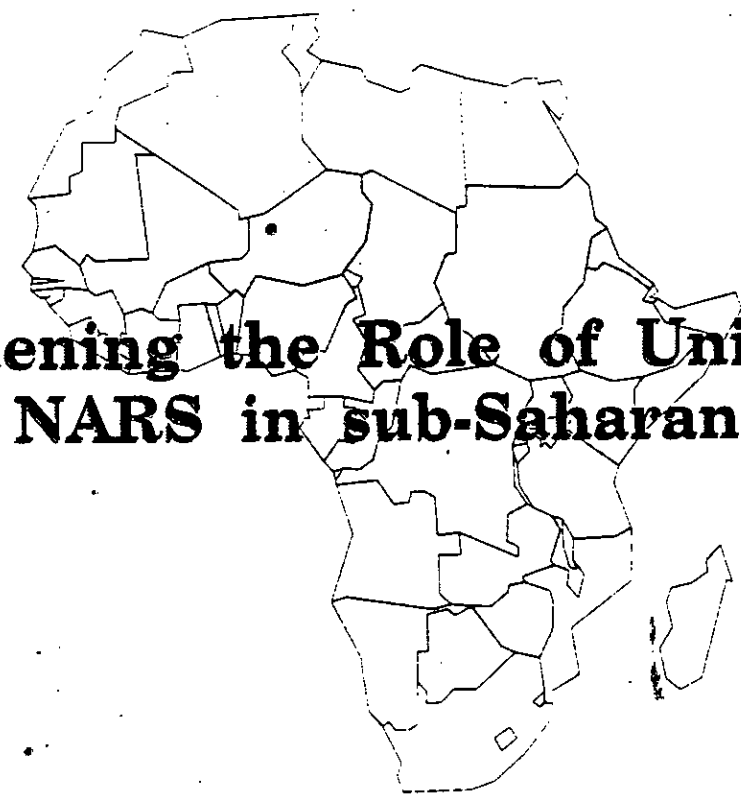
Proceedings

First Workshop, April 12-15, 1994, Cotonou, République du Bénin



Strengthening the Role of Universities in the NARS in sub-Saharan Africa

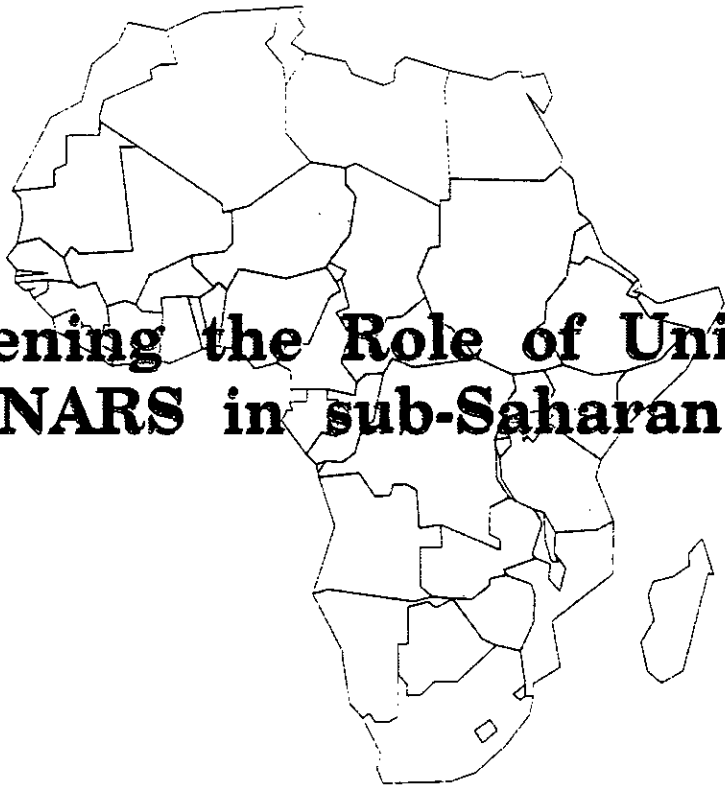
ISNAR

International Service for National Agricultural Research

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June 1994

ISNAR

International Service for National Agricultural Research

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ACRONYMS

ABU	Ahmadu Bello University
AFRC	Agricultural and Food Research Council
ARCN	Agricultural Research Council of Nigeria
C.P.U.	Collège Polytechnique Universitaire
CARDER	Centre d'Action Régionale pour le Développement Rural
CBRST	Centre Béninois de la Recherche Scientifique et Technique
CNRA	Comité National de la Recherche Agronomique
DRA	Département de la Recherche Agronomique
FASJEP	Faculté des Sciences Juridiques Economiques et Politiques
FAST	Faculté des Sciences et Techniques
FIDESPRA	Cours International de Formation pour l'Appui à l'Auto-promotion rurale
FINSA	Cours International de Formation sur la Nutrition et les Sciences Agroalimentaires
FLASH	Faculté des Lettres, Arts et Sciences Humaines
FSA	Faculté des Sciences Agronomiques
IAR	Institute of Agricultural Research
IITA	International Institute of Tropical Agriculture
INE	Institut National d'Economie
INRAB	Institut National des Recherches Agricoles du Benin
ISNAR	International Service for National Agricultural Research
MTRM	Monthly Technology Review Meetings
NACAR	National Advisory Council on Agricultural Research
NAERLS	National Agricultural Extension and Research Liaison Services
NAPRI	National Animal Production Research Institute
NARO	National Agricultural Research Organization
NARS	National Agricultural Research Systems
TETRAD	Tertiary Education, Training Research and Development
WARDA	West Africa Rice Development Association

1. Introduction

The project on "Strengthening the role of universities in National Agricultural Research Systems (NARS) in sub-Saharan Africa" officially began on November 1, 1993 with the financial support of the German Government and the technical and scientific support of the University of Hohenheim (Germany) and two international consultants. Part 1 of the overall project is aimed to develop and evaluate a methodological framework in partnership with Benin and Nigeria. During a first mission of the ISNAR project team in November / December 1993 to Benin and Nigeria, the members of the national Steering Committee and two national consultants from each country were identified.

The present first project workshop was held at the International Institute of Tropical Agriculture (IITA) in Cotonou. All members of the Nigerian (5) and Benin (6) steering committees as well as the Nigerian (2) and Benin (2) consultants were present. The only exception was the Dean of the Faculty of Agriculture of Benin. In addition, 8 representatives of other Benin organizations (2 other deans, the Director of the Centre Béninois de la Recherche Scientifique et Technique - CBRST -, 2 directors of the Centre d'Action Régionale pour le Développement Rural - CARDER- , etc.) participated in the workshop. Dr. H. Carsalade and Prof. L. Wilson, the international consultants to the project and Prof. F. Heidhues the project supervisor from the University of Hohenheim were also present. A list of all participants of the workshop is presented in the Annex 1. The project team of the International Service for National Agricultural Research (ISNAR), Dr. C. Hoste and Mrs. H. Michelsen, received support from Dr. P. Perrault and Mrs. D. Byrne from ISNAR who were at the same time in Cotonou to launch the "Strategic Plan of the Institut National des Recherches Agricoles du Benin (INRAB)" project, as well as from professional and support staff members of IITA and INRAB involved in the organization and realization of the workshop.

The workshop has been designed to achieve the following objectives :

- to build a consensus on the objectives and expected results of the project;
- to agree on the methodology and tasks of the different parties involved in the project (national steering committees, national consultants, international consultants, University of Hohenheim, ISNAR team);
- to prepare the field work to be undertaken by the national consultants with the assistance of the ISNAR research associate; and
- to agree on a work schedule and on the deadlines.

In order to achieve these objectives the workshop was structured into a number of half-day sessions (see Annex 2 : Agenda of the workshop). The first Session was introductory. After the welcome addresses and the official opening by the Minister of Rural Development of Benin, a brief introduction by the ISNAR project leader and an introductory paper on the role of developing countries universities in NARS by an international consultant of the project was given. In Session II presentations on the methodological aspects of the project were made. This was followed by a general discussion on the conceptual framework presented.

In Session III background papers of the Higher Education System and the NARS of Benin and Nigeria were presented by the national consultants. The session continued with discussions on the issues and major considerations concerning the two country cases. Session IV focussed on the role of universities in NARS in selected developed countries. A presentation on the British, the French and the German system was made by the international advisors of the project. The following discussion focused on the relevance of developed countries experiences to the study.

In Session V and VI the current and potential role of universities in NARS in Nigeria and Benin was discussed in separate working groups for the Nigerian and Benin participants. The working groups on research at the University, and constraints to universities participation in national agricultural research and on existing and potential mechanisms for improving universities contribution to national agricultural research, were introduced by the ISNAR project team. Report and conclusion of the working groups were discussed at the end of Session VI.

In the final Session the country case study approach was presented by the ISNAR project associate with the assistance of the national consultants. In the following discussions issues concerning the information and data collection and the analysis were raised. Then, the proposed workplans, expected contributions from the different actors and participants of the workshop were presented and discussed. Before the official closing, future aspects of the overall project, especially Part II, were discussed.

A list with all papers and other documents distributed during and before the workshop is provided in Annex 3.

2. Summary of Sessions

2.1 Session I : Opening ceremony

For the opening ceremony a welcome address was given by the Director General of IITA Cotonou, Dr. H. Herren, the Chairperson of the Nigerian Steering Committee, Prof. L. B. Olugbemi, and the Chairperson of the Benin Steering Committee, Dr. H. F. Nouwakpo. In the name of the Director General of ISNAR Dr. C. Hoste, the project leader, welcomed all participants, especially the Minister of Rural Development of Benin to participate in the opening session. In his speech he pointed out the importance and need for the project which is underligned by the fact that all high level participants of the national Steering Committee of Benin and Nigeria were represented. The participants are guaranteeing at the same time the implementation of the action plans which will be developed by the national consultants. He emphasised that during these four days of the workshop, all participants have to work together to produce an excellent output in order to allow the national consultants to collect the necessary information and propose concrete action plans which can be implemented in the countries.

In his opening speech the Minister of Rural Development of Benin, Dr. M. Adamou-N'diaye, stressed the necessity of the integration of all efforts to improve the relevance and the efficiency of the scientific research in the country. "A country without research is a dead country". In his eyes the workshop could be seen as a positive reaction to the actual food and economic crises and to the pressure on the natural resource base of sub-Saharan Africa in order to serve an endogenous and sustainable development. In sub-Saharan Africa agriculture remains the dominating economic sector and agricultural technologies are determining the economic growth and development of the countries. Stronger support for agricultural research and the transfer of technologies is needed to improve agricultural productivity. The role of the universities, with their qualified specialists, to contribute to national development has been underestimated in the past. In this context the present project on strengthening the role of universities in NARS should come up with concrete and practical results.

The introductory paper on the role of developing country universities in NARS was presented by Prof. L. Wilson. In a first part the transcending role of universities in development and in the NARS was pointed out. The specific role of the University can be described by Tertiary Education, Training Research and Development (TETRAD). In his presentation, Prof. L. Wilson gave an overview of the major benefits, modalities and constraints of cooperation between universities and NARS. Although the role of the University in agricultural development cannot be clarified by defining the preconditions of this complex process, it can be said that the impact of research on development has been enhanced in countries where University contributions have been included in the NARS. The changing environment for agricultural development in developing countries (e.g. biotechnology, structural adjustment) has thereby created new challenges and opportunities for the universities. This will be particularly the case in sub-Saharan Africa where the agricultural sector is faced by severe problems.

2.2 Session II : Methodological aspects of the project

The ISNAR project leader, Dr. C. Hoste, presented the background and objectives of the project. The overall project consists of two parts. The first part of the project will develop a methodological framework which will be validated in Benin and North-Nigeria. The second part will implement the developed framework in other selected countries, and based on these results, develop guidelines and draw lessons for other countries in sub-Saharan Africa. In June 1993 the contract of the first part of the project was signed by ISNAR and the Government of Germany.

The first part of the overall project has five objectives :

- to analyze the context in which universities and National Agricultural Research Organizations (NAROs) are evolving and identify constraints limiting their synergy in addressing national agricultural development-oriented research;
- to develop a methodology to study and improve the linkages between universities and the other components of a NARS;
- to identify opportunities and imaginative mechanisms to achieve improvements in the contribution of universities to development-oriented research in agriculture;
- to initiate action plans for building a capacity for such enhanced contribution; and
- to validate the methodology.

The expected outcomes of the project are a validated framework, two country studies, country specific recommendations and action plans as well as the implementation of the action plans. To reach the objectives and to develop the expected outcomes the project is based on excellent conditions concerning the human resources : at an international level the ISNAR project team, an Advisory Committee of ISNAR, the University of Hohenheim, and two international consultants are involved in the study, and at a national level, a Steering Committee with high level staff members from the ministries, the universities and the NAROs and two consultants are involved.

The conceptual framework of the project was presented by Mrs. H. Michelsen. The framework outlines a system approach to identify ways of improving the effectiveness and efficiency of research at the University as a contribution to the national agricultural research agenda. universities and NAROs can thereby be seen as organizations belonging to two different systems : the Higher Education System and the NARS. However, it can be argued that the research component of the University is part of the NARS and thus has to be evaluated according to the objectives of the NARS.

The main assumption of the project is that universities have a potential to do research and that net benefits for the society and the involved institutions are expected by strengthening the role of the University towards a development oriented research and a closer link between the University and the NAROs. More specifically the following main research questions can be distinguished :

- What is the potential role of the universities in addressing national agricultural research and development issues ?
- What are the actual research activities of universities ?

- How effective, efficient and sustainable are research activities at universities in addressing national agricultural development-oriented research ?
- What are the main factors influencing the research agenda at universities ?
- What could be alternative mechanisms and opportunities for a better contribution of universities in NARS ?

In addressing these questions two steps of diagnosis have been proposed. In a first step the two systems in which the universities and the NAROs are evolving, the Higher Education System and the NARS, will be compared in order to highlight the factors which prevent them from interacting. Hypotheses on differences in policy formulation, objectives, structure of organization, history, management of resources, availability of resources, constituencies and linkages to other organizations of the two systems were pointed out.

The identification and analysis of existing linkages between the University and the NARO will form the second step of the diagnosis. Possible linkage mechanisms were presented according to their different functions (e.g. planning and review, collaborative professional activities, exchange of resources, dissemination of knowledge and information, training, feedback and coordination). This linkage analysis should identify more specific constraints of an improved collaboration of universities to NARS and work out the net benefits of the institutions and persons involved in the linkage.

Both diagnosis steps are aimed to identify the influencing factors limiting the contribution of universities to the NARS. These influencing factors should be ranked according to their ability to be changed. They should form the basis to develop a set of proposals seeking how research activities of the University can be made more efficient, effective, and sustainable. Each of these proposals should make clear how all people and institutions involved, will be affected by the proposed changes and how they can benefit from them.

After hearing the presentations, the participants engaged in a lively, general discussion on the roles of the state, NAROs and universities, the typology of universities and NAROs, the definition of the project, and the methodology of the project.

The role of universities was discussed in relation to those of the NAROs for development oriented research. While it was agreed that the role of universities included undergraduate education, postgraduate training, research, and development oriented service and outreach, the following issues relevant to these roles were raised and discussed :

- the need to redefine the role of universities in relation to policy research, the balance between basic and development oriented research, and the setting up of on-going educational short courses;
- the realization of the under-utilized potential for research in universities; and
- the inclusion of universities in NARS.

It was pointed out that in certain countries in Europe and North America, universities were the major institutions of agricultural research. This was also the case in the state of Zaria in Nigeria.

It was pointed out that there were many different types of universities and NAROs with respect to the sharing of responsibilities for tertiary education, training, research and development and that the definition of this institutional typology was a critical pre-requisite for improving linkages between universities and NAROs. It was also suggested that a functional grouping of institutions might be necessary. For example there were :

- universities with state responsibility for research as in Ahmadu Bello University (ABU);
- universities with no responsibility for development-oriented research;
- universities in which little research was conducted;
- NAROs which contributed to post graduate teaching; and
- universities and NAROs which were involved in technology transfer.

It was considered that these institutional types may be regarded as sub-systems in the systems approach suggested.

In view of the ISNAR mandate for strengthening NARS, it was argued by an ISNAR representative that the project should include only development-oriented research activities of universities, directed towards strengthening such University contributions to NARS. However, the inclusion of other research related activities in the study was also supported in view of the difficulty of separating these activities from research within the University context. Such activities included :

- postgraduate training;
- technology transfer through bulletins and other extension materials; and
- short course training on new technology.

It was also discussed that the critical constraint to agricultural development might be located in University functions other than research, such as:

- post graduate training for the NARO establishment; and
- undergraduate training for the extension establishment.

The question of the weight given to extension activities in the project was raised in view of the need to measure the impact of research on development as well as to identify indicators for such development. Extension is critical to both of these activities.

After the discussion, it was agreed that definition of the scope of the project with respect to the inclusion of various contributory University functions to development should be decided on after the national presentations.

It was also agreed that the contributions of developed countries to development and consideration of agro-ecological regions in the formulation of linkages would be best included as part of the environment of the project. The latter point may assume greater significance if the suggestion that linkages between NARS should also be included in the scope of the project.

Although there was general acceptability on the guidelines for the project methodology presented, questions on specific aspects of the methodology as they are related to national circumstances in sub-Sahara were raised. These included :

- Consideration of Benin and Nigeria as a sample of the countries in sub-Saharan Africa or merely as the first two experiments in a series of investigations.
- Relevance of a problem solving approach vis à vis the systems approach to certain countries, e.g. why is the contribution of universities to NARS weak in many countries ?
- Impact measurement and determination of indicators of development.
- Inclusion of other countries and universities in the study.
- Reorientation of the project including the title, depending on the outcomes of national presenters and agreed roles of universities.

2.3 Session III : Country case studies: background information

The background paper on Nigeria was prepared by Prof. A. O. Osinowo and Prof. A. M. Emechebe and presented by Prof. A. M. Emechebe. In Nigeria the NARS consists mainly of 18 different NAROs, each with a different mandate for commodities or a regional mandate. Four of these NAROs are administratively attached to universities, with Institute of Agricultural Research (IAR), National Animal Production Research Institute (NAPRI) and National Agricultural Extension and Research Liaison Services (NAERLS) under the ABU. The level of funding of the NARS has declined tremendously, especially in the 80s, with funds available to NARS in the 90s of less than 20% compared to the end of the 70s.

The Higher Education System in Nigeria consists of universities, polytechnics and tertiary colleges. Of the 37 Nigerian universities, of which 25 are federal universities, 34 universities have faculties of agriculture. The three main functions of the University (teaching, research, and community service) are decentralized into Faculties, Research Institutes, and Centers. Each University is expected to conduct both basic and applied research. The quantity and quality of research done and published by academic staff is a major consideration in promotions. As other universities, the ABU has a University Board of Research where the research funds are released. Financial support for the universities is virtually the sole responsibility of the Federal Government of Nigeria and is provided separately for recurrent and capital expenditure, teaching and research equipment, and research. University funding has declined constantly during the last 12-14 years; in some cases even regular payments of salaries could not be assured.

There are numerous research linkages between the ABU and the three attached NAROs. Most of the Faculty academics participate at all stages in the research activities of the NAROs, especially the IAR. These linkages ensure a more efficient use of limited resources and prompt information exchange. Although the integration and cooperation of the universities with the NAROs is quite developed, especially in the case of ABU, the authors conclude that factors like the supervision of the universities and the NAROs by different federal ministries, the territorial defense instinct of the NAROs which have been established long before the first universities, and missing formal linkages between the universities and the NAROs, different locations, poor logistic support for both systems and the poor communication system in the country can be seen as major limitations to a higher contribution of the universities to agricultural research efforts. The authors suggested, that by removing these constraints the role of universities in the NARS can be strengthened.

The background paper on Benin was presented by Prof. C. Adandedjan and Dr. J. Detongnon. In Benin, the NARS consists principally of the INRAB (former named the DRA - Direction de la Recherche Agronomique) which was created in 1972 and which has the national mandate for agricultural research activities. The research programs are primarily financed by external institutions which at the same time have a large impact on the formulation of the research programs.

The University of Benin was founded in 1976 and is offering master courses in agriculture and agricultural related subjects. The research councils of different scientific sectors are responsible for the research facilities and programs of the faculties. Here also, financial

resources for the research programs mainly come from regional or international cooperation projects. However, the funding institutions of the University are different from the ones of INRAB.

Between the University and the INRAB, or other research organizations some formal (e.g. University is member of the administration council of INRAB, both are member of the CNRA - Comité National de la Recherche Agronomique - where national research priorities are determined etc.) and informal (joint publications of staff members, joint seminars etc.) relations exist. Although these forms of cooperation imply a number of advantages, the cooperation between these institutions is described as weak. The authors concluded that a number of factors are constraining a stronger cooperation like the weak participation of the University in elaborating national research programs, the short duration of University research projects, the competition for financial resources, the insufficient publications and meetings, or missing motivations of University staff etc.. The authors suggested among others, the improvement of the information system on research (e.g. publication, joint meetings), a national policy of financing research activities and the promotion of joint projects to improve the present situation in order to strengthen the role of the University in the NARS.

After the two presentations the general discussion focused on issues and major considerations of the country case studies in Benin and Nigeria. The discussion leader, Prof. V. A. Agbo, emphasized the importance of the information provided and raised the following points to be discussed further :

- human and financial resources of agricultural research ;
- publications ;
- relevance of research activities for development ;
- constraints for basic and applied research, particularly the specific bottlenecks which are the key to resolving the problems identified ;
- role of and relationship to foreign donors (What does agricultural research offer? What are the mechanisms to initiate and carry out externally funded research projects?) ; and
- incentives to researchers and professors to strengthen linkages and cooperation and to do research and publish the results.

It was discussed that the social relevance of research is very important. Agricultural research is at present often criticized that it has become too self serving and loses sight of development needs. How can one find out in the two systems the "social demand" and how can research priorities and activities be related to it. It was asked to what extent research is directed to the real agricultural problems farmers face.

A representative of Benin argued that both, research organizations and universities, are not sufficiently responsive to the needs of societies. He proposes that the evaluation process places higher priority on development needs and to serving national agricultural policy objectives. The question was raised whether it is required to involve extension services and farmers in the conception of research if research is to be made more responsive to social demand. It was contented that to focus research properly one has to involve the development organization and the farmer and extension service. Their involvement in the process of identification and evaluation of research is important.

A second point of discussion focused on issues related to the availability of resources in both country case studies. One particular problem of public funded research was pointed out; i.e. the recurrent budget crises and the instability of research funding. A Nigerian representative emphasized similar constraints in both systems :

- inadequate human resources;
- inadequate facilities; and
- inadequate publication and literature availability.

In this context he mentioned the particular problem of the impatience of donors who want to see quick results. Agricultural research requires long gestation periods and, therefore, donor funding to agricultural research is weak.

The evaluation of research results was another issue in the discussion. It was highlighted that the problem of evaluation is extremely important and needs to be addressed. However it was discussed that evaluations of agricultural research in view of development impact is difficult. Concerning the evaluation and feedback from farmers a national consultant of Nigeria summarized the actual structure as follows :

- In all research institutions there is a one week meeting at the end of the growing season where the research institute presents and documents its program and achievements and receives reactions from all present (farmers, extension agents).
- There is a second group of meetings every month "technical review meetings" with subject matter specialists and officials down to the lowest level extension agent.
- Before a research project is started there is a diagnostic mission which reviews relevance.
- There is also an external review of research.

A national consultant of Benin summarized concerning evaluation, that there are evaluation meetings at the level of CARDER which has the national mandate for extension with a similar structure as discussed in the case of Nigeria. Of course the results are different and depend on the specific situation.

A last major point in the discussion focused on the cooperation between universities and NAROs. A Nigerian representative pointed out that it is very important that universities are already involved in the planning stages of research. If there is no involvement in the early stages, there will be no commitment from their side. It was further discussed whether the linkages shown in the Nigerian system are really working in practice and how. The question was raised to what extent the various boards (Committees) are coordinating research with other requirements for development (infrastructure, extension etc.) which should be addressed in the final report.

Although the presentations provided a comprehensive overview on the two national case studies some questions on different aspects were raised which have not been addressed in the presentation. These include :

- the research agenda of the two systems in Nigeria and Benin ;
- the time allocation of scientists at universities for teaching and research ; and
- the output of the universities in terms of graduates, doctoral candidates etc. and their employment situation.

2.4 Session IV : Developed countries' universities in NARS

The System in the United Kingdom and the English speaking Caribbean was presented by the international consultant, Prof. L. Wilson. In his presentation the evolution of the TETRAD in universities and NARS in the United Kingdom is reviewed and the organization, structure and management of these institutions are outlined. In the United Kingdom the national agricultural research is pursued by the institutions supervised by the Agricultural and Food Research Council (AFRC) with a mandate for fundamental and strategic research and a separate system for short term and adaptive research in the Departments of the Ministry of Agriculture, Fisheries and Food. The universities have the mandate to strengthen the national knowledge system and the knowledge base for development. National research institutions and the research activities of the universities are under the AFRC. This system implies a separation of basic research between the universities and the AFRC institutions and a separation of both from applied research under the Ministry.

The linkages between universities and NAROs which can be found in the British system are briefly outlined using the Esman typology of linkages, who distinguishes normative, functional, enabling, and diffused linkages. Prof. L. Wilson stressed four factors which influence the role of the universities in NARS in developing countries with particular reference to the English-speaking Caribbean countries. These are the separate ministerial location of universities and NARS, the marginalization of University research due to the separate ministerial location, the new imperatives for agricultural development like agricultural diversification, sustainability of the natural resources, or new technologies which have enforced a stronger integration of NARS components, and the regional approach to TETRAD which made it easier to react to the new imperatives. Prof. L. Wilson concluded that although TETRAD is separated in the British system it has succeeded in providing advanced practices and competitively-priced products. This success is due to diffused linkages effected through a widely used and efficient communications system. Beside others, the improvement of the communication systems, the delegation of the responsibility for agricultural research to a National Research Council, the allocation of research resources through the Ministry of Agriculture and a defined percentage for the universities, and the regular review of programs were highlighted as factors which strengthen the role of universities in NARS. In addition regional cooperation as is the case in the Caribbean Countries should be considered as a powerful tool in the optimization of the use of limited research resources. He proposed finally that management and coordination of TETRAD is a central problem in the agricultural development of developing countries and that those of sub-Saharan Africa are no exceptions to this generalization.

The French System was presented by the international consultant, Dr. H. Carsalade. In his presentation on agricultural research, education and development in France he focused on aspects related to the tropical agriculture and the role of universities in the NARS. In giving a historical background of agriculture and tropical agricultural development he pointed out that the government with its institutions and the professionals can be seen as the principle actors in agricultural research whereas universities played only a marginal role. The "exported" agricultural research structure to the former French colonies was a research system that was originally oriented towards the colonial complex and - in the nearly total absence of any professionals in these countries - dominated by the public sector; a situation which was overtaken by the new governments after independence. Compared to the French agricultural research system which was dominated by highly specialized public research institutions and

technical centers, the agricultural training and education was the mandate of the universities and the Ministry of Agriculture. The agricultural development in France especially the need to integrate the potential contribution of the different scientific disciplines, the new technologies and the new forms of integration (e.g. the EU) have led to different reforms concerning a stronger cooperation between the specialized agricultural research and education institutions. In his conclusion Dr. H. Carsalade stressed the importance of the initial French model of agricultural research for the former French colonies. But, agricultural development in France caused a very specific evolution of the French system.

The German system was presented by the project supervisor of the University of Hohenheim, Prof. F. Heidhues. Germany's system of agricultural education and research differs markedly from that of other European countries and is characterized by a great institutional diversity which is the outcome of a historical development. Agricultural education is provided at three levels, the apprenticeship and the academic education at polytechnic colleges and at universities. Apart from offering high-level professional education, the universities have the task to recruit young scientists and to conduct research directly. They have traditionally put strong emphasis on research besides their educational obligations. Beside the academic institutions research is carried out by other public and private institutions under state or federal level responsibility. In the public domain agricultural research institutions outside of academia like the "Landesforschungsanstalten", the "Bundesforschungsanstalten", the Max-Planck Society or the Frauenhofer Institutes do not have teaching obligations but some scientific personnel at these institutions are involved at least part-time, in teaching as part of the close cooperation with universities.

Although the German system with its numerous institutions of varying size, organizational structure and sources of funding shows a high degree of flexibility, versatility and adaptability, it raises a number of problems too. Prof. F. Heidhues highlighted the problem that resources tend to spread relatively thinly over a large number of research institutions, thus hindering among others the concentration of research efforts, the danger of overlapping and possible duplication, the difficulty of international cooperation because German agricultural research is not represented by a single institution. Although purely research-oriented institutions permit a more concentrated and focused research effort it is confronted with the problem of aging research staff which can lead to a loss in flexibility, lack of innovative approaches and new ideas. Compared to them, the dual function of research and teaching at universities can be seen as an invaluable and mutual asset to benefit both, research and teaching. In his conclusions Prof. F. Heidhues underlined the importance of integration of agricultural research into the universities and a regional based approach to be able to react to the regional specific issues.

After the three presentations on the situations in United Kingdom/Caribbean, France and Germany a general discussion on the relevance of developed countries' experiences to the study followed. The discussion was introduced by the discussion leader, Dr. M. Aklamavo. He recommended the regional approach of the West Indies for African states. Because of the costs, no single African nation is likely to be able to bear the cost of research in universities and research institutes. For further discussion he suggested two questions which must be addressed: is the information presented for the developed world in line with the present study ? If yes, what lessons do we learn from these cases ?

During the discussion a number of questions and issues were raised by the representatives of Nigeria and Benin concerning the different systems. It was argued that :

- the American system, which has been influenced by the German system, has a lot to offer by way of the Land Grant universities by bringing together research, education and extension under one umbrella;
- in Germany and France, there is less central control by the government and it is to be questioned to what extent agricultural research should be self-regulatory ?
- in the light of the French experience, it has to be questioned whether research should stem from cultural challenges ? In Africa very little agricultural development has occurred: tools are still the same traditional ones, it therefore ends up importing technologies from the developed world;
- in all three systems there are merits and demerits. A Nigerian representative argued that in Britain for example, a fixed percentage of revenue is allocated to universities and research institutes. In Germany, the private sector funding of research is higher then the government funding. He believes that the developing countries need to borrow some ideas from the German system. He concluded that a complete freedom of scientists to engage in whatever research, is not possible for developing countries at the moment. However, there should be a general framework of research objectives/priorities within which researchers are free to work.

Concerning the importation of these systems it was discussed that the various systems presented might have evolved from a combination of factors: social, political and economic forces. There are problems associated with importation of systems that have no bearing with social and economic forces operating in African countries. It was questioned whether it is then possible to develop a system that is not indigenous to African culture. It was pointed out that even if there are differences among the systems of developed countries, they seem to be functioning in their own way. This can be seen in contrast to situations in developing countries where the systems are not functioning.

Prof. L. Wilson supported the idea of evolving indigenous systems in Africa. Historically, aspects of scientific ideas in medieval times were originally developed by the Greeks, then picked up by the Romans, then the Arabs before the present-day European influence. Therefore he sees no reason why scientific ideas/systems cannot now be developed in Africa. He pointed out that there should be a stronger institutional cooperation among the smaller countries in Africa to develop regional research institutions. With respect to research freedom, he argued that most scientists do have some degree of freedom. However, where private funding is involved in research development, the scientist would suffer some loss of freedom. Concerning the research agenda he mentioned that one should be aware that both the government and the private sector can make policy mistakes in agricultural development systems and therefore none of them should insist on setting the research agenda in isolation. He concluded that no particular system would be condemned. There are merits and demerits in all systems. What is important here is what is made of the system.

Dr. H. Carsalade highlighted that the three European systems were not presented for reference purposes. However, he wanted to point out the historical aspects of agricultural development in France, especially on the emphasis that was placed on export crops in colonial days rather than food crops. African countries must organize themselves to develop agricultural systems based on a set of objectives to meet their own needs. Concerning the regional concept, he

cited the example of WARDA, which brings together a number of countries for planning and monitoring research in an international center. He highlighted that social needs are expressed clearly and forcibly by various segments and groups of the society. In France social needs are expressed by farmers and at various political levels (because farmers are represented in national assemblies). This encourages a system of politicians reporting back to their constituencies. The trade unions also have a high capacity to express their needs to the government.

Prof. F. Heidhues supported the development of indigenous systems in response to the need of the environment. He pointed out that he cannot see a single system developing for all the countries in Africa. Freedom of research may not necessarily lead to a duplication of research, therefore one cannot conclude that the government, in controlling the research agenda, is more efficient than the private sector in directing research.

2.5 Session V : Current role of universities within NARS

Session V and VI of the workshop were allocated to working groups. For each session two working groups were formed, one with the Nigerian representatives and another with the representatives of Benin. Five objectives of the working groups can be distinguished :

- to synthesize the information already available on Nigeria and Benin ;
- to define the limits of the case studies ;
- to identify the gaps of the present knowledge ;
- to identify the necessary information to be gathered from the field work ; and
- to propose whenever possible criteria, parameters, and tables in order to describe, to quantify and to compare the different situations in the country case studies.

An introduction to the first working group was given by Dr. C. Hoste on the roles of universities and the position of University research in NARS. He gave a brief overview on the four main roles of universities, namely teaching, post-graduate training, research and transfer of technology and services. Concerning the research component of the universities he raised the different questions which should be addressed in the working groups. These are :

- What should be the contributions of universities ?
- How can they be estimated ?
- What are the constraints of an increased contribution ?
- What is the relation between the University and the NARO ? Competition or complementary ?

The discussion in the working group of Nigeria and Benin on "Research at the University and constraints to universities participation in national agricultural research" was guided by a list of questions concerning the role(s) of universities (listing of University roles, differentiation of University roles, and evaluation) and the status of University research (planning and evaluation, University research resources and constraints, and other University contributions) (see Annex 4).

2.5.1. Working group of Nigeria

The discussion in the Nigerian working group was summarized by the national consultant, Prof. A. O. Osinowo.

The major roles of universities in Nigeria were identified as:

- undergraduate education;
- postgraduate training;
- research; and
- outreach and service.

It was noted that all four roles listed above served to make universities agents of social change. The need to further partition research into basic and applied was identified. Also, the term "outreach" appeared to be too broad and seemed to include several components such as

extension, development etc. The need was therefore felt to define outreach in terms of all its components.

Concerning the differentiation of University roles the following approaches were agreed upon:

- The roles identified for universities should be the same for different faculties but their proportions or emphasis vary.
- On the relative roles for different faculties, a partitioning was attempted only for the faculties of Agriculture and Veterinary Medicine as follows :
  -undergraduate education - 50 %;
  -postgraduate education - 20%;
  -research - 20%; and
  -outreach and service - 10%.

However, it was agreed that the actual proportions should be determined through a survey. Also, the optimal distribution should be based on actual sampling of lecturers' opinions.

To evaluate the four roles identified above the following criteria were agreed upon :

- undergraduate education :	number of students graduated;
- postgraduate training :	number of MSc and Ph.D. theses;
- research :	number of publications in scientific journals;
	number of production recommendations made;
	number of books published;
	number of extension guides and bulletins produced;
- outreach and service :	number of mass media programs produced;
	number of short-term training and workshops held;
	number of monthly technology review meetings (MTRM) attended;
	amount of local extension undertaken;
	number of on-farm adaptive research trials participated in;
	number of studies of adoption rates of improved technologies.

To describe the planning process for research in Nigeria different levels have to be distinguished.

a) Planning process at University level
   This involves the following stages, using ABU as example :
   - preparation of research proposal by a scientist or group of scientists;
   - at the Faculty of Veterinary Medicine the proposal is reviewed by the Postgraduate and Research Committee;
   - at the Faculty of Agriculture there is peer review of the proposal at the departmental level;
   - the proposal is then subjected to detailed evaluation by the disciplinary sub-complex which gives recommendations to the University Board of Research. There are four different

sub-complexes, namely: Biological Sciences - to which Agriculture belongs, Humanities, Physical Sciences and Administration;
- final approval and funding by the University Board of Research which is a subcommittee of the University Senate.

b) Planning process at NAROs
The following stages can be distinguished :
- the planning process begins with a diagnostic survey to identify production constraints;
- the research proposal is then developed by one or more researchers;
- the proposal is reviewed by a departmental Committee which is disciplinary-based;
- further evaluation is made by the Program Review Committee with the investigators in attendance; and
- final approval by the Professional and Academic Board.

c) Planning process at the national level
This involves the following stages :
- research institutes prepare their research programs annually;
- submissions by the different institutes are collated by the Agricultural Sciences Department of the Federal Ministry of Agriculture;
- each institute defends its budget at the Federal Ministry of Finance and gets funded based on the government's priorities.

There is really no planning process as such at the national level, apart from this unsatisfactory arrangement.

The faculties and units at University contributing to agricultural research include the following using ABU as example :

- Faculty of Agriculture;
- Faculty of Veterinary Medicine;
- Faculty of Social Sciences;
- Faculty of Science;
- Faculty of Engineering;
- Center for Social and Economic Research; and
- the three NAROs: IAR, NAERLS and NAPRI.

The comparative advantages of the universities versus the NAROs for different types of research are listed below. The focus here was on research capacity:

Comparative advantage			
Type of research	Universities	NAROs	Comments
Basic	High	Low	universities have more basic scientific equipment and laboratories and greater freedom of choice of research areas
Strategic	Same	Same	
Applied	Same	Same	
Adaptive	Low	High	NAROs have more field facilities and are in closer contact with national extension services

The funding of University research is by the National Universities Commission and to a small extent by the private sector and other Ministries and parastatals. There is also some funding by international donors. The amount of research funds internally generated is very little. There is no competition between universities and NAROs for research funds. NAROs funding comes from a different Ministry, the Ministry of Agriculture.

Simple criteria for estimating available resources for agricultural research are :

- research farm size;
- number of academic staff;
- number of postgraduate students; and
- research funding level.

The evaluation of output from University research funding is by the University Board of Research through progress and final reports submitted by researchers.

As main constraints to an increased contribution of universities to national agricultural research the following have been identified :

- dichotomy in domicile;
- poor funding;
- industrial unrest;
- heavy teaching load; and
- weak research-extension linkages.

Concerning other University contributions to development it was finally discussed that undergraduates can undergo industrial training at research institutes.

2.5.2 Working group of Benin

The discussion in the working group on Benin was summarized by the national consultant, Dr. J. Detongnon.

A list of the present roles of the University was presented based on the documents collected. The roles are the following :

- education;
- post graduate and professional training;
- research; and
- technology transfer and public service.

All agreed that questionnaires should be developed in order to be able to measure the results of the different roles.

A discussion was held on which faculties of the University of Benin should be involved in the study. The following list was established :

List of Faculties	**Departments involved**
Faculté des Sciences Agronomiques (FSA) :	-All departments
Faculté des Sciences et Techniques (FAST) :	-Biochemistry
	-Biology
	-Zoology
	-Chemistry
	-Geology
Faculté des Sciences Juridiques Economiques et Politiques (FASJEP) :	-Economy
	-Law
Collège Polytechnique Universitaire (C.P.U) :	-Environment
	-Natural sciences
	-Animal Production
	-Génie-Rural
Faculté des Lettres, Arts et Sciences Humaines (FLASH) :	-Geography
	-History
	-Psychology, Sociology
	-Language science
Institut National d'Economie (INE) :	-Business administration
	-Statistics
	-Population

In addition, a number of public services (like Department of Agriculture, Department of Fisheries, and CBRST) and NGOs (like CREDESA, CERAPIP, SONGHAI project, and EMAUS International) who could play a part in the study were named.

Different planning processes of agricultural research in Benin were discussed. The planning process is presented as follows according to the different levels :

a) at University level there is the scientific council with specialized committees;
b) at the level of INRAB reference was made to the strategic plan of INRAB which is elaborated at this time; and
c) at national level the planning process is represented by the CNRA. The CBRST is also involved in the planning process and directs several networks in which agricultural research is included.

Concerning the financing of agricultural research again different forms have to be distinguished according to the different levels :

a) at University level financial resources come from
   - the State; 10% of the University budget is reserved for research;
   - multilateral and bilateral institutions; and
   - individual contracts.
b) INRAB receives funds from :
   - the State;
   - (multilateral and bilateral) donors; and
   - individual contracts.

Concerning the evaluation method it was pointed out during the discussion, that there is not one systematic method of evaluation. All agreed to the necessity of having the status of researcher with a clearly defined method and criteria for the evaluation of research activities. However, the present situation can be described by the following evaluation criteria for the different levels.

a) At University level we can distinguish :
   - individual evaluation for each project;
   - list of finished theses; and
   - list of publications.
b) At INRAB level we can distinguish :
   - evaluation made by the donors;
   - evaluation made by the users;
   - adoption rates of the research results; and
   - number of publications (but they cannot be used as only evaluation criteria).
c) At CBRST level evaluations are made through the organization of workshops.

During the discussion, the debates were focused on defining the comparative advantages and the constraints of University research and to be able to better define the influencing factors of liaison between agricultural research and the University. The following advantages were mentioned for the University :

- complementarity of human resources;
- flexibility of the University staff; and
- advantages for new technologies (Biotechnology, Molecular Biology, Embryo transfer).

In the final discussion the following constraints were highlighted concerning a higher contribution of the University to NARS :

- lack of financial resources;
- individualistic behavior (desire to keep everything to oneself);
- lack of communication and information; and
- a disciplinary approach rather than a multidisciplinary approach.

2.6 Session VI: Potential role of universities within NARS

The introduction to the second working group on "Improvement of the contribution of universities to national agricultural research (planning and execution)" was given by Mrs. Michelsen. In her presentation she highlighted the main questions which should be addressed in the working groups. These are :

- What are the potentials for improving the contributions of universities to NARS?
- How can they be estimated ?
- What are the benefits of an increased contribution ?
- What are the constraints of an increased contribution ?

The discussion in the working group of Nigeria and Benin on "Mechanisms (existing and potential) for improving universities' contribution to national agricultural research" was guided by a list of questions concerning opportunities and advantages, potential mechanisms, benefits and constraints of an improved contribution of universities to agricultural research (see Annex 5).

2.6.1 Working group of Nigeria

The discussion in the working group on Nigeria was summarized by the national consultant, Prof. A. M. Emechebe.

The unexplored opportunities for improving the direct research contributions of universities to NARS in Nigeria exist at three separate levels, namely the national level, the governance level and project level.

a) At national level
   There is absence of an effective facilitating agency for :
   - coordination of development-oriented research;
   - ensuring adequacy of research funds; and
   - ensuring timely release of research funds.

b) At University governance level
   The Vice-Chancellor (as the Chairman of the Governing Council of University-based Research Institutes and as the Chief Executive of the University) should liaise with the funding Ministry to ensure greater availability of research funds. The Vice-Chancellor should also permit NAROs scientists to benefit from the University Board of Research funds.

c) At project level
   - Faculty staff should play greater roles in the institutes' research by active participation in project formulation, execution and monitoring.
   - NAROs should open their door more widely to Faculty staff participation in joint seminars, sabbatical placements, etc..
   - In ABU, the 3 research institutes should be part of the proposed College of Agriculture and Veterinary Medicine.

The indirect University contributions to NARS of tertiary education, training, and outreach can be strengthened by :

- joint planning of both research projects of institutes and academic curriculum of universities; and
- universities conducting research into innovative extension methods that are compatible with socioeconomic peculiarities of different communities.

The universities have comparative advantage to assume initiative in setting up collaborative mechanisms in:

- both undergraduate and post-graduate training - these being their primary functions; and
- basic and strategic research, given their better equipment and greater freedom to conduct this type of research.

On the other hand, NAROs have comparative advantage in adaptive and applied research, and in extension activities.

The mechanisms suggested to exploit opportunities for improving the direct research contributions of universities to NARS are related to the unexplored opportunities mentioned above. Basically what is needed is an effective facilitative mechanism which could be a revitalized Agricultural Sciences Department of the Federal Ministry of Agriculture or the present National Advisory Council on Agricultural Research (NACAR) or a new and strong Agricultural Research Council of Nigeria (ARCN).

All collaborating institutions and individuals (NAROs, faculties, professors, researchers) will be affected by collaborative mechanisms in which they are directly or indirectly involved. The net-benefits which will accrue from the collaborative mechanisms suggested are the following.

a) A more effective facilitating agency at national level will lead to :
   - better productivity of agricultural research designed to meet development needs of the country;
   - dependable and realistic funding for research;
   - timely release of research funds; and
   - properly coordinated joint projects.

b) A better performance at the University governance level will lead to :
   - better research coordination and exploitation of complementarities;
   - improved curriculum; and
   - sabbatical placements (note: this applies for staff from other institutes, other than those of ABU).

c) A better collaboration at project level will lead to :
   - higher research productivity;
   - better research relevance; and
   - general improvement of scientific skills.

The constraints to improved collaboration are located at various levels of coordination. At the national level the absence of a facilitating agency can be identified as constraints and at University governance level the absence of contestable funds for joint projects. These constraints should be removed by those organisations or individuals (directly or indirectly) who are responsible for their occurrence.

2.6.2. Working group of Benin

The discussion in the working group on Benin was summarized by the national consultant, Prof. C. Adandedjan.

The discussions on the subject of opportunities, advantages and mechanisms led to the conclusion that new mechanisms are necessary to fully make use of the potential role of universities within NARS. Also it was specified that enlarging and making more efficient the communication system between the different actors of the NARS would improve the role of the University in NARS. The following actions were proposed :

- The participation of universities in the monthly workshops which discuss technologies which are held at the CARDER level.
- The development of a list of all NARS researchers by the CBRST. Consulting this list will facilitate finding the suitable persons.
- The increased participation in designing the research program of all components of the NARS. The levels of dialogue for a certain effectiveness in this increased participation remains to be specified.
- The organization of more regular scientific meeting days.
- More effective participation of INRAB in University education and also a more active participation in the pedagogical days of the Faculties.
- The participation of INRAB in the choice of the thesis themes of the graduate students.
- The development of a list of already integrated, on-going and proposed research projects at the different institutional levels.

The role of the University in training should continue and their development is underlined by the existence of FINSA (Cours International de Formation sur la Nutrition et les Sciences Agroalimentaires), FIDESPRA (Cours International de Formation pour l'Appui à l'Auto-promotion rurale), of a management center of agricultural enterprises, and of a Centre d'Appui au Développement (CAD) at the FSA. The financing of the doctoral training at the NARS level remains to be examined because of the lack of scholarships for the post graduate training.

The following constraints can be distinguished for each of the different linkage mechanism levels.

a) At CBRST level :
   - lack of mutual knowledge and lack of a cooperative spirit of the researchers; and
   - irregular routine meetings with poor attendance from main participants.

b) At CNRA level :
   - no consulting on the dates of the meetings;
   - lack of interest from the University researchers and lack of incentives; and
   - lack of joint research projects.

c) At the Conseil Scientifique level at the University :
   - rigid research themes, not presenting an interest for a multidisciplinary approach; and
   - poor attendance at meetings.

A general recommendation was made proposing improved scheduling of meetings in order to reduce absenteeism and increase the participation of researchers to these meetings.

2.7 Session VII: Case study approach and conclusions

An introduction to the field work approach was presented by Mrs. Michelsen. In the first part of her presentation she highlighted the main institutions and interest groups in Nigeria and Benin which will be involved in the study. As a result of the discussion in the working groups, she summarized for the two case studies the departments of the University, the main research institutions, and the constituencies (e.g. ministries, national or international research institutions, other universities, farmers organizations, students etc.). The second part of her presentation focused on the main persons to be interviewed. Here, three groups can be distinguished : a) staff members of the University departments which are involved in the study; b) key actors of the University e.g. the Vice President, deans and heads of departments and key actors of the main NAROs e.g. the Director General, program directors or heads of research stations; and c) participants of linkage mechanisms which have been established between the University and the NAROs.

From the first two groups information about the establishment (e.g. number of staff, incentive system), the management and structure (e.g. responsibilities), the infrastructure (e.g. research facilities), the budget (e.g. sources and allocation), the objectives and plan (e.g. priority setting), the program with different activities (e.g. number of courses, projects), the output (e.g. publications), evaluations of the attained results, and linkages with other institutions and interest groups (e.g. ministries, farmers, students) of the University and the NAROs have to be collected.

A summary of actual linkage mechanisms according to their different functions in the case studies was then provided by the national consultant of Nigeria, Prof. A. O. Osinowo, and the national consultant of Benin, Prof. C. Adandedjan. For each of these linkage mechanisms, participants from the different institutions involved should be interviewed. The main areas of data to be collected are information about the personnel, management and structure (e.g. people involved, actors in charge of management, initiator of linkage), the resources (e.g. available financial resources and equipment, direction of flow of resources between institutions involved), the objective of the linkage mechanism, the program (e.g. concrete activities, frequency of meetings or communication), the output of the program and evaluations (e.g. measurable outcomes, results of evaluations), the benefits and costs for the different participants and the institutions involved and about the major constraints. Mrs. Michelsen concluded that further attempts have to be made to include the available information on Nigeria and Benin into the field work approach in order to make it more focused and realizable.

The general discussion on information and data collection and analysis was introduced by the discussion leader, Prof. F. Heidhues. He recommended that:

- the questionnaire should be widely distributed;
- that a list of priorities should be made for the several factors; and
- that particular attention should be given to distinguish between what exists from what could exist.

He insisted on the "political policy" of the present situation, in particular the factors which explain the present situation, and those which determined and will determine the policy makers. To incorporate these points into the field work approach more time is needed.

A number of questions focused on the questionnaire as an instrument of inquiry. It was asked whether the questionnaire is the most appropriate tool; what should be the appropriate length; should it be addressed to all staff members or only to key actors ? On the first point it was decided that the national Steering committees and the national consultants will have all liberty to use the tools for the data collection which are the best adapted for the pre-defined framework. In addition, the questionnaire must be adjusted to each person to be interviewed.

Complementary elements must be shown in the information to be collected:

- elements which permit to trace the eventual negative effects of strengthening relations between NARS and universities; and
- elements which permit to define the logic of the socio-economic policy of the present system; and its capacity to adapt itself to change (e.g. the case of Benin where the change to a free economy included the participation of the private sector in decision making). However, time for revision will be needed.

Other adjustments which were recommended are :

- more precision in analyzing constraints on the type of research carried out; and
- the consideration of both ways of linkages (e.g. the training by the universities for managers of NARS or the reciprocal evaluation of research).

Dr. C. Hoste presented the proposed workplans and expected contributions of the different actors and participants of the project. One shortfall is that the preparation of the field work approach could not be finalized during the workshop, even if a consensus was built on it. Therefore, it was agreed that more time should be given to the national consultants and the ISNAR research associate to digest the results of the workshop and to better prepare the field work instead of launching the data collection immediately in Nigeria and Benin. A representative of Benin strongly underlined the fact that the time planned by the project for obtaining results from the implementation of the proposed action plans is too short and the amount of money available for this activity is not adequate. The time allocated to the implementation should be 1 to 3 years instead of the proposed 3 months. Dr. C. Hoste explained the difficulties faced by ISNAR to convince the donor to make provision for launching action plans. However, ISNAR will continue to follow up on the contacts and efforts which have been undertaken to receive further funding. In relation to the field work of the national consultants it was argued, that the time foreseen is very short. The number and length of the meetings of the national Steering Committee will be decided by its chairperson. It will also be possible to organize before the next project workshop in November 1994, a meeting between the Steering Committee of Benin and Nigeria or between the four national consultants. The agreed workplan is listed in detail below.

Before discussing the specific issues of a second part of the overall project Dr. C. Hoste gave an overview on the original conception. According to the criteria for selecting the country case studies, namely an anglophone or francophone country, small or medium-large size country, and universities with and without specialized agricultural research institutions, the proposed countries for the second part of the project have been Burundi, Cameroon, Côte

d'Ivoire, Senegal and Tanzania. Although several donors have been contacted for financing of the second part, no funding has been approved so far.

Concerning the possibility of a second part of the overall project he emphasized that the actual first phase of the project should focus on developing a methodological framework to strengthen links which will be realistic and could be diffused. He insisted on the limits of this first phase which should demonstrate to the donors that the study can result in realistic recommendations and practical action plans. From these elements one can with other donors prolong or extend the first part of the project and develop a second part. Given this background of the overall project it has also to be decided, whether a second part of the project is needed, whether it should focus on sub-Saharan Africa or whether it should instead be implemented in another continent.

All participants were in favor of a second phase of the project. The experience in Benin and Nigeria should be shared with other countries. The participants hoped that in the medium term this second phase will remain within sub-Saharan Africa. The idea of associating South Africa, which has shown large interest in the project, as another case study, was welcomed. However, South Africa's specific problems concerning the relations between the universities and the NAROs were pointed out. The international consultant Prof. L. Wilson suggested for a second phase of the study to include other Nigerian universities due to the specific relations between ABU and the NAROs located on the campus. This would require an engagement of NAROs which would be part of the follow up study to work for a strengthening of the universities in NARS.

In their closing speeches, the ISNAR representative, Dr. C. Hoste, and the chairpersons of the Steering Committee of Benin and Nigeria, Dr. H. F. Nouwakpo and Prof. L. B. Olugbemi underlined the importance and success of the present workshop. It is now the responsibility of the members of the steering committees and the national consultants in Benin and Nigeria to launch the study. The workshop has improved the dialogue and understanding between the participants from the universities and the NAROs between and within Benin and Nigeria. All actors involved in the organization of the workshop as well as all participants were thanked for their support and active participation. As a result of this most successful workshop Prof. L. B. Olugbemi in the name of the Steering Committee extended an invitation to all participants to attend in the second project workshop to be held in Nigeria in November 1994.

3. Workplan and expected contributions from the different actors

The following workplans and expected contributions from the different actors/participants of the project have been agreed on :

3.1 Workplan

1994	
April 18 - May 4	On field discussion : -Nigeria (1 weeks) + ISNAR -Benin (1 weeks) + ISNAR
May 9 - May 31	Final field work approach
June / July	Field work
August 1 - 15	Revision of draft reports and action plans
August 15 - 31	On field discussion : -Nigeria (2 weeks) + ISNAR -Benin (2 weeks) + ISNAR
	Draft reports and action plans
September 30	Final reports and action plans
November 1 - 4	Second project workshop
November 30	Approved reports and action plans by the governments
1995	
March 6 - 10	Evaluation of implemented action plans
April	Preparation of final report
April 30	End of the project.

3.2 Expected contributions from the national consultants

March - April	Preparation of the first workshop
April 12 - 18	Participation at the first workshop
April - May	Participation in launching the study
June - July	Data collection and analysis
August	Revision and discussion on draft reports and action plans
End September	Final documents
November 1 - 4	Participation at the second workshop Presentation of report and action plans
Mid November	Final report and action plans
November - January 1995	Resource person of the Steering Committee for launching action plans
March 1995	Participation at the evaluation mission on implemented action plans.

3.3 Expected contributions from the members of the national steering committees

April 12 - 15	Participation at the first workshop
June	Meeting before data collection (1/2 day)
Mid July	Meeting on progress of project (1/2 day)
August 15 - 31	Discussion on reports and action plans (+ ISNAR)
October 1 - 10	Comments on reports and action plans
November 1 - 4	Participation at the second workshop
November 20 - 30	Submission of documents to governments for approval
December, January, February 1995	Monthly meetings (1/2 day)
March 6 - 10, 1995	Meeting on evaluation of results of implemented action plans (1 day).

3.4 Expected contributions from the international consultants

April 5 - 8	Preparation of the first workshop
April 12 - 15	Participation at the first workshop
June 15	Evaluation of progress of study
September 20 - 30	Comments on the draft reports and action plans
November 1 - 4	Participation at the second workshop
November 21 - 24	Final revision of documents
March 20 - 24, 1995	Comments on evaluation report on implemented action plans and suggestions concerning future of the overall project.

4. Conclusions

The high level of representation and the extremely engaging and active interventions during the discussions, made the workshop an important and successful step in launching the two country case studies in Benin and Nigeria. The launching was concluded by the declaration of the Nigerian and Benin participants that the project was now their own project, even though it was initiated by ISNAR. The responsibility of the project has been transferred to the institutions and staff members involved in the two countries. In a true partnership ISNAR will provide the instrumental assistance in reaching the project objectives.

In addition to this major achievement the following results of the workshop can be mentioned:

- An acceptation and a clear definition of the objectives of the study.
- A methodology agreed upon by the different partners.
- A clear definition of the type of information and data to be collected.
- A work schedule agreed upon by the different partners.
- An improved dialogue and better understanding between participants from the universities and the NAROs between and within Benin and Nigeria.

Annex 1 : Participants of the workshop

I. Participants from Benin

Steering Committee:

Dr. H. F. Nouwakpo, Adviser to the Minister of Rural Development, Ministère du Developpement Rurale (Chairperson)
B. P. 03-2900
Cotonou, Benin
Tel. 229/30.04.96-30.04.10
Fax 229/30.03.26

Dr. M. Houssou, Director General, INRAB
B.P. 884
Cotonou, Benin
Tel. 229/30.02.64
Fax. 229/30.07.26

Dr. M. Aklamavo, Director Human Resources, Training and Extension, Ministère du Developpement Rurale
B.P. 03-900
Cotonou, Benin
Tel. 229/30.04.96-30.04.10
Fax. 229/30.03.26

M.-L. Hazoume, Adviser to the Minister of Higher Education, Ministère de l'Education
B.P. 348
Cotonou, Benin
Tel. 229/30.06.81-30.19.91
Fax. 229/33.32.98

Prof. V. A. Agbo, Vice Chancellor, Université National du Bénin
B.P. 526
Cotonou, Benin
Tel. 229/36.00.27
Fax 229/30.16.38

National Consultants:

Dr. J. Detongnon, INRAB
B.P. 884
Cotonou, Benin
Tel. 229/30.02.64
Fax. 229/30.07.36

Prof. C. Adandedjan, Université National du Bénin
B.P. 526
Cotonou, Benin
Tel. 229/36.00.74
Fax 229/31.35.59

Other Participants :

M. Akle Jonas, Director General, CARDER - Atlantique
B.P. 648
Cotonou, Benin
Tel. 229 360072/360173

M. L Kpakpo, CARDER - Oueme
B.P. 81
Porto Novo, Benin
Tel. 229 21 26 11.

Prof. M. Nouhouayi, Dean FLASH, Université Nationale du Bénin
B.P. 526
Cotonou, Benin

M. O. Bienvenu, Chef de Service des Relations Internales de l'Université Nationale du Bénin
B.P. 526
Cotonou, Benin
Tel. 229 36 00 74.
Telex. 5010 UNB

Prof. T. Chonibare, Dean FAST, Université Nationale du Bénin
B.P. 526
Cotonou, Benin

M. R. Djiman, Chef Service, CBRST
B.P. 03-1665
Cotonou, Benin
Tel. 229/32 12 63
Fax. 229/30 24 66
Telex. 5329

Mr. C. Houndonougbo, INRAB
B.P. 884
Cotonou, Benin
Tel. 229/30 02 64
Fax. 229 30 07 36

Prof. N. Aho, Director General, CBRST
B.P. 03 - 1665
Cotonou, Benin
Tel. 229 32 12 63
Fax. 229 30 14 66
Telex. 2329 ITABEN

II. Participants from Nigeria

Steering Committee:

Prof. L.B. Olugbemi, Director General, IAR, ABU (Chairperson)
P.O. Box 1044 Samaru
Zaria, Nigeria
Tel. 234/69/50681
Fax. 234/69/50563

Prof. J.U. Umoh, Dean Faculty of Veterinary Medicine, ABU
P.O. Box 1044 Samaru
Zaria, Nigeria
Tel. 234/69/50681
Fax. 234/69/32401

Prof. E.O. Oyedipe, Director General, NAPRI, ABU
P.O. Box 1096 Shika
Zaria, Nigeria
Tel. 234/69/50681
Fax. 234/69/32401

Dr. A.M.B. Zaria, Director General, NAERLS, ABU
P.O. Box 1044 Samaru
Zaria, Nigeria
Tel. 234/69/50681
Fax. 234/69/32401

Prof. K.B. Adeoye, Dean Faculty of Agriculture, ABU
P.O. Box 1044 Samaru
Zaria, Nigeria
Tel. 234/69/50681
Fax. 234/69/32401

National Consultants:

Prof. A.M. Emechebe, ABU
P.O. Box 1044 Samaru
Zaria, Nigeria
Tel. 234/69/50681
Fax 234/69/50563

Prof. A.O. Osinowo, NAPRI
P.O. Box 1096 Shika
Zaria, Nigeria
Tel. 234/69/50571-4
Fax. 234/69/50563

III. International Participants

ISNAR Team :

Dr. C. Hoste
H. Michelsen
Dr. P.T. Perrault
P.O. Box 93375
2509 AJ The Hague, The Netherlands
Tel. 31/70/3496100
Fax. 31/70/3819677

University of Hohenheim :

Prof. F. Heidhues
University of Hohenheim (Institut 490)
Postfach 700562
70575 Stuttgart, Germany
Tel. 0711/459.27.84
Fax. 0711/459.27.85

International Consultants :

Dr. H. Carsalade
12 Rue Copreaux
75015 Paris, France
Tel. 33/1/42.73.34.03
Fax 33/1/42.73.34.03

Prof. L. Wilson, Dean Faculty of Agriculture, University of the West Indies
Port of Spain, Trinidad and Tobago
Tel. 663/13.64.169 Ext. 2112/2113
Fax 1/809/663/9686

Annex 2 : Agenda of the workshop

STRENGTHENING THE ROLE OF UNIVERSITIES IN NARS IN SUB-SAHARAN AFRICA

First Workshop, April 12 - 15, 1994, Cotonou - République du Bénin

Chairperson	:	H.F. Nouwakpo
Vice Chairperson	:	L.B. Olugbemi
Rapporteur General	:	H. Michelsen

Tuesday 12 April

09:00-09:30 Registration

Session I : Opening ceremony

09:30-10:30
* Welcome address by IITA, Bénin
* Welcome address by ISNAR
* Chairperson Steering Committee, Nigeria
* Chairperson Steering Committee, Bénin
* Official opening, Minister of Rural Development, Bénin

10:30-11:00 *Break*

11:00-11:15 Objectives and program of the workshop
Speaker : C. Hoste

11:15-12:00 Introductory paper: Role of developing country universities in NARS
Speaker : L. Wilson

12:00-13:00 *Lunch*

Session II : Methodological aspects of the project

Chairperson: K.B. Adeoye
Rapporteur: L. Wilson

14:00-14:30 Background and objectives of the project
Speaker : C. Hoste

14:30-15:15 Conceptual framework : Research questions, hypotheses and proposed methodology
Speaker : H. Michelsen

15:15-15:45 *Break*

15:45-17:00 General discussion : Conceptual framework and methodology
Discussion leader : P. Perrault

Wednesday 13 April

Session III : Country case studies: Background information

Chairperson : M. Houssou
Rapporteur : F. Heidhues

09:00-10:00 Country presentation - Nigeria
Speaker : A. M. Emechebe, A. O. Osinowo
10:00-11:00 Country presentation - Bénin
Speaker : C. Adandedjan, J. Detongnon
11:00-11:30 *Break*
11:30-12:30 General discussion : Issues and major considerations
Discussion leader : V. A. Agbo
12:30-13:30 *Lunch*

Session IV : Developed countries' universities in NARS

Chairperson : J.U. Umoh
Rapporteur : K.B. Adeoye

13:30-14:00 The British System Speaker : L. Wilson
14:00-14:30 The French System Speaker : H. Carsalade
14:30-15:00 The German System Speaker : F. Heidhues
15:00-15:30 *Break*
15:30-17:00 General discussion : Relevance of developed countries' experiences to the study
Discussion leader : M. Aklamavo

Thursday 14 April

Session V : Current role of universities within NARS

Chairperson : V.A. Agbo
Rapporteur (Bénin) : J. Detongnon
Rapporteur (Nigeria) : A.O. Osinowo

09:00-09:30 Introduction to the working groups : What are the roles of universities and what position should University research have in NARS
Speaker : C. Hoste
09:30-12:00 Working groups on Nigeria and Bénin: Research at the University and constraints to universities' participation in national agricultural research
Discussion leader (Bénin) : H. Carsalade
Discussion leader (Nigeria) : E. O. Oyedipe
12:00-13:00 *Lunch*

Session VI: Potential role of universities within NARS

Chairperson : A.M.B. Zaria
Rapporteur (Bénin) : C. Adandedjan
Rapporteur (Nigeria) : A.M. Emechebe

13:00-13:30 Introduction to the working groups : Improvement of the contribution of universities to national agricultural research (planning and execution)
Speaker : H. Michelsen
13:30-15:30 Working groups on Nigeria and Bénin:
Mechanisms (existing and potential) for improving universities' contribution to national agricultural research
Discussion leader (Bénin) : M. Houssou
Discussion leader (Nigeria) : L. Wilson
13:30-16:00 *Break*
16:00-17:00 Reports and conclusions of the working groups

Friday 15 April

Session VII: Case study approach and conclusions

Chairperson : M.L. Hazoume
Rapporteur : H. Carsalade

09:00-09:45 Introduction : Country case study approach
Speaker : H. Michelsen
09:45-11:00 General discussion : Information and data collection and analysis
Discussion leader : F. Heidhues
11:00-11:30 *Break*
11:30-12:00 Proposed workplans and expected contributions from the different actors/participants, and future of the project.
Speaker : C. Hoste
12:00-12:30 Closing
12:30-13:30 *Lunch*

Annex 3 : Distributed papers and documents

I. List of papers distributed and presented at the workshop

- Minister of Rural Development: Strengthening the role of universities in NARS in Sub-Saharan Africa.
- Prof. L. Wilson: The role of universities in NARS.
- Mrs. H. Michelsen: Conceptual framework and field work approach.
- Prof. A.M. Emechebe and Prof. O.A. Osinowo: The National Agricultural Research System in Nigeria: role of the University.
- Dr. J. Detongnon and Prof. C. Adandedjan: Informative document on Benin.
- Prof. L. Wilson: Strengthening the role of universities in the NARS in Sub-Saharan Africa: Lessons from the system in the United Kingdom and the English speaking Caribbean.
- Dr. H. Carsalade: Research and agricultural development in France.
- Prof. F. Heidhues: Agricultural education and research in Germany.
- Mrs. H. Michelsen: Case study guidelines: content outline and guideline for data collection (Draft for discussion).

II. List of other documents distributed at the workshop

- List of participants of the project (E/F).
- Draft agenda (E/F).
- Proposal for responsibilities during the workshop (F).
- Session V : Current role of universities within NARS (E/F).
- Session VI : Potential role of universities within NARS (E/F).
- Session VII : Case study approach and conclusions (copy of used transparencies) (F).
- List of participants of the workshop (E).

III. List of papers and documents distributed before the workshop

- Proposal for special project on "Strengthening the Role of universities in NARS in sub-Saharan Africa" :
  -- Part I : Development and validation of a methodological framework (E/F).
  -- Part II : Implementation and development of guidelines (E/F).
  -- Annex A : Universities and National Agricultural Research Systems in sub-Saharan Africa - a provisional analytical framework (E/F).

- Highlights of the Internal Meeting held on February 8, 1994 at ISNAR (E/F).

Annex 4 : Questions for the working group on research at the University and constraints to universities' participation in national agricultural research

ROLE(S) OF UNIVERSITIES

1. LISTING OF UNIVERSITY ROLES

Do you agree with the 4 generally accepted University roles of
- Undergraduate Education
- Postgraduate Training
- Research
- Outreach and Service?

Can you suggest other roles?

2. DIFFERENTIATION OF UNIVERSITY ROLES

Should the University roles identified be different for different faculties e.g. Agriculture, Engineering, Veterinary Medicine, Natural Sciences, Social Sciences?
Can you assign relative proportions to the University roles in different faculties in your country?
Are these proportions optimal? Can you suggest what should be the optimal distribution?

3. EVALUATION

Can you suggest quantitative criteria for measuring outputs from the different University roles identified?
Can you give examples of these criteria in your University?

STATUS OF UNIVERSITY RESEARCH

A. PLANNING AND EVALUATION

1. What is the planning process for research in your country?
   - University level
   - NARO level
   - National level
2. What University Faculties (or Departments) contribute to agricultural research in your University? Can other Faculties (or Departments) also contribute?
3. What are the comparative advantages for universities versus NAROs for different levels of agricultural research (basic, strategic, applied, adaptive)?
4. Can you specify in your University the research areas?
5. How is University research financed? Does it compete with NARO research for funds?
6. How is the output from University research funding evaluated?

B. UNIVERSITY RESEARCH RESOURCES AND CONSTRAINTS

7. What resources are actually used for research in your University? (human, financial, material)?
8. Can you identify simple criteria for estimating the available resources?
9. Where are the main constraints to increasing the contributions of universities to national agricultural research?

C. OTHER UNIVERSITY CONTRIBUTIONS

10. Should the consideration of University contributions to development in this study be restricted to research or should the other three University contributions identified be also considered?
11. If all the University contributions to development are considered, how could the non-research contributions of teaching, training and outreach be quantified?

Annex 5: Questions for the working group on mechanisms for improving universities' contribution to national agricultural research

A. OPPORTUNITIES AND ADVANTAGES

1. What unexplored opportunities exist in your country for improving the direct research contributions of universities to NARS?
2. How could indirect University contributions to NARS of tertiary education, training and outreach be strengthened?
3. What comparative advantages exist with the universities and NARO's for collaborative mechanisms?

B. MECHANISMS

4. What mecanisms would you suggest to exploit opportunities for improving the direct research contributions of universities to NARS?

C. BENEFITS

5. Which parties will be affected by the collaborative mechanisms (NAROs, Faculties, Professors, Researchers)?
6. What net-benefits do you expect will accrue from the collaborative mechanisms suggested?

D. CONSTRAINTS

7. Where are the major constraints to improved collaboration located?
8. What actions are needed to remove these constraints and by whom?