeholders)

Advantages of Option 3

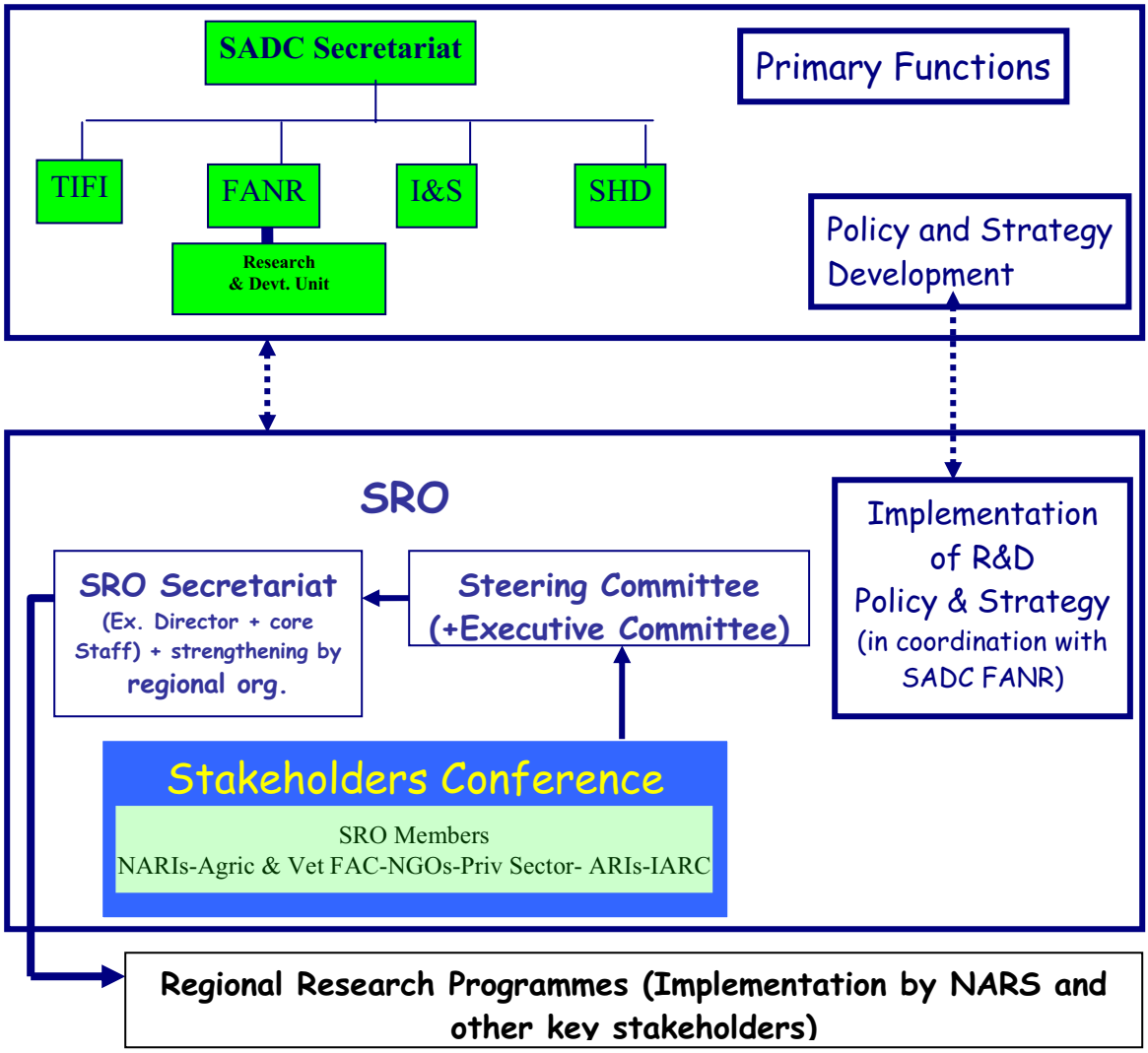
- Policy formulation and implementation separate
- Complete flexibility in the management of finances operating procedures
- Complete flexibility in hiring of best qualified staff

Disadvantages

A completely autonomous SRO with little or no formal link with the SADC Secretariat may lose the good will from SADC Member States, which raises the question of sustainability

Option 4: Establishing and Strengthening an Autonomous SRO
(complemented by a strengthened FANR Directorate)

Similar to Option 3 but would have the explicit mentoring/nurturing support of a suitable regional entity.



COMPARATIVE ASSESSMENT OF THE OPTIONS

Criteria		SRO Options							
		1 SADC FANR		2 Semi-Autonomous		3 Autonomous/ FARA		4 Autonomous	
		S/O	**W/T**	**S/O**	**W/T**	**S/O**	**W/T**	**S/O**	**W/T**
1	Incentives to be Responsive, visible to multiple stakeholders, especially "clients"	L	M	M	M	H	L/M	H	L/M
2	Governance to Achieve Transparency & Accountability	L	H	L/M	M	H	L/M	M/H	L/M
3	Leadership Effectiveness to Facilitate Participatory Partnerships and Alliances	L	M	M	L/M	H	L/M	M/H	L/M
4	Sufficient Autonomy and Flexibility to Achieve Strategic Results & Outcomes (with appropriate "links" and complementarity to SADC FANR Directorate)	L	H	M	M	H	M	M/H	M
5	Prospects to become viable and Sustainable (operational/financial)	L	H	M	M	H	M	M/H	LM
Overall Relative Rank		**4**		**3**		**1**		**2**	

* Assessment Ratings: L: refers to low; M: refers to Medium; M/H: refers to borderline Low and Medium
H: refers to High
Notes: S/O= Strengths/ Opportunities; W/T= Weaknesses/ Threats would achieve "High" under the strengths/opportunities, and "Low" under the weaknesses/threats.

CONCLUSION

- As indicated in an earlier session of this workshop, the establishment of an SRO is an important capacity building component of SAC MAPP, and other projects in FANR (like ICART) also have funds set aside to support the SRO once it is in place.

- A consultative meeting with FANR Directorate, FARA, FAO and donors held on 21 February 2007 discussed these options and reached a consensus as to the appropriate SRO option.

- This workshop should therefore also discuss the SRO options and provide its views and/or consensus on what it sees as the appropriate option, and how the preferred option compares with that identified at the 21 February meeting.

Technical Issues for Research & Development

Priorities and potentials for cooperation in the region and with other partners

Implementing objectives of the Dar Es Salaam Declaration through sub- objectives

- Develop policies, regulations and a conducive environment
- Develop infrastructures and facilities
- Develop services and partnership
- Promote innovative technologies and decision making processes
- Empower people through information and education and the mitigation of risks

WAY FORWARD

For the Integration of R&D
in SADC

Proposed components for joint action Secretariat - Directors

- The TCART identifies what should be done at regional level for supporting national efforts.
- Funding for coordination is identified.
- Shared activities with national institutions are planned and budgeted.
- Relationships with external partners are promoted.
- Evaluation mechanisms are in force.

Decisions Taken

- Composition and TORs of TCART
- Ad-hoc Management Committee for implementation DES Declaration
- Organization of meetings
- Mechanisms for sharing programs and activities
- Reporting methods

- kmolapong@sadc.int

4th FARA GENERAL ASSEMBLY

Progress Report of the LOC

RJ Sebola
March 2007

agriculture
Department:
Agriculture
REPUBLIC OF SOUTH AFRICA

INTRODUCTION

- Theme - : Promoting the Productivity and Competitiveness of Africa's Agriculture in a global economy
- 10 Sub-themes:
  - ✓ How can Africa identify and exploit its competitive advantages in agri-business and related industries; nationally, regionally and globally?
  - ✓ What is needed to enable African producers to be better innovators and entrepreneurs?
  - ✓ How can researchers best influence and support agricultural policy development?
  - ✓ What lessons have been learnt in developing and implementing the FARA Programs (FAAP/MAPP, SSA-CP, DONATA, RAILS)
  - ✓ What are the optimal roles and positioning of agricultural research institutions?

2

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INTRODUCTION

- 10 Sub-themes:
  - ✓ Are we capturing the lessons from experiences and responses to risks and disasters?
  - ✓ What are the requirements and opportunities for building adequate human and institutional capacity
  - ✓ How can civil society be bettered mobilized for agricultural development?
  - ✓ How can agricultural research contribute to pro-poor enabling land policies?
  - ✓ How can indigenous knowledge systems, intellectual property rights, ethical, morality standards, biosafety and environmental issues be accommodated to maximize sustainable social and economic development?

3

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Local Organizing Committee

- Agreements signed:
  - DoA and FARA – Hosting
  - DoA and ARC – Implementing agency;
  - FARA and Indaba - Hotel Accommodation & Venue
- The LOC is Co-chaired by the ARC and DoA;
- Comprises major stakeholders in the South African NARS, relevant government departments/ministries, research institutions and organizations with regional mandate;
- Monthly Formal meetings;
- Works through Sub-committees:
  - ✓ Logistics Sub-Committee
  - ✓ Technical Sub-Committee
  - ✓ RSA Day & Entertainment Sub-Committee
  - ✓ Communication & Exhibition Sub-Committee
  - ✓ Fund Raising Sub-Committee

4

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ORGANISATIONAL ARRANGEMENTS FOR THE LOC

agriculture
Department:
Agriculture
REPUBLIC OF SOUTH AFRICA

5

agriculture

LOC MEMBERS WITH CHAIPERSON & EXECUTIVE SECRETARY OF FARA

Logistics Sub-Committee

- Foresee general arrangements for the GA such as transport, accommodation, preparation of invitations and visas for delegations.
- Arrangement for provision of protocol services.
- Accreditation and security services.
- Provide venues and sites for information technology support personnel for smooth running of presentations during t he event.
- Arrange for health services for the General Assembly delegation.

8

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Technical Sub-Committee

- Responsible for inputs to contents and programme finalization;
- Take a leading role in programming for GA in the form of call for papers
- Ensure production of correct content of work before, during and after the GA in terms of standards and quality;
- Identify keynote speakers and rappourteurs for a SADC Dialogue on theme and sub-themes;
- Advice the Publicity and Communication Subcommittee regarding the content to be communicated and published for GA arrangements

9

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RSA Day and Entertainment Sub-Committee

- Establish a program and work plan for the RSA Day.
- Make arrangements for Gala dinner.
- Organize visits to various agricultural sites in South Africa.
- Arrange for youth involvement for June 16 program.

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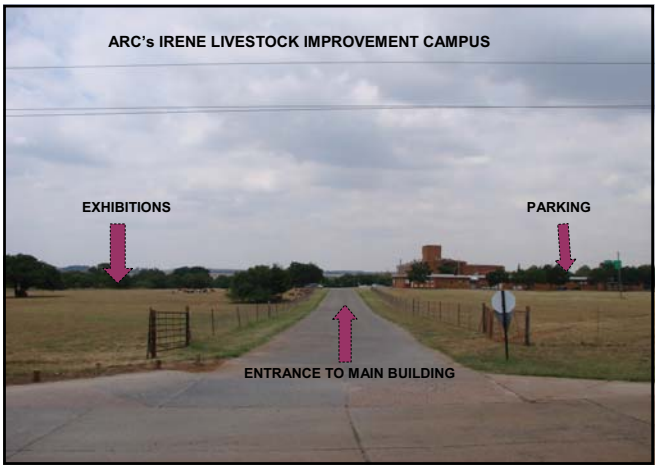
ADMINISTRATIVE BUILDING AND LABORATORIES

ARC's IRENE LIVESTOCK IMPROVEMENT CAMPUS



Communication & Exhibition Sub-Committee

- Arrangement for media briefing/liaison and producing key (pre, during and post) messages;
- Arrangement and establishment Press releases,
- Linking websites and internet bulletins for the GA;
- Writing speeches for Minister and other dignitaries (RSA);
- Provision of interpretation facilities and personnel;
- Coordinating exhibitions including the RSA Day.

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Finance and Fund Raising Sub-Committee

- Fund raising (approach industry and private agencies for financial assistance);
- Manage finances for GA preparations;
- Coordinate submission of cost drivers by other Subcommittees.

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Progress to date…

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Venue and Hotel Accommodation

- Sandton Convention Centre, Johannesburg secured:
  - 1st payment: 10% of the total cost paid to SCC in 2006 to secure venue (23 May 2006)
  - 2nd Payment: 40% of the total cost paid on 12 February 2007
- Up to a 1000 Hotel rooms have been booked in and around the SCC
- Delegates can book directly with hotels of their preference
- Up to 350 hotel rooms allocated to FARA and for VIPs.

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Venue and Hotel Accommodation …

The floor space have been allocated to cater for:

- Plenary session
- Breakaway rooms
- Gala Dinner
- Exhibitions
- VIP Holding rooms
- Operations room for security
- Registration
- Organisers office

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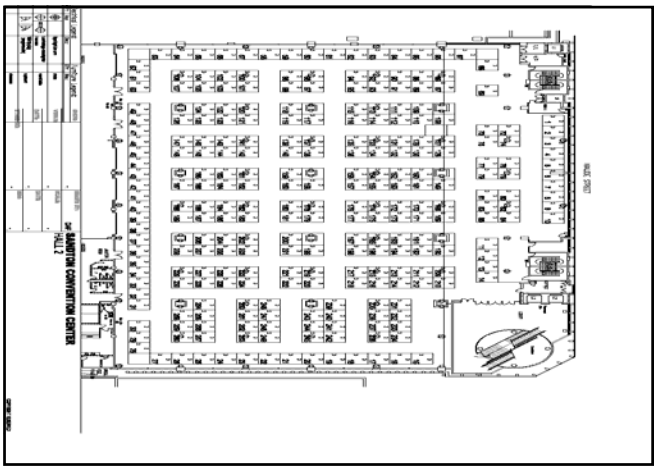

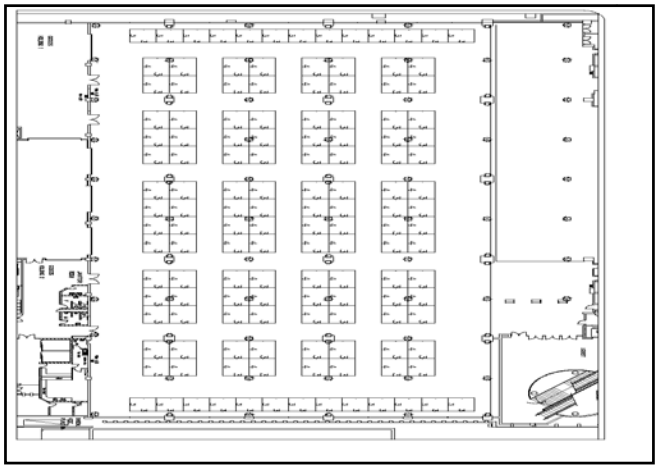

Transport

1. Transport will be required for:
   - Airport to hotels and back
   - Hotels to SCC
   - Site/field visits to research institutes/farms, etc
2. Shuttle services secured through the hotels to collect delegates arriving at the OR Tambo International Airport.
3. The Government standing contract with car manufacturers will be used to secure vehicles for VIPs and other transportation needs for the GA.

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Transport …

5. The Police providing dedicated security for FARA GA would need at least three vehicles.
6. The RSA Day subcommittee to submit a list of venues to be visited to enable the Logistics subcommittee to arrange transport.

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Security, Accreditation & VIP Protection

- General Security will be provided by the South African Police Services, and this will include policing at the perimeter, outside entrances and within the SCC.
- The VIP Protection Unit of SAPS to provide total security to VIPs only for the duration of FARA GA.
- For the pre- and post-GA, the VIPs must make own arrangements, possibly with their embassies/consulates.

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Security, Accreditation & VIP Protection

National Intelligence Agency (NIA) would implement the following measures with regards to clearance and vetting:

- Security screening of all service providers (Full names and ID), including Indaba
- Threat assessment of the venue
- Accreditation
- List of guests (categories – Heads of states, Ministers and other VIPs)
- List of all delegates.
- Security of documents

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Security, Accreditation & VIP Protection

- The Department of Home Affairs (Immigration) ready to facilitate the issuing of VISAs
- A special counter at the Airport secured with ACSA to guide delegates as they arrive:
- All shuttle pick ups to various hotels will meet the delegates at this counter.

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BUDGET AND FUND RAISING

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Budget

Item	Cost (ZAR)
General Assembly venue hire	R 2,500,000.00
Exhibition	R 319,251.00
Accommodation	R 3,675,000.00
Publicity and Communication	R 1,100,180.00
Invitations	R 351,048.00
Secretariat	R 366,550.00
Transport	R 2,187,772.00
Security and Protocol	R435,214
Entertainment	R 569,700.00
Health services	R 77,520.00
Miscellaneous/Contingency	R 500,000.00
Total	R 12,082,235.00

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Action Items

Item	Action
Venue and Hotel Accommodation	Demarcation of exhibition spaces and call for exhibitors
Transportation	Detailed budget from Police VIP Protection Services by end of March 2007
Security, Accreditation and VIP Protection	Facilitation of issuing of VISAs to delegates.

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Action Items

Item	Action
Technical Content, theme and sub-themes	Consultations with FARA Exc. Secretary on the tentative program to allow for presentations on the 'issue papers' from SADC and possibly from other sub-regions.
Communication & Exhibitions	Endorsement from FARA Executive Secretary for the proposed communication and media plan.
General	Linking the ARC and DoA Websites directly to FARA

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Conclusion

- Regular meetings and closer cooperation between IOC and LOC needed (at least once month) as the LOC has revised its meeting schedules to twice monthly.
- LOC has beefed up is Sub-committee membership to ensure effectiveness – Responses from other government ministries is overwhelming.
- Follow-ups needed to ensure participation of African Ministers of Agriculture at the Ministerial Round Table Discussion
- Security is a high a priority, and all delegates are expected to comply with information requirements from RSA authorities

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Conclusion

- Budget has been revised based on current concerns relating to security, accreditation and interpretations (~ R4 mill, additional)
- Registration open until 25 May 2007
- www.faraweek.org

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