Agricultural Extension in Africa

Aruna Bagchee
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Agricultural Extension in Africa

Aruna Bagchee

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ISSN: 0259-210X

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Library of Congress Cataloging-in-Publication Data

Bagchee, Aruna, 1946-  
Agricultural extension in Africa / Aruna Bagchee.  
p. cm. — (World Bank discussion paper, ISSN 0259-210X ; 231. Africa Technical Department series)  
Includes bibliographical references (p. ).  
1. Agricultural extension work—Africa, Sub-Saharan—Congresses.  
I. Title. II. Series: World Bank discussion papers ; 231.  
S545.4.A427B34 1994  
630'.715067—dc20  
93-45658  
CIP
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Foreword

Agriculture in Africa continues to be an area of major interest to development planners throughout the world, including those within the World Bank. The prolonged economic crises in many African countries, and the deteriorating situation of food security in most parts of the continent, have drawn attention to the important role of the agricultural sector. Many of the structural adjustment programs focus on how to establish the right policy framework which would encourage sustained agricultural growth, thus enabling a turnaround in the national economies.

In 1989, the World Bank published a report titled *Sub-Saharan Africa: from Crisis to Sustainable Growth - Long-Term Perspective Study* (LTPS). The LTPS analysis concluded that African economies needed to grow by at least 4 to 5 percent a year if hunger was to be averted and productive jobs and rising incomes secured for growing populations. Since the primary source of this development can only be agricultural production, the agricultural growth rate in these countries would also have to be 4 percent per annum.

This is not going to be an easy task. In order to reach the required growth rate in agriculture, the policy environments in each of the sub-sectors need to be carefully examined: from input supplies to marketing to the dissemination of new production technologies to farmers. As far as the extension sub-sector is concerned, some thirty African countries have implemented, or are in the process of implementing, national extension services managed on the principles of Training and Visit. Strengthening these national extension systems, and making them more effective, is going to be an important part of the agenda for increasing agricultural growth in the continent.

In January 1993, the Environmentally Sustainable Development Division of the Technical Department, Africa Region (AFTES) and the Economic Development Institute (EDI) of the World Bank, together organized two workshops, in Accra and Abidjan, on the status of agricultural extension systems in these thirty countries. It was a significant event in that it detailed the current situation as far as this sub-sector is concerned: its strengths, potential, and immediate constraints.

I hope that this report based on discussions at the Accra and Abidjan workshops will contribute to a fuller understanding of the constraints and potential of agricultural development in Sub-Saharan Africa, leading thereby to more effective growth strategies.

Kevin Cleaver
Director
Technical Department
Africa Region
Acknowledgments

Many persons have contributed to the contents of this report which is based on the Accra-Abidjan workshops on Agricultural Extension in Africa. First and foremost, I would like to thank all the participants for the high quality of their discourse. The special efforts of the writers and presenters of the country reports deserve mention, as well. The workshops also benefited a great deal from the valuable contributions of the resource persons: M. Bagourou, M. J. Brossier, Dr. T. Eponou, Mr. B. Haverkort and Dr. B. Swanson. Their germane comments and observations enlightened the proceedings. Although it has not been possible to acknowledge everyone by name, the author wishes to gratefully recognize the contributions of all to the making of this report.

My grateful thanks are due to Messrs. V. Burger (EDI), J. Fremy and V. Venkatesan (AFTES) who took great pains to organize the workshops at Accra and Abidjan, and commented on the structure and the earlier versions of the report. Special mention should be made of the painstaking review of the earlier drafts of the report by Mr. Nicholas Wallis.

I am also deeply grateful to the reviewers, both internal and external, for their suggestions which have considerably enriched the report, and to Ms. Marie-Laure Cossa (AFTES) who patiently prepared the draft for publication.
Bank-assisted agricultural extension projects are being implemented in some thirty countries in Sub-Saharan Africa. Senior officials of the extension and research systems of these countries participated in week-long workshops in Accra (for Anglophone countries) and Abidjan (for Francophone countries) in January 1993. This report summarizes the deliberations at these workshops. The main issues discussed at these workshops are given, along with their policy implications.
Acronyms

ADB  African Development Bank
ADP  Agricultural Development Project
AFTAG Agriculture Division (now part of AFTES), Technical Department, Africa Region, World Bank
AFTES Environmentally Sustainable Development Division, Technical Department, Africa Region, World Bank
ARPT Adaptive Research Planning Team
ARTs Adaptive Research Teams
ASI Agricultural Services Initiative
BAT British American Tobacco
CAR Central African Republic
CGIAR Consultative Group on International Agricultural Research
EDI Economic Development Institute
FAO Food and Agriculture Organization of the United Nations
FSR Farming Systems Research
IFAD International Fund for Agricultural Development
IITA International Institute of Tropical Agriculture
ILCA International Livestock Centre for Africa
ILEIA Information Centre for Low External Input and Sustainable Agriculture
ISNAR International Service for National Agricultural Research
JTA Junior Technical Assistant
KARI Kenya Agricultural Research Institute
KTDA Kenya Tea Development Authority
LTPS Long-Term Perspective Study
MALD Ministry of Agriculture and Livestock Development (Kenya)
M&E Monitoring and Evaluation
MOA Ministry of Agriculture
NARS National Agricultural Research System
NGO Non-Governmental Organization
NRM Natural Resource Management
RELC Research Extension Liaison Committees
SPAAR Special Program for African Agricultural Research
SPATs Small Plot Agricultural Trials
SMS Subject Matter Specialist
SSA Sub-Saharan Africa
T&V Training and Visit System of Extension
UNDP United Nations Development Program
VEW Village Extension Worker
Executive Summary

Since the early 1970s, the World Bank has been supporting the strengthening and reorganization of agricultural extension services in Africa on the lines of the Training and Visit (T&V) principles. Currently, about thirty African countries are at various stages of implementing Bank-supported extension projects. In order to review this experience, two workshops were organized jointly by the Agriculture Division of the Africa Technical Department (AFTAG) and the Economic Development Institute (EDI) of the World Bank. The first brought together representatives from ten Anglophone countries at Accra, Ghana, during January 18-24, 1993. The second brought together representatives of seventeen Francophone countries, in Abidjan, Cote d'Ivoire, between January 25-29, 1993.

The countries were represented by senior managers of the national extension and research services. The World Bank was represented by the Vice-President for Africa Region, Mr. E.V.K. Jaycox, and Mr. Daniel Benor, Advisor on Agriculture to the Vice-President, and other staff from the headquarters and field offices. There were also invited speakers, several resource persons, and a few representatives from NGO’s.

The two week-long deliberations brought to light a number of interesting facets regarding extension systems in Africa. Participants in Accra and Abidjan raised substantially the same issues. The main difference between the two workshops was that natural resource management emerged as a more important issue in Abidjan than it did in Accra. The topic of how to reach extension services to women-farmers was discussed in greater depth in Accra than in Abidjan, where more attention was given to how extension agents can work more closely with various types of farmers’ organizations.

The main issues and concerns voiced in the Accra-Abidjan workshops fall under four main themes. These are: Management of Extension, Technology, Training, and Extension for Special Categories of Farmers.

With regard to the Management of Extension Services, the main concern was the inadequate provision of funding from the governments concerned. In IDA-assisted extension projects, the governments are expected to put up counterpart funds, typically of the order of about 20 percent of the total project cost. However, because of the continuing economic crisis in most African countries, as well as procedural and other delays in releasing even budgeted amounts, field staff face severe problems. Among these is the inability to carry out as many staff training sessions and supervision tours as envisaged. Other issues discussed under this theme concerned modifying the T&V system to suit the socio-cultural-administrative context of the particular country, and the implications of operating a “unified” extension system, delivering extension messages to farmers in many areas of concern to them, such as crops, livestock, agro-forestry and fisheries, the underlying assumption being that extension’s concerns should be congruent to farmers’ concerns.
Under Technology, the participants were concerned about the slow pace at which technologies appropriate to the African context were being made available. Unless the existing research infrastructure is strengthened and there is better research-extension linkage, the extension services would not be able to show much effectiveness in the field. Participants, particularly in Abidjan, also pointed to the need to coordinate the efforts of staff working in the extension services and those working in natural resource management projects.

Periodic staff training is a fundamental feature of the T&V system. The workshops considered several aspects of training: the need to have regular training sessions, to include training in communication skills, and for training sessions to follow a problem-solving methodology.

A fourth major area of concern at the Africa extension workshop was the need for targeting and reaching special groups of farmers. These included women farmers, young farmers, pastoralists and nomads, and farmers' organizations. It was the general consensus that special diagnostic analyses and innovative methodologies need to be devised in order to service these special categories of farmers.

At both workshops, Professor R. Evenson presented the findings of the evaluation of T&V extension in Kenya and Burkina Faso. These show a very high rate of return on the marginal investment involved in strengthening and reorganizing extension services according to the principles of T&V.

A number of significant recommendations were made at the workshops—"workshop" stands for either Accra or Abidjan, and where the report refers to a specific workshop, the prefix Accra or Abidjan (as the case may be) is used. Some of the most important suggestions for the consideration of the World Bank and national governments are:

(i) Strengthen the recently established unified national extension systems (as opposed to crop-specific services);

(ii) Increase attention to research on hitherto neglected areas: the "orphan" foodcrops such as sweet potato, yams, and cassava, intercropping and natural resource management;

(iii) Align research efforts with small-scale integrated production systems by introducing more participative on-farm research, like the multi-disciplinary farmer-oriented approach of farming systems research.

(iv) Improve linkages between extension and other agencies, by giving more emphasis to bringing about attitudinal change or "emotional realignment" in the different hierarchies, than to the creation of new institutional structures.

(v) Work towards establishing unified national extension services, by (a) avoiding, at least in the future, sanctioning separate extension projects
(commodity-specific or "enclave" projects), outside the national extension programs, and, (b) at least, not sanctioning extension projects with a conflicting approach (e.g. which bring subsidies, doorstep delivery of inputs or linked credit).

(vi) Improve extension services to female farmers.

(vii) Include, in extension messages, advice regarding the management of soil and water conservation at farm level. At the same time, the program managers of natural resource management (NRM) and T&V should explore the possibilities of working together, or harmonizing their perspectives.

(viii) The World Bank should facilitate the establishment of an African regional or international centre for the regular exchange of experiences and innovative ideas in extension, and to function as a centre of excellence for training, documentation and evaluation of extension methodologies. In the meantime, a newsletter could be started, to exchange ideas and experiences.

(xi) A Pan-African conference on extension issues should be organized in two or three years, which would facilitate exchanges of experience at the continental level.
1. Introduction

Small-scale extension initiatives in Africa have been supported by the World Bank since about 1970 when it started financing integrated rural development projects. Following the shift in its emphasis from integrated rural development projects to the development of national institutions in the early 1980s, the Bank began to support reorganization of national agricultural extension systems in Africa, under the guidance of Mr. Daniel Benor. These reforms started in 1981 in Kenya with a pilot project based on the Training & Visit (T&V) system of extension, which was followed by a regular project in 1983. Since then, Bank-supported extension projects have been started in about thirty countries (see map at end of publication).

In parallel to the support being provided for the national extension programs, the Bank has also assisted agricultural research projects in some twenty countries in Africa. The Bank's decision to go beyond extension and research and pay attention to management improvements in other agricultural services, such as seeds, credit, marketing etc. led to the Bank's Agricultural Services Initiative (ASI) in Africa starting in 1987. But the Bank's involvement with strengthening management capacities in these additional areas is still in its early stages.

Recognizing the need to provide implementation assistance to the countries which wish to undertake the reorganization of extension services through Bank-financed projects, the Bank has appointed extension specialists in the Regional Missions in Abidjan and Nairobi, and agricultural services/extension staff in the resident missions in eighteen countries—Benin, Burkina Faso, Cameroon, Central African Republic (CAR), Chad, Cote d'Ivoire, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Niger, Nigeria, Senegal, Tanzania, Zambia and Zimbabwe.

Extension workshops, organized by the Bank for the implementers of extension reforms in Sub-Saharan African (SSA) countries, have been previously held at Ibadan, Nigeria (January 1989), Bouake, Cote D'Ivoire (October 1990) and Kisumu, Kenya (December 1990). These workshops, particularly the latter two, focused on specific topics such as training and research-extension linkages. They provided very useful fora for the participants to exchange their experiences regarding the implementation of extension reforms.

These events were followed by a workshop exclusively for Bank staff, held in Lilongwe, Malawi, in February 1991. The Lilongwe workshop was planned as a preparation for workshops proposed to be held two or three years later, bringing together representatives of the countries implementing extension programs. The proceedings of the Lilongwe workshop have since been published by the Technical Department of the Africa Region.
There have been some other developments, too, since the first workshops were held. First, the number of countries with extension programs supported by the International Development Association (IDA) has increased. The results of the evaluation study of the impact of extension programs in Kenya and Burkina Faso, undertaken under the guidance of Professor R. Evenson of Yale University, are now available. These show an excellent impact of extension on production, and also contain valuable operational lessons. Third, as countries move into the second phase of national extension programs, many new challenges will have to be faced. Management of the environment and support services for women farmers will need greater focus. These will increase the responsibilities and complexities of extension as it becomes increasingly interdisciplinary.

It was, therefore, felt that the time had come for senior-level extension and research managers in African countries to get together and discuss the key extension issues, present and future. Accordingly, the World Bank's Economic Development Institute (EDI) and the Agricultural Division of the Africa Region's Technical Department (AFTAG) jointly organized the Africa Agricultural Extension Workshops in January 1993. These were held in Accra, Ghana from January 18-23, 1993, and Abidjan, Cote d'Ivoire from January 25-29, 1993.

Objectives

The main theme of the workshops was Improving the effectiveness of agricultural extension in Sub-Saharan Africa.

The objectives of the workshops were to:

(i) Identify and prioritize operational issues relating to extension and research programs with a view to increasing the effectiveness of extension operations in the field.

(ii) Discuss key management and financing issues relating to extension.

(iii) Identify and discuss second generation extension issues, particularly those relating to the organization of support services and innovative proposals for financing extension services; and

(iv) Identify issues which need to be placed for deliberation before the Pan-African Conference of Policy-makers planned for 1994.

Participants

The participants at the workshops were senior extension and research staff members from African countries. The Accra workshop was attended by twenty-seven staff from ten Anglophone countries; and the Abidjan workshop by forty-one from sixteen Francophone countries. A number of Bank staff, from headquarters as well as from the field also participated in the workshop. International organizations like the
International Service for National Agricultural Research (ISNAR) and the Special Program for African Agricultural Research (SPAAR) sent their representatives. The workshops also had the benefit of the participation of resource persons. They functioned as discussants in the plenary sessions, participated in the working group discussions, and brought an "outsider's" perspective to the proceedings. The list of all the participants is given in Annex 4.

Format of the Workshops

The main feature of the workshop was the presentation by the country participants of their experience with the reorganization of the extension and research systems in their respective countries. The countries were grouped (two, three or four per session) and each presented to the plenary its current arrangements for providing agricultural extension services, highlighting the major achievements as well as constraints. At the end of each session, the resource persons provided their comments, flagging the significant issues raised in the presentations and in the discussions that followed.

After the country presentations, each plenary session was divided into four working groups for a more focused discussion of specific issues. The rapporteurs from the working groups then presented the groups' conclusions and recommendations to the plenary, which modified or accepted them, after further discussion.

In both the workshops, presentations were made by invited speakers on specific topics. Mr. E. V. K. Jaycox, Vice-President of the Africa Region, World Bank addressed both gatherings. Professor R. Evenson (Yale University), presented the findings of evaluation studies on the impact of T&V extension in Kenya and Burkina Faso. Mr. B. Haverkort, from the Information Centre for Low External Input and Sustainable Agriculture (ILEIA), spoke on the "Farmers' Role in Research and Extension" at Accra. Mr. K. Cleaver, Director, Africa Technical Department, World Bank, presented, in Abidjan, the World Bank's strategy for agricultural development in Africa.

About This Report

The discussions in Accra and Abidjan brought to light a wealth of ideas and experiences. While it is difficult to capture in a report the richness of the experience and the openness and enthusiasm of the debate, it is necessary to record the outcome of the discussions in order to guide future policy and action. Therefore this report only summarizes the highlights drawn from the discussions in the workshops. Two other observations regarding this report should be made.

First, it should be clarified that the report restricts itself to the discussions in the Accra-Abidjan workshops. There have been several other publications and seminar proceedings, some of them of the World Bank, in which agricultural extension has been discussed from different perspectives, and different systems of extension, including T&V, have been compared as to their strengths and weaknesses. However, this report, as
mentioned previously, is confined to the discussions which took place at the workshops, which were within the framework of the T&V system. Whether the answers to many issues raised at the workshops lie within the system with appropriate modification, or whether they should be sought outside the T&V system, is something which is not discussed in the report as it was not discussed at the workshops.

Second, the structure of this combined report on the two workshops, should be explained. As already mentioned, Anglophone countries participated in the Accra workshop, and Francophone countries in the Abidjan one. Within both the Anglophone and Francophone groups, there were some common experiences, and some that were unique to a particular country or group of countries. Taking the two workshops together, again one sees certain points of similarity and some contrasts in the points they raised, or the emphasis they gave to certain issues. It was therefore decided to prepare a combined report on the proceedings of the two workshops, without losing sight of the particular contexts of the two discussions for the Anglophone and Francophone regions of Africa. In order to convey the outcome of the two workshops together, while keeping in mind the separate context of the discussions in each, and with a view to avoid, as far as possible, any repetition of material, this report has been prepared in the following manner.

First, chapter 2, reviews the role that extension could play in the agricultural and economic development of Africa. This is based on the talks given at both workshops by Messrs. Jaycox and Cleaver and Professor Evenson.

Then, chapter 3 distils and summarizes the major concerns voiced in Accra and Abidjan. This is based largely on the country reports and the discussions that followed in the plenary, as well as in the working groups. Only the key issues that were frequently raised throughout the two, week-long deliberations have been highlighted here.

The key implications for policy development based on the workshop recommendations are outlined in chapter 4.

Finally, chapter 5 highlights the points of convergence and divergence between the discussions at Accra and Abidjan. Attention is also drawn as to how the issues raised at this workshop differed from those flagged in the February 1991 workshop in Lilongwe; and some suggestions are given on where the debate might go from here.

Two brief accounts of the deliberations at Accra and at Abidjan are separately given, in Annexes 1 and 2—these sections include the specific conclusions and recommendations made at the two workshops. Annex 3 presents the basic data on extension projects currently under implementation in Africa and Annex 4 provides the list of participants in the workshops.
2. The Role of Extension in African Agriculture

There were three invited speakers at the Africa Extension Workshop, each of whom emphasized the significant role of extension in African agriculture. Mr. E.V.K. Jaycox, Vice President, Africa Region, World Bank, addressed the participants both in Accra and in Abidjan. He spoke of the priority that the Bank gives to Africa's development and of the importance of agriculture to the recovery of these economies. Mr. Kevin Cleaver, Director, Africa Technical Department, presented in Abidjan a Strategy for the Development of Agriculture in Sub-Saharan Africa. Professor R. Evenson, Mr. V. Bindlish and Mr. M. Gbetiboou explained the results of two evaluation studies in Kenya and Burkina Faso on the impact of T&V extension in these countries. These addresses combined to highlight the importance of agriculture in any strategy for economic recovery in Africa and the significant role that agricultural extension could play in such a strategy.

Mr. Jaycox stressed that Africa remained a top priority for the World Bank in spite of new demands and commitments in other parts of the world. This priority is reflected in the consistently high level of World Bank assistance to Africa and the presence of Resident Missions in many of these countries. Within this overall priority for Africa, agriculture is accorded priority for social and economic reasons, such as the percentage of Gross Domestic Product (GDP) from agriculture; its contribution to exports; employment; the role of agriculture and farmers in natural resource management, and so on. He pointed out that, without overlooking the importance of other sectors of the economy, the annual agricultural growth rate needs to double from 2 percent to 4 percent, if hunger is to be averted and the increasing population provided with productive jobs and rising incomes. "This is a challenge that we must take on, since we know that it is necessary."

He further mentioned that in order to reach this objective, the Bank is counting on agricultural research and extension to play a key role. African agriculture constantly needs new technology. The priority given to agricultural research by the Bank is borne out by the Special Program for African Agricultural Research (SPAAR) initiative. Mr. Jaycox also confirmed that World Bank involvement in agricultural extension was a long term commitment. He hoped that national governments would also show a similar commitment to agricultural research and extension through enhanced allocations of financial resources.

Strategy for Agricultural Development

The importance of agriculture to the African economies was further developed in the paper presented by Mr. Kevin Cleaver in Abidjan. He mentioned that agriculture remains the principal occupation of the majority of people in Africa. It constitutes the largest productive sector in Africa and produces an average 32 percent of GDP.
World Bank's report entitled *Sub-Saharan Africa: from Crisis to Sustainable Growth - Long-Term Perspective Study* (LTPS, 1989), concluded that Africa's economies needed to grow by at least 4 to 5 percent a year to meet the employment and income needs of their growing populations. Since the primary source of this growth can only be agricultural production, the agricultural growth rate in these countries would also have to be 4 percent per annum. Without such an agricultural growth rate, the industrial sector will not be supplied with adequate raw material for it to reach its targeted 5 to 7 percent rate of growth. Agriculture is the major source of raw material for industry, as well as a significant purchaser of the countries' manufactures and services, since farmers constitute the majority of the population and of the employed. An analysis of farm/non-farm linkages in Sub-Saharan Africa indicates that a 1 percent growth in agriculture results in economic growth of 1.5 percent due to the stimulus provided by agriculture to industry, transport, and services.

Unfortunately, the average rate of agricultural growth in Africa has remained at only about 1.7 to 1.9 percent per annum in real terms since 1965. By contrast, population growth has increased, from about 2.7 percent per annum during the period 1965-1980, to about 3.1 percent per annum since 1980. This decline in per capita agricultural output is mirrored in a decline in per capita food production, accompanied by a rapid rate of increase in food imports and food aid. The stagnation in agriculture has led to a worsening incidence of poverty and food availability in the rural areas. The current production systems are unable, on the one hand, to absorb the incremental labor, and, on the other, to prevent the progressive destruction of the underlying resource base.

The objectives of agricultural development in Africa have, therefore, been identified as:

* Poverty alleviation and food security;
* Employment creation; and
* Sustainable management of natural resources.

In reaching for this targeted growth rate of 4 percent per annum, African agriculture has some serious constraints to overcome. These are:

* Low world prices for most agricultural and agro-industrial products from Africa;
* Low level of development of irrigation (barely 4 percent of the cultivated area);
* Low level of development of infrastructure (rural roads, input delivery systems, etc.); and
* Lack of appropriate technologies for the sustainable intensification of agriculture in Africa.

But there are some favorable factors as well, and these can be exploited to Africa's advantage. At present, Africa has a low input and largely unsubsidized agriculture. It lags behind other continents in crop yields because of very low levels of fertilizer use and irrigation. There is, therefore, a large potential for increased
intensification of output. Further, the projected declines in real wages in much of Africa will help its competitive position in agriculture.

The strategy outlined by Mr. Cleaver, to achieve the targeted growth rate, has five main elements:

(i) Policies to favor investment in agriculture, agricultural marketing, processing and credit.
(ii) New technologies, including low-cost partial modifications to current production systems.
(iii) Organization and empowerment of farmers.
(iv) Increased investment in infrastructure: roads, water supply, education and health in rural areas.
(v) Better management of natural resources.

In carrying out the above strategy, agricultural extension has an important role to play. It will be crucially involved in spreading improved technologies to farmers, and in advising them on how to better manage their natural resource base. While extension for the profitable commercial crop and livestock enterprises can, in due course, be provided by private sector agri-business, public sector extension will continue to be important for a long time for food crops and for poor farmers. Public sector extension must increase its efforts towards serving women farmers, addressing environmental issues, in providing a choice of technologies, and in establishing formal links between research and farmers’ groups. In this way, Mr. Cleaver concludes, extension services can also fulfil another important function, namely, that of bringing farmers’ problems to the notice of research services.

Extension services, reformed on the management principles of Training and Visit (T&V)\(^\text{10}\) are already in place in approximately thirty countries in Africa. One important facet of the multi-element strategy outlined earlier can thus be said to be already in place, and should, in turn, put pressures on other services (particularly research and input delivery systems) to become more efficient. Whether such an expectation from T&V is realistic can now be gauged from the evaluation of T&V extension systems in Kenya and Burkina Faso. The results of these evaluation studies, presented at the Accra and Abidjan workshops by Professor Evenson, and Messrs. Bindlish and Gbetibou, suggest that such an expectation would be justified.

**Economic Evaluation of T&V Extension**

The results of the evaluations show that T&V has worked well in Kenya and Burkina Faso. It works both in terms of producing a high return on investments, and in terms of benefiting a large number of people. For both Kenya and Burkina Faso, the evaluations were based on data from random sample surveys of farmers representative of the entire farming population. For Kenya, the sample consisted of 676 farmers, while for Burkina Faso it was much larger and consisted of 3,600 farmers.
The fact that the data for both Kenya and Burkina Faso met the two essential requirements of randomness and representativeness needs to be stressed. This permits generalization on the basis of the results derived from these data. In Kenya, the implementation of the sample surveys was entrusted to the Central Bureau of Statistics, and in Burkina Faso to the National Directorate for Studies and Planning. The extension service, or the Ministry of Agriculture, was not involved in the data collection process in either country. It is important to stress this because it precludes the possibility of enumeration bias.

The evaluation study was also able to compute the returns to the pre-T&V extension system in Kenya, as it had access to the Kenya Rural Household Budget Survey of 1981/82, the year preceding the introduction of T&V in Kenya. In fact, for the evaluation, what the study team did was to resurvey farmers drawn randomly from the 1981/82 survey list. That survey was itself based on a random sample. Thus, Professor Evenson's team of researchers was able to construct data for the same farm households for two periods, 1982 and 1990.

The range computed for the rate-of-return for Kenya with respect to the present T&V extension system had a mean of 350 percent. The lower limit for this rate of return had a high probability of being at least 160 percent. The corresponding rates of return computed for the previous extension system in Kenya were 52 percent and 28 percent, respectively. For Burkina Faso, the computed rates of return for the present T&V-based system ranged from 86 percent to 187 percent.

These estimates are of the marginal rates of return. That is, they refer to the payoff to investing in expanding the supply of extension. One can conclude with confidence from these estimates that the rate of return on investments in expanding the present T&V system in Kenya and Burkina Faso is likely to be high. The specification of the underlying econometric models for T&V extension was relatively complete, and controlled for weather conditions, the capital stock, purchased current inputs, and family and hired labor. It also took account of geo-climatic factors, and of farmer and community characteristics. Moreover, the computed coefficients were stable with respect to alternative estimation techniques.

The econometric models estimated for the 1981/82 pre-T&V system for Kenya cannot be compared strictly with those estimated for the 1990 T&V system, because data were not available from the 1981/82 Rural Household Budget Survey for the same inputs. Nevertheless, the large difference between the rates of return computed from these models, combined with the results of the other analyses carried out for the evaluations suggest that the introduction of T&V increased the impact of extension in Kenya. These other analyses indicate appreciable increases in advice, awareness and adoption after the introduction of T&V for both Kenya and Burkina Faso.

In the case of Kenya, they show that 66 percent of the sample farmers deriving their main income from agriculture had received advice from extension since the introduction of T&V. Eighty-eight percent of these recipients of extension advice
indicated that they received such advice for the first time after the introduction of T&V.

Box 2.1: Evaluation of T&V Extension in Kenya

The study of the same name examines the impact of T&V extension on the basis of data from a random sample of Kenyan farmers. It shows that this impact has been positive. Sixty-six percent of the sample farmers, deriving their main income from agriculture, reported receiving extension advice since the introduction of T&V. The majority of these recipients rated this advice as being applicable, and indicated that they had never been advised by extension before T&V was introduced. The proportions of small-, medium- and large-scale farmers, and of farmers from male- and female-headed households, who received extension advice were also the same. For the Kenyan data, the range estimated by the study for the rate of return on the additional investments in expanding the present T&V-based extension system has a mid-point of 350 percent, and a lower limit that has a high probability of being at least 160 percent.

For Burkina Faso, possibly reflecting the shorter period that the T&V system has operated there, 31 percent of the sample farmers reported being advised by T&V extension agents. Almost all farmers receiving extension advice in both Kenya and Burkina Faso rated it as being useful. Extension services seem to be reaching male-headed and female-headed households in more or less equal proportion, as 50 percent of the male-headed households and 45 percent of all female-headed households from the Kenyan sample were receiving advice. Also, the small-scale farmers in the sample received advice to the same extent as larger farmers. For Burkina Faso, the results showed that farmers who were T&V contact group members had 25 to 30 percent higher crop yields than other farmers.

Box 2.2: Evaluation of T&V Extension in Burkina Faso

Based on a random sample of some 3,600 farmers drawn from all 12 regions, the evaluation shows that the introduction of T&V has increased the adoption of improved practices. It shows that while all farmers have benefited, those belonging to T&V contact groups have benefited more, reaping crop yields 25 to 30 percent higher than the others. Thus, insofar as only 21 percent of the sample farmers reported being T&V contact group members, the evaluation suggests that expanding the membership of these groups can have a favorable payoff. The rates of return estimated for investments in the expansion of the present T&V extension system range from 86 percent to 187 percent. The evaluation also shows that the average annual expenditure on extension per farm family declined by almost 30 percent after the adoption of T&V as the national system, compared to the period preceding its introduction in Burkina Faso.

While the adoption rates were low for practices requiring purchased inputs, more than 70 percent of the Kenyan sample farmers had adopted the extension messages relating to spacing, time-of-planting and improved cultivars, i.e. improved basic agronomic practices. Notably, in the Sahelian zone of Burkina Faso, which is highly susceptible to environmental degradation, more than 80 percent of the farmers
interviewed reported that they used organic fertilizer. More than 50 percent reported the adoption of complex anti-erosion methods.

A reason for the high computed rates of return relates to the relatively low cost of T&V-based extension, combined with the substantial benefits estimated to flow from it. For the Kenyan sample, the total extension expenditure per farm family (in 1991 constant terms) averaged under $5 to a year during 1983-91, and showed only a 20 percent increase from the pre-T&V period. In Burkina Faso, this expenditure actually declined by 30 percent to $7 per farm family per year, after the adoption of T&V as the national extension system.

The very positive conclusion reached by Professor Evenson in respect of the T&V approach is significant because of the careful statistical analysis done in the evaluation studies. He says:

"It appears that, in African conditions, there may well be substantial scope for achieving an extension impact even when little truly new technology is available to extend. There are three reasons for this. First, the levels of farmer schooling and experience with adopting and testing technologies are low. Second, past extension programs have not effectively mined the existing technical potential, often because of poor management. Third, the T&V system has probably brought new discipline to the management of extension programs in Africa, which has made it possible for this potential to be realized."

Box 2.3: Estimated Growth Contribution of Extension Services

The evaluation of the Burkina Faso T&V service shows that it is reasonable to expect extension to contribute as much as 2 percent a year, for about ten years, to the agricultural production growth rate. Such a contribution could provide African countries with the 'breathing room' necessary to develop new technologies and achieve the kind of growth potential that has been attained in parts of Asia. It must be emphasized, however, that this contribution can be realized only with well-disciplined, well-managed and competent extension programs. Previous extension programs have not been able to 'mine' this source of growth. T&V programs appear to have been able to do so.

It would seem, then, in the light of these two Evaluation Reports, that the T&V extension system has the potential to contribute significantly to the agricultural growth rate targeted in the Long-Term Perspective Study (LTPS) earlier referred to. For it to do so, the extension services must be managed in a professional way, and the discussions in Accra and Abidjan focused on how to improve the efficiency of the T&V projects in these countries. The following chapter discusses the main concerns in this regard voiced at the two workshops by the senior implementers of the T&V projects in these countries.
Extension Service works with many women’s groups in Africa.

Farmers have adopted many recommendations regarding inter-cropping.
3. **Main Issues and Concerns**

Many important issues concerning agricultural extension were raised at the workshops. Different issues were emphasized in the meetings in Accra and Abidjan. But taking the discussions as a whole, they brought out the major concerns facing agricultural extension services in Africa today. These can be grouped under 4 main themes:

(i) Management Issues  
(ii) Technology Issues  
(iii) Training Aspects  
(iv) Extension for Special Categories of Farmers

The main concerns expressed under these four themes are summarized in the following section.

**Management Issues**

The management of national extension services is a major concern in all the countries implementing extension programs based on the T&V system. Successful management requires making the services sustainable in funding and organizational patterns, cost-effective, and efficient in the delivery of meaningful advice to the farmers so as to increase their incomes. In the light of these objectives, the main questions discussed at Accra and Abidjan regarding management of extension services, were:

(i) How can government funding and commitment be ensured?  
(ii) What is meant by 'modified T&V' extension systems? and  
(iii) In what sense should extension be unified?

**How Can Funding and Commitment Be Ensured?**

One of the major concerns facing agricultural extension systems in Africa today is the problem of funds. All the T&V projects were started under IDA credits. Typically, Bank assistance covers the entire capital costs, including the cost of incremental staff appointed under the project. The countries are required to put up counterpart funds covering the operational or recurrent costs of the project. The proportion of government funding required varies from 20 percent to 40 percent of total project costs. Despite the initial agreements in this regard, most countries have been unable to assign the counterpart funds required, and many do not release the budgeted funds in time to the field levels, thus seriously affecting the mobility and motivation of field extension agents. For example, it was reported from Tanzania that, due to lack of funds and ineffective logistical support (especially transport), there were fewer than expected monthly workshops, and inadequate supervision of field activities. The Gambia
staff mentioned the attrition of extension workers, as many left to work for non-
governmental organizations who offer better working conditions.

The reasons reported for these financial constraints are varied. In some
countries there is a genuine financial crisis. In others, there did not appear to be
adequate political commitment, so that, after the initial enthusiasm, funds committed for
extension were not forthcoming.

The participants observed that, when budgets for agriculture are curtailed,
spending for extension is cut, even though other subsidies are continued. Clearly, a
commitment to extension at the political level is the most crucial requirement. If the
policy-level leadership is convinced about the benefits of extension, government can
always prioritize expenditures so to allocate adequate funds to this important activity.
Quite often what is needed is for top extension managers to communicate the field results
of T&V [whether emanating from Monitoring and Evaluation (M&E) reports or gathered
from field visits] to the political leadership, and convince it of the necessity to allocate
funds for extension.

Box 3.1: Extension Helps Improve Nutrition in Togo

In Togo, extension has succeeded in increasing the production of short-duration (90-100
days) maize in the Savanna region. In this region, the cultivation of maize previously ranked fourth
among the cereals. After three years of sustained efforts by extension, maize has overtaken other
cereals, because of its high productivity. The area has almost doubled, with yields higher than the
locally-grown varieties of sorghum, i.e. 1200-2000 kilograms per hectare, as against 500-700
kilograms per hectare for sorghum.

As a result the nutritional status of the region has improved, reducing its chronic deficit
of cereals.

In the other regions such as the Coastal region and the Plateaux, collaboration between
extension and services led to the introduction of higher yielding maize varieties.

Similarly, to solve the planting material crisis facing approximately a million yam
growers in the country, extension disseminated a new technique evolved by the International Institute
of Tropical Agriculture (IITA), Ibadan, Nigeria. Extension agents trained yam cultivators in the
technique of paring "minifragments" (minisetts), and this practice is now catching on. This technique
consists of producing yam tubers from about 25 gram pre-germinated minifragments. If the practice
is adopted in all the yam-producing zones in the country, it would allow Togo to save, for
consumption, at least 50 percent of the quantity of yam currently utilized each year as planting
material. This will go a long way in improving nutritional levels in the rural areas.

From the Bank’s side, assurances were given of long-term support. However,
although suggestions were made by the country participants, that the Bank’s share of
funding recurrent costs be increased, this was not favored by Bank representatives, on
the ground that the country concerned should have a substantial stake in the program.
This change in the funding pattern (making the Bank pay a higher proportion) would also go against the desire, universally expressed, of making extension more "local-bred."

Participants from several countries, particularly the Francophone ones, pointed out that the extension system often suffered because of the strain on the general economy of the country. This was caused by factors beyond their government’s control such as declining commodity prices on the international markets and the related adverse movement of exchange rates. They therefore suggested that these considerations should be kept in mind when concluding extension project agreements. It was suggested by the country representatives that, as far as extension projects are concerned, the Bank should consider funding a higher proportion of the recurrent costs of the project; the rate of exchange at the start of the project should be taken as fixed for the entire period of the project, (so that changes in the currency rates do not increase the cost burden of the concerned countries); and, there should be greater flexibility in conditionalities, avoiding freezing or suspension of disbursements in mid-stream.

One of the greatest worries expressed was post-project or post-donor funding — whether or not the recurrent costs of these extension services would be sustainable by the country’s own budget after World Bank funding was concluded at the end of the project period. Ghana and Nigeria mentioned these worries and Nigeria was exploring whether private sources or a tie-up with several donor agencies could be put in place as an alternative. Some countries such as Benin, Cote d’Ivoire, Zambia, among others, already have co-financing arrangements (i.e. funding from several donor agencies) for their extension programs. However, even in such cases, the problem of post-project funding after donor withdrawal would remain. The only solution is sustained budgetary support from the national government. Workshop participants felt that this support would be forthcoming when the positive effects of extension in the field become more visible. Extension managers need to make policy makers responsible for financial allocations aware of these positive effects.

An important policy issue arises in the light of these financial constraints. Perhaps the paucity of funds should be kept in mind while moving from the pilot project stage to "national" projects. There is a need to first consolidate extension services in a pilot district or a particular region, thus giving it a real chance to be professionalized and to show some impact by way of increased production. Instead, in several countries, there appears to have been too rapid an expansion of the program to all regions and districts, within a very short period of a year or two, thus causing strains on training and logistics, as well as funds. This rapid coverage of area had sometimes led to a feeling that reformed agricultural extension services are "unsustainable." This quick expansion approach therefore, merits some caution.

What is Meant by "Modified" T&V Extension Systems?

In his inaugural address at Accra, the Ghanaian Minister for Agriculture dwelt on the need to indigenize the T&V extension projects. He mentioned that collaboration should be achieved between foreign and local experts, greater attention paid to the sociological environment, and the extension agents be integrated into the farming
communities they serve. These themes were picked up repeatedly throughout the two workshops. Many of the country papers reported that T&V had been 'modified' to suit the special circumstances and requirements of their countries. Different interpretations were given of this process, which was referred to variously as 'modification', 'indigenization', or harmonization of T&V with the country’s culture and organizational patterns.

From the general debate on this theme, one can discern three main issues:

(i) A divergence from the general standards of T&V;
(ii) Harmonizing T&V with alternative approaches; and
(iii) Indigenization of personnel and programs.

At one level, 'modified' T&V simply refers to alterations in the guidelines which were first set out in the Bank publication titled Training and Visit Extension. These norms could be related to either the organizational pattern, such as the ratio of Village extension workers (VEWs) to farm families, or to the management, principles of T&V, e.g. the frequency of training sessions.

In the case of several countries, it was reported that because of the modalities of existing programs and the historical evolution of their administrations, T&V had been adjusted to fit into the given organizational patterns. Thus, for example, in Nigeria, it was fitted into the on-going Agricultural Development Projects (ADPs). Many countries also stated that for one reason or another, mostly owing to cost considerations, instead of one VEW for every 800 farm families, they were compelled to have one VEW for 1200 or more families. Other changes in the organizational pattern include departures from the norm that field workers give exclusive attention to only extension work.

As far as the management principles of T&V are concerned, one norm that is widely reported to have been modified is the frequency of training schedules. Several countries reported that training schedule norms had been revised. Either due to the shortage of funds or problems of logistics (Tanzania), or the lack of new technology (Kenya), or the size of the country and lack of available competence (Zaire), the frequency of training could not be maintained at once a month at subject matter specialists (SMS) level and once a fortnight for the VEWs. The frequency had been reduced generally to once in two or three months for the SMSs and once a month for the VEWs. In the case of Zaire, it was simply "according to need."

The second aspect of 'modification' related to the adoption of different strategies of extension, along with the T&V strategy. The T&V strategy is primarily based on communication of technical information between the field extension worker and the contact farmer. But in some countries, e.g. Nigeria, Senegal, Kenya, Cote d'Ivoire, and so on, together with this approach, there is an increased use of mass media information systems. Similarly, almost all African countries have relied on farmers’ groups, rather than individual contact farmers for the dissemination of extension messages. And some, like The Gambia, have made use of "kafoo" (or communal) farms, rather than individual farm-plots, to demonstrate new technologies. Mention was
also made that instead of relying only on the contact farmers to spread the messages, village level motivators had been used to obtain a better multiplier effect. All these are seen as attempts to harmonize T&V with alternate methods of diffusion of messages, based on local culture.

Box 3.2: The Gambia Uses a Mix of Diffusion Methods

Demonstrations on farmers' fields have been the major extension strategy. These are mainly undertaken on the privately-owned fields of farmers selected by the community. But "Kafoo" (or communal) farms have also been used for such demonstrations, and they reach more farmers in the community than the ones on privately-owned farms.

Extension also conducts on-farm testing in farmers' fields through demonstration-cum-trial plots. These farmers are also selected by the community, but they are not necessarily the same as those mentioned previously. The on-farm testing plots are a field collaboration effort with the Department of Research; their objective is to test, on farmers' fields, under farmers' management, the behavior of some of the variables (called impact points or production practices in extension terminology).

Radio broadcasts and village film shows also have been a regular feature of the extension service since 1976, although these were used even before this date. The radio programs are compiled by agriculture extension agents who have had additional training in radio program production, and are narrated mostly by Radio Gambia staff. A large part of the content is interviews with farmers. The films are locally made by agricultural extension staff who have had additional training in film and video film-making.

Field trips to demonstrations or research stations have also been a feature, although they were not exploited as fully as their potential might justify.

An assessment of the effectiveness of all these strategies revealed that the first meaningful source of agricultural information is the extension agent. The majority of the farmers then cite radio programs as the next most important source of information. Farmers also rely on each other in exchanging meaningful agricultural information.

The third aspect concerns 'indigenization' of personnel. It was mentioned that prior to T&V, donor-assisted agricultural projects generally had expatriates posted on a long-term basis to assist the implementing countries. In contrast, in the T&V projects, implementation is almost exclusively done by national staff. Furthermore, even within the country, there are attempts to ensure that extension staff feel themselves to be a part of the community they have to work with. It was reported from Ethiopia that grass root workers were being recruited locally from the regions so that extension could be carried out in the context of the local language and culture. Concern was expressed by some participants that while extension workers need to be given vehicles suitable to cover the area and terrain where they are deployed, they should not be given privileges and facilities that make them appear very high in status compared to the farmers. The extension worker should be one with the farmers whom he or she serves.
The term 'modified extension' system thus has several meanings, depending on the different contexts. Going by the discussions, it seems that the participants had different views about whether or not 'modifying' extension was a good thing. Some observers were against such modifications. Mr. Bagouro, who was a resource person for the Abidjan workshop, remarked that the harmonized approaches used in Togo and Benin tend to neglect certain basic principles of the T&V system, such as dependence on contact farmers and demonstration plots, and that he did not favor any departure from the strict organization and management of extension programs as envisaged in the T&V system.

On the other hand, most participants felt that some modifications were inevitable. Perhaps one can make a distinction and say that organizational variations are valid, as long as the management principles are strictly adhered to. Thus, Mr. Benor observed that in the exceptional circumstances of Zaire, a modification in the training schedule may be valid, but that it could not be a general principle. "These regular training sessions are said to be costly to hold, but it is even more expensive not to hold them, because extension needs closer links with research and with the field. Therefore, the more training the better." On the other hand, he did not mind the other organizational modifications. He pointed out that T&V is first and foremost a system for extension management. There are certain basic principles attached to this management (e.g. training and regular visits), but, thereafter, it is up to the country, or even the region to establish specific programs and proposals in keeping with particular country or regional conditions.

Some key conclusions from the discussions were:

(i) Organizational patterns will increasingly vary, as T&V takes root in different countries; and some of these departures from the original pattern of T&V are good, e.g. working with groups of contact farmers rather than individual contact farmers.

(ii) At the same time, divergence, particularly from the management norms, must be strictly curtailed, because it leads to dilution of effort, e.g. lowering the impact of training by having fewer training sessions.

(iii) There is a general consensus that such "harmonization" or indigenization of personnel is essential to achieve the best integration of the field extension workers in the farming communities they serve.

(iv) "Unified" extension will put more demands on the frontline extension staff who cannot obviously manage non-extension (e.g. credit, subsidy administration) functions in addition to extension (with its regular training and visit schedule).
In What Sense Should Extension Be Unified?

One of the main reasons for creating a national extension service using a T&V management system was the need to put in place a unified system of extension. Prior to this reform, there were several separate extension initiatives: through commodity-specific parastatals (providing commodity — specific extension), NGO’s, and government departments. Among the government departments also, increasing specialization meant that parallel field level (frontline) staff were being created by the respective departments for crop husbandry, livestock, fishery, horticulture, soil conservation etc.

One aspect of creating a unified extension system, therefore, is combining or integrating the extension services offered by commodity promotion boards, donors, NGO’s and government. In some countries, the process of donor coordination has not yet begun; other countries are at different stages of the process. For example, in Cote d’Ivoire, it is planned that in the agricultural services project, the CIDT, Sodepra, CIDV and SATMACI extension services will merge into a national extension agency. Similarly, in Benin and Ghana, all the donor agencies will support the national agricultural extension system, instead of setting up separate project-supported systems. On the other hand, in Malawi, only the extension services for smallholders (excluding the tobacco estates), are part of the national extension program. Similarly, in Kenya, separate agencies, such as the Kenya Tea Development Authority (KTDA), British American Tobacco (BAT), and the breweries, will continue to provide extension services, for their respective crops.

The other aspect is 'unifying' the extension services of the different government departments for soil conservation, crop husbandry, tree-crops, livestock, etc. What is envisaged here is that there will be only one cadre of frontline staff advising the farmers; they will be backstopped by subject matter specialists from different technical departments, such as crop husbandry, animal husbandry, forestry, and so on. Here, difficulties have been encountered in achieving smooth integration, and there is great variation in the organizational patterns of such integration. Uganda has put in place integrated extension for crops, livestock production and on-farm fisheries (not yet tree crops). Cote d’Ivoire has brought together foodcrops, livestock production and the major export crops (cotton, cocoa, coffee). In some cases, the concerned departments (e.g. agriculture and animal husbandry) have been merged, but in most, only the field-level extension services have been integrated, while the departments remain separate. Ghana takes subject matter specialists from the different Directorates, even though the departments remain separate. However, by and large, most African countries today have unified extension services as far as the crop husbandry and livestock disciplines are concerned, and many are trying to include soil conservation, agro-forestry and fisheries too.

The advantages in such unification are obvious. On the one hand, staff costs can be reduced by having the same field staff deliver messages for different disciplines. Furthermore, since the average small-scale farmer in Africa is engaged in mixed farming operations, if there is a single extension agent, he or she can understand the interrelated activities on the farm as a whole, and the farmer’s priorities and potential. It is thus
convenient for the farmers to deal with only one extension agent, rather than three or four individuals, who might give conflicting recommendations and compete for his or her time.

In the discussions on this subject, however, questions arose about how many disciplines can be thus combined without overloading the system. The issue of overload arises because several countries pointed out their difficulties in training extension staff having a background in one discipline, say agronomy, also to carry messages in other fields, like livestock, for example. Also, theoretically, all of agriculture, from field crops, to livestock, fisheries, bee-keeping, sericulture etc. could be unified. Would this be feasible, or advisable? Mrs. Bagchee, a resource person for both seminars, pointed out that this issue could be resolved by identifying the various elements of the underlying farming system. Those elements that are interrelated in the current systems or those additional elements which possibly could be integrated in the future, should be unified. But this choice has always to be made with reference to the farmers and the actual integration of activities at the field level, not with reference to any abstract ideas of what constitutes "agriculture." Thus, it would be valid to combine farm-pond fishery with crop husbandry and livestock, if the same farmers were engaged in all three activities as in Uganda. But it is not necessary in Mauritius, for example, to combine extension regarding demersal fishery and sugarcane, because the two are separate economic activities undertaken by separate groups of farmers. Giving an example from the Indian context, she mentioned that since, in Assam, tree crops were grown by the smallholders in their homestead gardens, there should be a common extension service covering both field crops and horticulture. But in Himachal Pradesh, where horticulture is a separate, large estate activity, there could be separate extension services for field crops and horticulture, if that is found more cost-effective.

Technology Issues

A second major theme to emerge from the Africa Extension workshops was regarding Technology. The main concerns here were:

(i) Generation of relevant technologies
(ii) Inclusion of natural resource management in research-extension activities
(iii) Collaboration between research and extension agencies
(iv) Management of national agricultural research systems (NARSs).

Fundamental to the extension task is having a set of useful technologies to communicate to farmers. Professor Evenson pointed out that extension was most effective when there was a sizable "slack to be mined," that is, when the gap between the potential yields possible with improved technology and the yield levels currently attained by farmers, was very wide.

Several country reports gave examples of how T&V extension had been successful in disseminating improved, mainly low-input, technologies. For example, Uganda reported higher yields in maize, groundnut and beans by focusing on optimum plant population, timeliness of planting, weeding and harvesting. Ethiopia reports that
a simple and relatively inexpensive technology known as Broad Bed Maker (BBM) had been developed by the International Livestock Centre for Africa (ILCA) and had proved successful in black clay areas.

Box 3.3: Extension Changes Traditional Farming Practices in Nigeria

In Nigeria, the impact of extension efforts can be seen in the following areas:

- Improved technologies relating to yam and cassava based crop mixtures
  
  (i) Although farmers traditionally plant yam and cassava in large mounds made haphazardly about 2 meters apart, extension agents assisted them to lay demonstration plots using 1 meter x 1 meter spacing. Because the aggregate yields under the improved practice were more than through the farmers' traditional methods, use of the improved practice spread fast.

  (ii) The recommendation to stake the yam vines from four mounds to a single stake, rather than the farmers' practice of staking each vine separately, was readily taken up when farmers saw the saving on sticks that resulted. This was particularly relevant since staking materials were becoming very scarce, and the energy to procure the sticks and carry out the staking exercise could be saved. Realizing this fact, a farmer remarked that if his father had received this recommendation, he might still have been alive!

  (iii) The cropping system of planting alternate rows of yam, maize, and cassava became popular when extension agents demonstrated that it frees pieces of land from being held up by cassava during its longer growth period, making them available for the production of other crops. This arrangement is particularly popular now in South-eastern Nigeria where arable land is very limited and highly fragmented.

- Livestock and Fisheries

  (i) Extension efforts, particularly in the South, focused on the popularization of rabbit production because of their prolific breeding, and the need to boost the protein intake of the rural populace;

  (ii) In fisheries, extension has given useful advice on the preservation of fishing nets, maintenance of out-board engines, homestead fish farming and fish handling, preservation, and packaging.

- Nutrition

  The Women in Agriculture unit has demonstrated various soybean recipes: soya milk, soya "moimoi", soya "akara", soybean soup etc. Unless extension introduces and popularizes these new foods, the soya crop is not likely to be widely integrated into the existing farming system.

However, questions were also raised as to how managers should proceed when it is not clear if the problem lies with extension or the generation of relevant technology, or the delivery of other support services. For example:
(i) When farmers say they cannot afford the new technologies does one conclude that there is something wrong with the extension messages or that it is time to start a credit initiative.

(ii) When monthly workshops of subject matter specialists are irregularly held because the content tends to be repetitive, does one conclude that the training methodology is wrong, or that the pace of technology generation is slow.

Such distress signals call attention to the need to systematically analyze the current state of research, because research plays a vital role in providing extension with new technical information.

**Generation of Relevant Technologies**

In many countries, extension services seem to be facing problems with regard to the availability of useful technologies to disseminate to farmers.

Some countries reported that although improved technologies were available in crop husbandry, little new information was available in other fields, thus challenging the implementation of "unified extension." For unified extension to work, there should be adequate generation of technology in all the relevant subsectors.

Several countries said that they felt that workshops should be held less frequently than monthly, because not only were they expensive, but there was nothing new to communicate to the extension SMSs.

Regarding this, Mr. Benor cautioned that the cost of not holding regular training should also be borne in mind. The participants were alive to this problem and several useful suggestions were made. One was that the costs of holding the workshops should be worked out and specific budgets (for the scientists' travel costs, etc) be provided. There was no consensus, though, on whether these funds should be in extension (as in Kenya and Ghana) or research budgets. It was mentioned that some countries have managed to reduce costs of training by selecting only relevant people for the workshops according to the items on the agenda. The quality of the workshops also considerably improved (in Nigeria, Mali for example), when they were made a two-way process, helping the researchers to also learn from the subject matter specialists, the reasons for large variations in farmers' practices, yields, revenues, and losses, as also to improve their knowledge about best farmers' practices and innovations. Such improved workshops, with a genuine two-way dialogue between subject matter specialists and researchers, help in the generation and dissemination of more relevant technologies.

A further issue in technology generation concerns the development of relevant technologies, that is, technologies that the farmers consider possible to adopt. Often, it was observed, the gap between researchers and farmers is wide. Knowledge of the farmers' world, of their milieu and constraints, needs, or long-established technologies used, are often of less interest to the researcher than the technical proposals that emanate
from research. Consequently, the farmer is seldom involved in the conception, execution and evaluation of research proposals, and research is thus bereft of the feedback necessary either to modify proposals or to take into consideration the farming system followed by the farmers. In this context, it was felt that the quality of research would improve if extension workers could provide this vital input, and if subject matter specialists and researchers undertook more joint diagnostic surveys and had two-way exchanges during the monthly workshop.

The problem of developing technologies useful for women farmers was equally acute. No worthwhile exchange between extension agents and women farmers could take place unless an assessment of the needs of women farmers had been done and research had addressed these needs.

One way to improve relations between research and farmers was the Farming Systems Research (FSR) approach. A few countries like Nigeria, Zambia, Tanzania, Cote d’Ivoire, Benin, Burundi etc. have introduced an FSR perspective which is expected to yield better results because of its closer association with farmers and a 'systems' approach to understanding small-scale, mixed farming enterprises. The approach based on FSR represents an excellent means of diagnostic analysis, and development of relevant technologies. This is most welcome from the point of view of extension. The lessons emanating from FSR can be diffused through the national extension services.

On the subject of involving farmers themselves in technology development, Mr. B. Haverkort of the Information Centre for Low External Input and Sustainable Agriculture (ILEIA), pointed out (in Accra) that, irrespective of what researchers were doing, extension agents could follow and assist the farmers in their own experimentation. They could thus come up with improvements based on locally available resources, which may be worth spreading to other farmers. Many participants wanted to know in what way the participatory technology development described by him was different from the farming systems approach. In fact, the two approaches are almost identical; the only difference perhaps being that the approach outlined by Mr. Haverkort gives particular emphasis to "low external inputs". In those regions of Africa, where because of the highly fragile eco-systems, or the unavailability of inputs or resources to purchase them, this low external input approach of participatory technology development would have particular relevance.

Inclusion of Natural Resource Management in Research-Extension Activities

Farmers work in a production system often set in deteriorating natural surroundings. The production systems themselves may hasten the depletion of the natural resource base. It is necessary that researchers and extensionists should be alive to this problem and integrate natural resource management into their activities.

Among the representatives assembled in Accra, those from Zambia, Kenya, Ethiopia and Uganda mentioned that soil erosion was a serious problem. Therefore, soil conservation practices had been included in the extension messages. On-farm techniques of soil conservation, such as contour ridging, storm draining and intercropping,
conclusion and maintenance of structures, trash lines, unploughed strips, terraces, use of grass filter strips and trees have been successfully disseminated through extension.

In contrast, the participants in Abidjan pointed out why it was difficult to integrate natural resource management (NRM) with extension. First, staff working in natural resource management projects and those in field extension differed in their perspectives (entire watersheds as against farmers' plots) and had different time horizons (several years as against single seasons). NRM approaches the problem from the point of view of the whole village, or even a group of villages, whereas extension approaches it from the level of contact farmer groups. The impact of NRM messages, which have implications for the long-term, do not also lend themselves easily to assessment by the monitoring and evaluation units of extension (which report on the rate of adoption by farmers of extension messages over the last crop season).

It was observed that often, research and extension structures lack the competence necessary to study the wider environment in which farmers operate. Where this competence does exist, it does not always receive the political and financial support necessary for NRM programs to be implemented. Yet, natural resource management is an indispensable factor if sustainable agriculture is to be promoted.

There was no resolution of this issue. The group merely concluded that research and extension should take natural resource management into account so as to generate extension methodologies to motivate farmers for community action, and to develop and disseminate appropriate technologies for the management of individual farms, as well as for community resources. Since extension in Africa now largely works through farmers' groups, it should be possible for it to motivate them for community action to preserve their shared natural resource base. More discussions are needed on how, precisely, the extension and natural resource management projects could collaborate with one another, or coordinate their activities, given the complementarity of their objectives and approaches.
Box 3.4: Extension and Natural Resource Management

Mali is a good example of the coordination envisaged between extension and natural resource management programs. The National Extension Project (PNVA) and the Project for Natural Resource Management (PGRN) represent a new generation of IDA-assisted projects aimed at sustainable development. Since collaboration between the two projects is crucial, it has been legitimized through a protocol signed between the two Directorates.

Complementarity of Objectives: The objectives of PNVA and PGRN are complementary. While the PNVA will concentrate on production technologies to be advocated for individual fields and livestock herds, PGRN will concern itself with the sustainable management of the community resource base (rangeland, forests, fallows, rivers). Together, these programs will cover the entire resource base of the village, whose sustainable development is the common objective of the two projects. This involves increasing the productivity and earnings of the villagers in such a way as to make for sustainability by helping them to develop the production capacity of the existing human, natural and financial resources.

Complementarity of Approaches: The PNVA will be addressing issues of sustainable development for individual farms and herds, through the contact farmers' groups, while the PGRN will be addressing issues related to the management of common lands, through natural resource management councils and through sub-sectoral groups at the village level, such as herders, agriculturists, fishermen, forest dwellers, women, etc.

Supervision/Coordination Structures are Almost Identical: At the national level, the PGRN National Coordinating Committee is the twin of the PNVA National Coordinating Committee, but it extends to a wider range of institutions. The Subject Matter Specialists of PNVA and the Technical Support Teams of PGRN will together provide technical supervision and support in the field, and both will, together, train extension agents the fortnightly training sessions.

Complementarity of Means of Intervention: Although the PNVA does not have resources to invest at the village level, the PGRN has access to funding, of which the PNVA will take advantage in order to encourage farmers to participate in its activities.

Areas of Coordination and Collaboration: PNVA's teams of Subject Matter Specialists are multi-disciplinary (comprising of specialists in agronomy, pest management, livestock, etc.). By contrast, PGRN's Technical Support Teams are multi-functional (comprising of persons responsible for community organization and goal setting, mastering technical issues, and managing financial resources). Together, these teams will take on the responsibility for fortnightly training and will provide the Extension Agents with support as per the work program decided during the joint fortnightly meetings.

The village level extension agents are the same for both the projects; and their selection, recruitment, training and management will be done with regard to the attainment of both projects' objectives. On average, under the PNVA, one extension agent works with about 600 farm families. Where the extension agent is also doing PGRN work, the number of farmers he or she has to work with will be reduced, so as to equalize his/her work-burden with those doing only PNVA work.

Collaboration Between Research and Extension Agencies

The T&V system visualizes a systematic strengthening of extension's links with research. Such efforts, have, therefore, been initiated in all the countries represented at
the workshop. In virtually all these countries, an interface between research and extension has been established through pre-seasonal workshops, monthly training programs, joint field visits, and, in some cases, through adaptive/on-farm trial programs. Cote d'Ivoire, Burkina Faso, Togo and Nigeria offered good examples of such linkages.

A question raised in the discussions was: Given that research and extension should come together, who should bring them together? Which of them should take the initiative? Many participants mentioned that permanent institutions like research-extension liaison committees (RELC) had been set up specifically with the mandate to improve the collaboration between the two. However, it was also pointed out that the risk of such arrangements, was that sometimes the RELC develops its own institutional interest and consequently reduces the possibility of direct communication between research and extension.

What is perhaps more important than such "linkage" institutions, is good communication and an attitudinal reorientation. But at times, links between research and extension are characterized by ignorance of each other's work which leads to conflict of competence, and mutual accusation in the event of failure. This situation is made worse by a lack of informal contact due to institutional barriers and to differences in training and approach. Scientific training can give the researcher a superiority complex, which results in research being directed more towards publishable work than towards the generation of technology that would be of most use to farmers. Scientists often lack the skills necessary to pass on their knowledge and findings through the training of extension specialists. The extension officers, on their part, lacking in confidence, feel frustrated and tend to conclude, too easily, that research has no worthwhile technology to offer; or indeed, that they, themselves, have nothing to offer to help the researchers better understand the farmers' practices, constraints and potential.

It was suggested that healthier attitudes and relations could be developed between research and extension if both saw themselves as supporting the farmer. The participant from Zambia illustrated this by a diagram showing research and extension suspended from the two hands of a farmer.
Management of National Agricultural Research Systems

Because research is so vitally linked to extension, a host of issues concerning the management of research systems was also discussed at the workshops.

In the first place, the discussions showed that there was a great variety in the way research systems were organized in the various countries. For example, in Zambia, agricultural research is the responsibility of the Research Branch within the Department of Agriculture itself. In Kenya, the Kenya Agricultural Research Institute (KARI) is a parastatal not even in the Ministry of Agriculture. Although research services could conceivably be privatized or semi-privatized for certain commercial crops (sugarcane, coffee, tea, cocoa), the consensus was that a generalized research system was still required and had to be publicly financed. The Bank had also provided assistance to projects to strengthen national agricultural research systems (NARS).

Regarding the management of NARSs, one issue concerns their decentralization. Extension everywhere seems to welcome a move to decentralize research activities. In some cases, this was done through identifying agro-ecological zones. In others, like Ethiopia's restructuring from a unitary to a federal structure, it meant strengthening capacities at the provincial or district levels. The institutionalization of the adaptive research planning team (ARPT) in Zambia was also meant to afford the provinces the freedom to make recommendations that are more reflective of the conditions in the province than to use recommendations that had a national perspective.
The dispersal of demonstrations, through small-plot agricultural trials (SPATs) is also a methodology for quicker transfer of technology by reaching more farmers.

Another issue that arose with reference to the organization of research was the location of the subject matter specialists (SMS). In some countries, they are part of the extension regional teams and functionaries of the agriculture ministries or departments. In others, they are drawn from units that were formerly responsible for research (in Ethiopia, subject matter specialists are drawn from the Agriculture Development Department, in Ghana, from the Crops Services Department - CSD). Similarly, there are questions about where to locate the adaptive research teams (ARTs) - in the research or extension systems, or in both. The best results, it would appear, would be achieved if the adaptive research teams include both researchers and extension workers, and function as a real "team."

Finally, several participants stressed the necessity of having a 'Research Plan' and of involving extension in its preparation. This was seen as a perspective plan for research, setting its agenda and priorities for the next five or ten years, and making the necessary financing arrangements. However, not all participants supported this idea for, they observed, such a plan could again tend towards a 'national' orientation and become rigid in its objectives, detracting from a flexible, local, and field-oriented perspective that contributes to solving the farmers' problems on the ground as they occur. In their view, what was needed was more decentralization and flexibility in setting research agendas, and this might be lost if there was a national plan for agricultural research. In fact, many felt that research in Africa needs to be more farmer-oriented, and extension-driven. Another important idea mooted was that extension should not be tied to any particular research facility for backstopping, but should be allowed to take whatever technologies it thought suitable and worth trying from any source: whether from farmers themselves or from any research unit, national, regional or international. There was general consensus on this point.

**Training Aspects**

The major investment in the T&V system is in the development of human capital through training. This is because of the emphasis T&V gives to the continual training of its various cadres. The effectiveness of the system is directly linked to the frequency and quality of its training programs, which form an integral part of its management system. The lack of well-trained extension personnel continues to be a problem for most national systems. This was another of the major concerns expressed in the workshops. The discussions revolved around several aspects of training, broadly covering two areas.

(i) Human resource development; and
(ii) Training.

Here, the use of the phrase "human resource development" implies the entire range of personnel policies, affording opportunities to the staff for career planning, upgrading their educational qualifications, and providing them motivation to do good
work. Training, on the other hand, covers the narrower area of imparting knowledge and skills relevant to the job.

**Human Resource Development**

Several participants emphasized that most agriculture ministries lack personnel policies for the long-term management and development of the extension cadres. Extension cadres were created by amalgamating persons with different backgrounds and capacities; there were frequent transfers; and inappropriate job assignments. Subject matter specialists were drawn from different sources in an ad hoc manner, and the absence of statutes (service rules) was a set-back to the professionalization of this group. The suggestion was that if there was a specialized cadre created of the subject matter specialists, with a separate set of recruitment rules, there would be greater professionalism, as the entry level qualification would be specified, and promotion opportunities would be available within that hierarchy.

A need was expressed for more rational policies aimed at human resource development. Management should pay greater attention to the rational deployment of staff and to career development prospects. Opportunities for in-service education (as opposed to just training) should be provided. Specialization should be encouraged. Staff promotions should be encouraged through professional exams. Each country should organize its salary and incentives system so that the different levels of extension agents nation-wide receive comparable remuneration. A bonus system based on efficiency and actual results in the field should be set up to provide extension agents with motivation.
Box 3.5: Increasing Training Capacities: The Kenyan Experience

Kenya has an excellent network of agricultural training institutions, most of which are undergoing expansion. About 300 agricultural graduates leave the universities each year. A majority of them are then employed in the research system or as Agricultural Officers at the district level.

Divisional extension staff are trained to diploma level through a three-year course at Egerton College. Some 200 diplomates per annum are thus available for placement by the Ministry of Agriculture and Livestock Development (MALD).

The front line staff have received a two-year certificate training from the Embu and Bukura Institutes. The output available for recruitment by MALD is about 200 per annum, though the annual recruitment of this cadre of staff has recently been suspended for the last two to three years.

Recently, some changes have been made in the roles of the different institutes. Certificate training is now being undertaken at the Kilifi Institute of Agriculture with an output of 200 Technical Assistants annually. The Embu and Bukura Institutes have recently changed their roles. The Embu Institute has become a staff training institute and is undertaking upgrading of Junior Agricultural Assistants, while the Bukura Institute has been converted to a Diploma Training College to produce diplomates.

It should also be mentioned that about 1,000 of the frontline staff currently in the field have no formal training in agriculture, apart from a three month in-service training course on joining the ministry. But these Junior Technical Assistants (JTAs) have an excellent knowledge of their areas and have amply demonstrated in the pilot project in Nandi and Kericho that, given intensive in-service training, they are capable of absorbing extension recommendations, and passing them on to farmers effectively. However, these JTAs are gradually being phased out, as they retire, being replaced by staff with higher qualifications.

Training

The workshops identified the following types of training.

(i) Pre-Service Education: (e.g. Certificate, Diploma, Degree)

(ii) Induction Training:
(a) Job Orientation
(b) Organization, Procedures and Requirements

(iii) In-Service Training:
(a) Periodic Training (e.g. fortnightly, communicating specific impact points)
(b) Monthly Technical Review Meetings
(c) Ad Hoc Skill Development Workshops
(d) Functional Training Workshops
(e) Short Courses (impacting new skills and knowledge)
(f) Seminars
(iv) **In-Service Education:**
(a) Refresher Courses (to upgrade skills)
(b) Technical Courses (in new subject matter areas)
(c) Diploma/Degree Programs (to upgrade qualifications)

(v) **Professional Development:**
(a) Conferences
(b) Study Tours
(c) Self-directed Learning

Of these activities, most of the discussion revolved around the subject of fortnightly training and the monthly workshops. The problem in many countries is that these have become routine and repetitive—they have lost their impact and energy. This is because Subject Matter Specialists/trainers have lost their focus and the training frequently consists of a one-way flow of information.

As a result, quite a few countries have opted to save on the costs of logistics and have reduced the frequency of these trainings. This has its own 'cost' (even more serious); as the feedback link from the field is weakened, and the opportunity for flexibility and fine tuning of messages is lost, ultimately threatening morale, confidence, and motivation.

It was recommended that fortnightly training sessions and monthly workshops should follow a problem-solving methodology wherein Subject Matter Specialists do not serve only as purveyors of knowledge and skills. This methodology assumes a manageable group size (about fifteen to twenty-five trainees) with a facilitator (animateur) to ensure the full participation of field staff.

An area that needs greater attention is skills development. Along with technical knowledge, a good extension worker requires communication skills—how to listen, observe, and evoke participation and involvement. These aspects of training, and more opportunities for periodical functional training workshops, short courses and seminars, need more attention.

In this context, the participants also suggested the creation of a practical guide to agricultural extension training, based on the current African experience.

Finally, the need was voiced for the creation of an African agricultural extension network so that individual countries could exchange their experiences, as they had done in this workshop. One idea was to have a newsletter, brought out periodically, which would update knowledge about extension services, highlight successful case studies, and publicize innovations. The other idea mooted was to have a regional centre which could support new experiments in extension methodologies, and act as a clearing house for the exchange of ideas and experience. It was mentioned that at present, the CGIAR supports eighteen international institutes for various disciplines of agricultural research. But there is not a single institute of this kind servicing agricultural extension. With about thirty countries in Africa alone implementing professional extension services,
the time had perhaps come for such a regional centre, either to be created or set up by upgrading one of the national training institutes. The participants were of the view that the Bank should sponsor the establishment of such a centre for research, documentation and training in extension methodologies.

Extension for Special Categories of Farmers

A fourth major area of concern at the Africa extension workshops was targeting and reaching special groups and areas. These included women farmers, young farmers, farmers' organizations and marginal areas. It was the general consensus that special diagnostic analyses and innovative methodologies need to be devised in order to service these special categories of farmers.

In Abidjan, the focus was on how to involve farmers' organizations with extension. The organizations analyzed were contact groups, cooperatives, production and service groups, social groups, women's groups and unions. Very useful suggestions were made on how extension's links with these groups could be strengthened.

In both workshops, a major part of the discussions focussed on women farmers. Several shades of opinion were expressed: (a) gender bias is a sociological phenomenon, and professional extension should not get involved with social movements; (b) the feminist movement is an imported idea to Africa, and although, fashionable in international circles, it is not relevant in Africa (The representative from Ethiopia said that in Ethiopia, poverty is a more acute problem than gender bias); (c) there is no 'women's problem' as such, because good farming techniques are gender-neutral; (d) extension cannot assist women farmers very much because of social and religious barriers that preclude women from interacting with outsiders, especially men; and (e) there is an urgent need to increase the number of women professionals in agricultural services and address the needs of women farmers.

Despite these varying shades of opinion, the facts reported from the field by many participants regarding women's presence and involvement in farming, are irrefutable. The recent Bank study by Katrine Saito\textsuperscript{14} was referred to, which offers the following facts:

(i) Traditional farming systems (and the separation of land into men's plots and women's plots, peculiar to African agriculture) are slowly disappearing.

(ii) Women farmers are increasingly numerous (currently women farmers account for 70 percent of food production).

(iii) Women work one-and-a-half times as much as men.

(iv) Women have limited access to inputs and other agricultural services, including extension (in Kenya alone the resultant loss of female productivity is 20 percent).
Women need energy-saving technology most of all, e.g. small machines. (1 percent of tasks on African farms are mechanized, 10 percent are carried out by animal power and 89 percent by hand; women’s fields are worked by hand more than men’s fields).

From these facts, it seemed evident to most participants that extension should concern itself with the issues of women farmers. As Mr. Benor puts it: good extension will serve the needs of all farmers, certainly of the majority farmers. If the farmers happen to be women, extension must serve their needs, but as farmers, not because they are "women."

The debate on this issue became confused on the question of two aspects of "women in agriculture." One issue has to do with reaching women farmers in the field; the other deals with recruiting and assisting women professionals in the agricultural services. The two aspects may, in some contexts, be linked. But they are not identical issues.

Reaching Women Farmers

Some countries have already made impressive starts in this regard. Zambia has mounted a mobile course on food crops offered in the afternoons to reach women. In Malawi, extension is effective in reaching some women farmers because it works through Farmer Clubs.

A point repeatedly made was that effective outreach was not possible in the absence of pertinent technologies. The prerequisites for providing an effective extension service to women farmers were: (a) a thorough diagnostic analysis of the constraints to increasing their agricultural productivity and (b) relevant and appropriate technologies.

If these are available, extension services could be provided to women farmers. Suggestions were also given regarding methodologies that may be appropriate in reaching women. For example, female participation can be increased by meeting women in groups, at times convenient to them (rather than as scheduled according to the agent’s convenience), through female extension workers, and by offering greater assistance on where and how to obtain credit, inputs, and marketing support. The point was also made that rural women need to be brought into functional literacy programs.
Box 3.6: Rural Women: The Neglected Potential

Women are perhaps the most important, and the most neglected, rural people. They are responsible for an estimated 70 percent of staple food production. In most African cultures, women's rights and duties are complex. Women may be allocated fields (usually from their father's or husband's land), be responsible for specific crops and operations, and enjoy independent income from certain crops or, as in West Africa, from marketing. Often the benefits of initiatives such as promoting cash crops, mechanization, extension, and resettlement flow to men, who manage these activities. Finally, as farms shrink through inheritance and population pressure and men turn to outside work and become part-time farmers, women increasingly manage the family farm. In many areas, half of all farms are managed by women; in some, such as in the Congo, the figure is as high as 70 percent. Women's agricultural workload grows while their traditional work burden in childcare, wood gathering, water fetching, and staple food pounding remains the same—or grows too. The burden on women means that land preparation, planting and weeding are often delayed, which depresses yields.

There are several ways to help African women in agriculture. The labor burden falling on women could be reduced, for example, by providing sources of water and wood closer to home. Fuel-efficient stoves can decrease time spent collecting fuelwood. Agricultural research and extension systems also need to be responsive to women's needs. Women farmers should be involved in on-farm research to make sure that the new varieties and technologies recommended largely correspond to their needs and constraints. Women's representation in agricultural training, currently only about 20 percent in Africa, should be brought closer to Asia's 50 percent. Male extension workers should be trained to be aware of women's roles, needs, and problems, and women should be selected as contact farmers in proportion to their numbers as farm managers. In many parts of Kenya, women already make up one-half of all contacts of extension workers, many of whom say they find women more interested and committed than men. Women's groups need to be fostered. They could then be used, for instance, not only as contacts for extension services but also for channeling credit for the purchase of inputs. Finally, female education needs to be expanded, since farmers with higher levels of education have been shown to achieve higher increases in output using new technology.


Recruiting Women Professionals

To analyze the constraints of women in agriculture, and devise strategies to assist them, several countries have set up special units in their departments of agriculture or extension. For the most part, these units have been restructured or expanded from the earlier home economics/nutrition cells. And women occupy almost exclusively the positions in such units.

Several concerns were voiced at the workshop regarding women's divisions. One was that most of the current female staff are trained only in home economics, nutrition and related fields. To redeploy them for field extension work, they will have to be retrained in agriculture, particularly crop sciences, livestock and so on. The logistics of such retraining have not, it would appear, been seriously studied or undertaken in any country. Another problem cited was regarding their deployment in the field. Mention was made of the impracticality of posting women to remote areas, and
of their seeking postings wherever their husbands worked, and so on. The strain on the extension service because of these requests for transfer, as well as greater demands for leave (to attend to domestic matters) detracted from the "efficiency" of the department. The point was also made that before more women could be recruited into the extension (or research) systems, attention would have to be given to increasing women's enrolment in agricultural education institutions. Efforts should also be made to encourage more women to join these courses of study, adequate hostel facilities need to be built, and so on.

Finally, the problem posed was how to manage the two parallel organizations (one for men, the other for women) caused by further expansion of the women's division. In terms of costs, this duplication would be unsustainable. All countries agreed that "mainstreaming" women was the only solution.

**What is Meant by Mainstreaming Women?**

Despite the significant role played by women in agriculture over the centuries, public agricultural services did not pay adequate attention to the issue till about the late 1970s. Thereafter, as a consequence of the growing awareness of this neglect, several special projects for women in agriculture were started, both by governments as well as NGO's. For the most part, these were small initiatives, modestly funded, and employing only female staff. Almost a decade later, the feeling is that having separate women's projects is not a 'sustainable' proposition. The reasons are two. First, it is administratively costly to have two parallel projects/extension services: one comprising male functionaries serving male farmers, another female functionaries catering to female farmers. The second is that women farmers are an indivisible part of the farming system in most communities. It is difficult to isolate their role and contribution to the farming system from those of male farmers and sometimes of children as well. Therefore, in the long run, women's issues should be "mainstreamed" into the general policies and strategies devised for agricultural development as a whole.

However the concept of mainstreaming is not without some ambiguities. Does it mean:

(i) Bringing women farmers into mainstream agriculture?
(ii) Merging the 'special' projects (for women) into the general extension services?
(iii) Retaining the special projects, but recruiting more women into the general extension services (and posting men to the special projects)?

It is clearly not (i), for women farmers are in mainstream agriculture. But there is some ambiguity on whether "mainstreaming" implies (ii) or (iii). While recommending the mainstreaming of women in agriculture, workshop participants did not go into the exact meaning of the term 'mainstreaming', nor its implications for planning to get more women into institutes for agricultural education, and other related activities.
The issue was more sharply debated at the Accra workshop than in Abidjan. The recommendation for mainstreaming women’s issues dismays (even threatens) those who have so far led the movement to draw attention to this subject. Their fear is that just as awareness of women’s contribution to agriculture is gaining ground, the call to ‘mainstream’ will diminish the focus on women’s problems, and hamper serious attempts to understand and address their constraints. They argue that even if, in the long run, agriculture must be seen in terms of a whole farming system (including therein the contribution of men, women and children), a special focus on women needs to be maintained for some time to come, considering the gross neglect of the woman’s role for so many years.

The consensus at the workshop was that too much would be lost if the focus is diffused at this point. It will amount to giving up the objective to help women farmers even before a really good diagnosis of their problems has been achieved.

One can infer the following conclusions from the debates on this issue in Accra and Abidjan:

(i) It is necessary to maintain a special focus on understanding women’s role in agriculture (especially in getting good diagnostic analyses of their constraints in agricultural production).

(ii) Just as extension treats small-scale farmers as deserving of special attention (within the mainstream), it should also treat women-farmers as deserving a special focus.

(iii) In order to retain this focus, it is necessary to have special cells, and Subject Matter Specialists concerned exclusively with women-in-agriculture.

(iv) Whether or not a parallel extension hierarchy going down all the way to the field is necessary, and if this hierarchy should be constituted exclusively of female staff, should be reviewed in the context of each country. If it is found that it is not ‘necessary’ (in the sense that women-farmers are not barred, culturally, from interacting with male extension agents) then costs can be cut by "sensitizing" the existing extension personnel to gender issues rather than recruiting a parallel hierarchy. Where, however, it is necessary (because of the socio-cultural, religious segregation of sexes), separate female extension agents should be recruited.

(v) Filling the special cells and SMS posts (concerned with women-in-agriculture) with male functionaries was considered feasible. A view was also expressed that at times, this could even increase their credibility and effectiveness; but also, such a move would adversely affect women’s employment chances. Therefore, again, each country must see what is best in its particular context.
4. Implications for Policy

The outcome of the week-long deliberations in both Accra and Abidjan would particularly interest the following groups:

(i) Managers of the national extension programs (officials of the concerned countries).

(ii) African governments, i.e. policy makers entrusted with the responsibility, not only for the delivery of extension, but for overall agricultural and economic growth. These levels (administrative and political), besides setting policies in agriculture/livestock/research/horticulture/etc. primarily execute the important functions of planning and making financial allocations to different sectors.

(iii) Task managers and technical specialists of the World Bank working in the Africa region.

(iv) Policy makers within the World Bank.

(v) Other financing agencies (ADB, IFAD), donors and NGO's implementing agriculture development projects in Africa.

The discussions might also interest others, such as people in academia and international organizations like UNDP, FAO, CGIAR and ISNAR. But the five groups mentioned previously would find some conclusions here which indicate the need for specific interventions on their part. Some possible inferences (from the debate) for policy and action by these groups are briefly outlined here:

(i) In Africa, there is a growing awareness of the importance of small-scale agriculture (both because of the number of households engaged in it and the value of its food and export crop production). The complex farming systems of the majority of smallholder producers indicates a need for more determined action to:

(a) strengthen the recently established unified national extension systems (as opposed to crop-specific services);

(b) focus research on hitherto neglected areas: "orphan" foodcrops such as sweet potato, yams, and cassava, intercropping and natural resource management;
(c) align research efforts with small-scale integrated production systems by introducing more participative on-farm research, like the multidisciplinary farmer-oriented approach of FSR (farming systems research).

(ii) Given the impact potential of T&V extension (brought out in the Evenson and Bindlish study), there is a case for strengthening efforts to make these extension services more effective. This calls for:

(a) commitment of persons and resources to extension; and

(b) commitment to the basic principles that underlie this management system. It would be self-defeating to introduce structures without the spirit (i.e. the management principles) of T&V.

(iii) To avoid confusion and duplication of resources, unification of the extension effort has been advocated for a long time. However, most participants at the workshop admitted that complete unification has not been possible to achieve, and many other privately-funded commodity specific extension agencies (e.g. Kenya's Tea Development Authority, British American Tobacco, etc.) continue side-by-side with national extension services organized along T&V lines. The conclusions for future policy would be:

(a) even if old structures die hard, separate extension projects ("enclave" projects), outside the national extension programs, should not be set up in the future; and

(b) extension projects with a conflicting approach (e.g. which bring subsidies, doorstep delivery of inputs or linked credit) should not be adopted.

(iv) A rich variety of 'modifications of T&V' adapted to the countries' socio-administrative realities was described. This is acceptable, almost inevitable. Hence, while there are not many uniform recommendations regarding the organization of national extension services, but there was unanimity on the following:

(a) extension should deal exclusively with the two-way transfer of messages between farmer and researcher, and not undertake multiple functions of development, such as delivery of inputs, credit, etc.;

(b) as field extension workers are, repeatedly, difficult to retain in the rural areas because of difficult working conditions, there is a temptation to create a cadre of extension workers below the field extension workers. This temptation should be resisted. Instead,
the field extension worker should be better equipped to face the farmers so that successes in this interface offer professional job satisfaction; and

(c) while giving extension staff bonuses and incentives, one should keep cost considerations in mind, as well as avoid making the extension service too privileged compared to its peers.

(v) If the privatization of extension services is contemplated, it should start from the cash crop/commodity side, not from the side of generalized extension for foodcrops, small-scale and integrated farming systems. In fact, privatization efforts should start with input distribution services, particularly seed production and distribution, rather than from research and extension services.

(vi) The training cycle (fortnightly and monthly training sessions), in some countries, is apparently becoming progressively irregular (reportedly on account of the logistical and financial support needed). But many of the lacunae and problems in the system can, in fact, be resolved only through more interaction and better training. This calls for:

(a) constant attempts to improve the quality of training by including components to inculcate skills of observation, leadership;

(b) making sessions more interactive between the trainer and trainees, and providing a feedback on farmers' problems to research scientists; and

(c) focusing on small-group discussions, using management learning games, field trips and so on.

(vii) Extension activities should increase the attention paid to female farmers. In practical terms, the actions required are:

(a) retrain existing female staff: if they have a background only of home economics/nutrition, they should be provided training in crop/animal husbandry, horticulture, fisheries, field extension methodologies, etc.;

(b) where there are barriers of effective interaction between male extension workers and women farmers, recruit and train a cadre of women field functionaries;

(c) encourage women's recruitment into government services;

(d) as a corollary, increase the intake of women into educational institutions;
(e) sensitize all extension workers to recognize and appreciate the role of women in farming systems;

(f) strengthen through training, on a top priority basis, the capacity for effective local diagnosis of the constraints to, and potential for, increasing the productivity of female farmers;

(g) deliberately involve women as well as men in setting the agenda for research and in monitoring and evaluation of extension efforts; and

(h) develop suitable methodologies to reach women farmers — arranging timings that are convenient to them, meeting them in groups, actively bringing them into contact with farmer groups and so on.

(viii) Natural resource management is a growing concern. Extension advice can and should include advice regarding management of soil and water conservation at the farm level. At the same time, the more complex problems of integrating NRM with agricultural extension services (raised in the workshops) need to be studied in greater depth. A closer dialogue between the program managers of NRM and T&V is called for to explore the possibility of working together, or harmonizing their perspectives.

(ix) In improving linkages (between extension and other agencies) less emphasis is indicated for the creation of new institutional structures, and more, instead, on bringing about attitudinal change — "emotional realignment" as one of the country papers called it.

(x) A need was expressed quite strongly at both Accra and Abidjan for a regional or international centre for the regular exchange of experiences and innovative ideas in extension, and to function as a centre of excellence for training, documentation and evaluation of extension methodologies. This requires a definite project proposal to be drawn up, for securing commitment of resources. In the meantime, a newsletter could be started, to exchange ideas and experiences.

(xi) The two groups in Accra and Abidjan also indicated interest in each other's deliberations. A spontaneous request was made at the concluding session of the Abidjan workshop to give the participants some idea of what happened in Accra during the previous week. As the observations in the following chapter indicate, there were many areas of convergence (and a few of divergence) between the perspectives highlighted at the Accra and Abidjan discussions. A Pan-African dialogue on these issues seems called for. In practical terms, this involves early preparations for organizing such a conference of African policy makers.
Before and after the adoption of recommended cultural practices, mainly row planting.

Extension involves farmers in Sahel in soil and moisture conservation through construction of stone and vegetative bunds.
5. **Comparing the Accra and Abidjan Sessions**

Approximately thirty African countries are currently implementing agricultural extension systems reorganized on the training and visit pattern of management. Of these, twenty-seven countries participated in the two workshops, organized by the Bank, in Accra and Abidjan, in January 1993. The Accra discussions involved ten Anglophone countries, and the Abidjan among seventeen Francophone countries. There were some common concerns, and some differing perspectives, that emerged from the two discussions.

**Common Aspects**

At both workshops, the subject of discussion was agricultural extension, and the objectives were identical: to share experiences in implementing the T&V system of extension, and to think together on ways to make the system more effective in the coming years. (See Annexes 1 and 2 for fuller reports).

Two of the invited speakers addressed both workshops. Mr. E.V.K. Jaycox, Vice-President of the World Bank, provided a general perspective on the Bank’s involvement with development in Africa, and Professor Evenson, from Yale University, presented the evaluation study on extension (placing more emphasis on the Kenya study at Accra, and on the Burkina study in Abidjan). Mr. Cleaver’s paper on the World Bank Strategy for the Development of Agriculture in Sub-Saharan Africa was presented only at the Abidjan discussions. On the other hand, Mr. Haverkort gave a talk in Accra on farmers’ role in technology development, which was not repeated in Abidjan.

As far as the discussions went, in both Accra and Abidjan, the national representatives took charge of the proceedings, in the sense that they discussed very frankly their problems (obtaining funds and commitment from their own governments, problems of coordination with other agencies, and also training—not only technical training, but also attitudinal reorientations, etc.), and the possible solutions to these difficulties. Both groups identified, more or less, the same topics for working group deliberations: (a) Management issues; (b) Training aspects; (c) Technology development matters; and (d) Reaching extension to special areas and groups, or involving farmers’ groups in extension.

**Differences**

In the general discussions at the two workshops, one can say that certain issues were highlighted more at the Abidjan workshop, than at the Accra one. These were issues concerning the integration of extension with natural resource management, and wider issues concerning the world markets for agricultural produce, exchange rates and
commodity price fluctuations, etc. It is possible that Mr. Cleaver’s "strategy" paper stimulated such concerns.

On the other hand, in Accra, there was more concern regarding issues of coordination with other related agencies, particularly for "input" supplies, and persisting doubts about whether extension could at all be effective if divorced from, or in the absence of, these services for supplying seed, fertilizer, and credit.

The subject of reaching extension services to women farmers was raised at both workshops, but was discussed perhaps a little more seriously in Accra than it was in Abidjan. Much greater analytical and conceptual clarity seems to be necessary to make extension address this issue more squarely. However, some interesting statistics, and quite interesting reactions were expressed at the two workshops, regarding women’s role in the agricultural production systems in these countries.

Working Group Recommendations

Coming to the working group deliberations, there are some interesting comparisons relating to the recommendations made at the two workshops.

With regard to Management aspects, the common suggestions emanating from both workshops, were that there should be a national policy on agriculture, which recognizes the importance of extension; governments should allocate more funds and release them on time to the field levels; and that the World Bank should offer a long-term commitment to support these extension systems. The importance of training at all levels was stressed at both workshops.

However, an interesting suggestion made in Accra was that governments should continue to privatize other services, for example, the supply of agricultural inputs currently done by parastatals, and make the funds thus released available to extension services, which must remain in the public sector. In Abidjan, by contrast, the suggestion was made to put in place a mechanism for collaboration between government, NGO’s, and extension. Also, the Abidjan group made special mention of the need for protection against exchange rate variations, and greater flexibility in Bank conditionalities, etc.

On the subject of Training, in Accra, the working group meant to expand the title to include human resource development. But the final recommendations as presented to the plenary, mainly concerned training aspects: the need for more participative training, the need to match training with the types of skills required at various levels, the need to review curriculae, etc. In contrast, the group in Abidjan showed much greater concern for the management of human resources, by stressing aspects such as career development, incentives, rational deployment of staff according to aptitude and training, etc.

But in both fora, the discussions brought out the critical importance of training, which is really the base on which the entire edifice of the T&V system of management is founded. There was also a strong sense, at both workshops, of the need for a
continuous exchange of ideas and sharing of experiences, which could perhaps be facilitated only if there was a regional Centre for Documentation and Training. It was pointed out that whereas there were a number of CGIAR institutes for the development of agricultural technologies, there was not, as yet, any institute playing the role of a clearing house for documenting the successes, problems and failures in the management of extension services. Such a centre could be an effective forum for both training (staff) and conceptualizing effective strategies for providing this important service to the farmers.

With respect to Technology development issues, both working groups spoke of the need to reinforce research-exchange linkage, and to involve the farmers themselves in technology development. But the group in Accra specifically mentioned that governments and donors should support a "national plan" for research and extension, and that there should be a greater emphasis on on-farm research involving research, extension, and the farmer. Some mention was also made of multi-disciplinary approaches like FSR.

In Abidjan, on the other hand, there was great concern as to how the perspective of natural resource management could be integrated with extension. In fact, in the plenary, there was a discussion on whether the latter should form the subject of a separate working group of its own. There was heated debate on this issue, but no consensus in the end. Natural resource management was not eventually taken up as a subject for a separate working group deliberation, but was included as one of the topics to be covered by the working group on technology development. Thus, several issues regarding the better integration of NRM concerns in the extension messages remain to be fully explored. Obviously, the question of how the extension agent’s advice to farmers on the management of individual farms can include advice regarding the management of the larger resource base, such as a watershed, (which calls for group action), needs much greater analysis in order to be satisfactorily resolved.

Finally, the plenaries in Accra and Abidjan, diverged in their selection of the fourth topic for working group discussions. The Accra group titled their topic as Reaching extension to special groups/areas, whereas the Abidjan group took up for consideration the subject of Involving farmers’ organizations in extension. Consequently, in Accra, the interface possible with such special categories of farmers as women-farmers, youth, nomads and pastoralists etc. were discussed; while in Abidjan, attention was focused on farmers’ organizations such as syndicates, cooperatives, unions, etc. which were not analyzed in Accra.

But interestingly, despite the variations on this specific topic, these working groups were basically voicing the same concern, namely, the importance of extension services addressing the requirements of special categories of farmers. The recommendations of both groups on how to improve such interface (between extension and these special categories) were also substantially the same. Thus in both workshops, great store was laid on the importance of a good ‘diagnostic’, of pertinent technologies, and the need to train or sensitize the front-line workers to see and appreciate these special categories. Further, both groups said that women should be "mainstreamed" into
extension services, rather than be marginalized through separate projects or staff services.

Conclusion

In sum, it can be said that the quality of analysis and deliberation at both workshops was extremely high. There are, as well, a sufficient number of common concerns, and identifiable differences in approach or solutions, to make a Pan-African Dialogue well worth the investment in time and organization. From what was articulated by the national representatives at the Accra and Abidjan workshops, a need for a periodic debate to assess the evolution of extension systems in the African context, to share experiences in making these systems work more efficiently, are the felt needs of the implementors of T&V extension in these countries. A Pan-African conference, highlighting the main concerns voiced in Accra and Abidjan, would, therefore, be the next logical step in the Bank’s support for agriculture and institutional development in the continent.

Lilongwe in Perspective

Two years prior to this gathering, the Bank had organized an internal workshop for its own staff, on extension matters in Africa. The 1991 workshop at Lilongwe, Malawi had been conceived as a prelude to Accra and Abidjan. It had tried to identify the issues that should be taken up for discussion by the national implementers of extension projects. Now that these discussions are over, one can examine whether the expected ground has been covered.

The issues raised at Lilongwe have been gone into in much greater depth in the Africa Extension workshops, 1993. The participants in Accra-Abidjan have obviously a very mature experiential understanding of the complex issues involved in reorganizing extension services on T&V lines. Most participants referred to the remarkable learning opportunity that this exchange of experiences offered.

On one point, however, there was a difference in perceptions between Lilongwe and Accra-Abidjan. In Lilongwe, there had been a general consensus that it was not necessary to have in place a critical mass of preconditions before setting up effective extension. The "preconditions" considered were: efficiency of supporting services, rural infrastructure, commitment of government, an enabling policy framework, remunerative prices for farm produce, and so on. The conclusion at Lilongwe was that these conditions did not have to precede the starting up of extension services—only a minimum of political support was sufficient to start up extension. Further, that once these extension services were put in place, they would automatically, put pressure on all the other agricultural services to become more efficient.15

But this assumption, if not largely belied by subsequent events, was at least still a debatable (but undiscussed) issue at Accra and Abidjan. Examples were given of how the year in which T&V was introduced in Zambia, 1991, turned out to be a drought year with 75 percent crop failure, and how this had been a great setback to the crop
demonstrations laid out by extension that year. At about the same time the outbreak of civil war in Ethiopia, leading later to a major restructuring of the administrative set-up, also caused a break in the smooth implementation of the extension program in that country. Several other countries reported that extension was handicapped in the absence of effective systems for input supply or technology generation. Clearly then, the process of extension reform in Africa is vulnerable to such physical and political contexts to a far greater extent than had been visualized in Lilongwe. Certainly, political stability seems to have a strong effect on determining the impact of effective extension work. The larger issues of political and economic stability in the continent will, therefore, need to be tackled at the policy levels in African governments and the World Bank, before extension’s potential in improving agriculture can be more widely demonstrated.

The Kenya and Burkina case studies have shown the effectiveness of T&V extension. This system is now in place in about thirty countries in Africa. If allowed to function as envisaged, it could bring about measurable improvements in agriculture and in living standards in the rural areas. However, the returns to investment in extension and research that have been demonstrated to be possible will not be realizable in the absence of political and economic stability.

Looking Ahead

Political commitment then turns out to be the most crucial variable at this stage. It is the policy makers in African countries who will have to work out and provide the necessary “enabling environment” required by extension. Already, at Accra and Abidjan, participants from Anglophone and Francophone countries have shown a keen interest in each others’ deliberations. They have shown understanding and concern about the constraints they face in making extension more effective. A Pan-African dialogue on the policy issues appears, therefore, to be the next logical step.
Annex 1: The Deliberations in Accra

Introduction

Although the overarching theme of the Africa extension workshops was improving the effectiveness of agricultural extension in Sub-Saharan Africa, it was felt necessary for reasons of logistics and language to hold two consecutive workshops in Accra and Abidjan.

The Accra workshop was attended by staff from the following ten Anglophone countries of Africa: Ethiopia, The Gambia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Tanzania, Uganda and Zambia. All are at various stages of implementing Bank-assisted national extension programs patterned on Training and Visit (T&V) lines.

These countries were represented at the workshop by officials involved in managing the national extension services, such as Directors of Extension, concerned Heads in the Ministries of Agriculture and Livestock, as well as Principals of Training Institutes, and Directors-General in the National Research organizations. Present were also Bank staff and representatives of the other agencies, including NGO's and some parastatals. The list of participants is attached.

This brief report on the deliberations in Accra is divided into five parts.

I. Invited Speakers
II. Report on Evaluation of T&V
III. Summary of Discussions on Country Reports
IV. Conclusions and Recommendations of the Working Groups
V. Closing Comments

I. Invited Speakers

The inaugural session was chaired by the World Bank's Resident Representative in Ghana, Mr. Ravi Kanbur. The Chief Guest was the acting Minister for Agriculture of the Government of Ghana, the Hon. Mr. Ibrahim Adam.

In his opening remarks, Mr. Ravi Kanbur mentioned that the central issue for debate in development policy today was the role of government — which areas and activities of development should be handled directly by government, and which left to private enterprise and management. However, agricultural extension per se has remained above this debate, for extension deals with knowledge, and knowledge is a public good; extension therefore became a public service in most countries. However, the question of "how to run the extension system" left much to be debated, and he hoped that the
deliberations in the workshop would bring new insights and focus on the better implementation of the agricultural extension services in the participating countries.

The Hon. Minister for Agriculture, Ghana, Mr. Ibrahim Adam pointed out that extension emerges as one of the key elements that need to be strengthened if we want to reverse the decline in the per capita food production in Africa. Many workshops and seminars have already been held on the subject, and we have much documentation on the subject. Yet many problems remain, particularly the problem of low budget allocations. He stressed that the following aspects of extension should be looked into:

(i) Ensuring that the extension agents fully merge into the socio-cultural and economic environment in which they work.

(ii) Giving due importance to gender issues in servicing farmers.

(iii) Including nutrition matters in the extension messages.

(iv) Achieving a proper collaboration between foreign and local expertise.

(v) Moderating the emphasis, to some extent, on the technical and scientific aspects of technology, and concentrating more on the sociological environment to ensure that the extension agent is thoroughly integrated in the farming communities he/she seeks to serve.

He also said that research, production and processing or marketing are all closely connected and better integration was required between these three processes.

Mr. Benor of the World Bank echoed the sentiments of the Minister, and mentioned that he had always stressed that the role of extension was not simply to make farmers produce more, but also to earn more, and live better. This was an important objective for all extensionists to keep in mind.

A plenary presentation was given on farmers' role in technology development by Mr. Bertus Haverkort of ILEIA. During the country presentations, the problem of extension lacking appropriate and low cost technologies for resource poor farmers was mentioned several times. This conclusion was also drawn during the Lilongwe workshop in 1991, where it was also concluded that training for extension staff tends to be top-down and often focused on the use of expensive inputs rather than on low-cost technologies to improve yields, reduce costs, improve soil fertility, protect the environment and reduce losses.

To address these issues, Mr. Haverkort's presentation emphasized the importance of the use of locally available resources, the role of indigenous knowledge and on-farm experimentation as a way to bring together the farmers' knowledge and scientific knowledge. In this respect, Farming Systems Research and Extension Services and some NGO's are building up useful experience.
Farmers in complex, diverse and risk-prone areas have, over time, developed a great diversity of farming systems which are adapted to the specific agro-ecological conditions. The objectives of these farmers generally are more focused on achieving stable and secure harvests rather than on maximizing yields. They have developed integrated farming practices mainly using locally available resources. Some of these systems have overexploited the natural resource base, others are ensuring a good maintenance of the natural resources, but in all cases the practices are part and parcel of a strong tradition.

It has also been demonstrated that within these traditional systems, changes take place as a result of indigenous innovations. Farmers are experimenters: they compare results between fields and over time, and make adjustments in their farming practices. These farmers' experiments may not be systematic but have proved to be an important key to research and development.

Many development agents in Africa now emphasize the importance of making the maximum use of the locally available resources and using external inputs as complements. Such farming systems depend upon locally available resources and are site-specific. Some examples are: improved agro-forestry systems, soil and water harvesting with permeable dikes, integration of crops with livestock and aquaculture, intercropping legumes and grains, using improved varieties, and the use of locally produced biological pesticides.

For the development of such agricultural systems, extension and research should give special attention to farmers' knowledge and evolve ways to use this knowledge in the further development of technology.

II. Report on Evaluation of T&V Extension

The evaluation studies of Professor Evenson and his teams in Kenya and Burkina Faso have illustrated that, although the extension systems which existed in these countries prior to the introduction of T&V extension management were performing well, the new system has considerably increased the efficiency of extension. According to the most conservative calculations, the rate of return on the incremental costs of an extension system managed along the T&V principles is over 120 percent. These results have been found on the basis of data collected from a large sample of randomly selected farmers in Kenya.

The Kenya study has shown that adoption rates for messages requiring purchased inputs had been low, while adoption rates for messages requiring higher labor had been relatively high. Subsequent discussions on this point led to the conclusion that the choice of technologies to test or to extend needed careful initial diagnosis of the client group, since some countries had demonstrated that the adoption of new technologies had been constrained, either because the technology required greater labor inputs, or because of the incorrect level of purchased inputs recommended.
On the basis of the results of the studies, Professor Evenson said that extension alone can contribute as much as an additional 2 percent annually to agricultural growth. This is regarded as a very high pay-off for the investments made in putting in place the reformed extension system on T&V lines.

Although extension is performing very well, the study has identified specific improvements which can be effected.

(i) Extension management should not neglect low potential areas; low potential areas are often more responsive to extension, resulting in relatively higher increases in productivity.

(ii) Subject Matter Specialists (SMSs) who participate in on-farm research tend to obtain better results than those who do not.

(iii) More highly educated frontline extension staff do not necessarily perform better than their less educated colleagues.

(iv) The added value of supervision staff tends to decrease with the number of levels of supervision. Extension should try to limit its overhead costs. The funds for the implementation of extension are, after all, provided by the taxpayer.

The Evenson studies indicated that extension is one of the best investments in the agricultural sector.

III. Presentation of Country Reports

During the first three sessions of the workshop, the participants presented the experience of their countries in setting up and implementing professional extension systems, and highlighted the key issues that need to be addressed.

After the presentation of country experiences in each group, the discussants, Dr. Burton Swanson and Dr. Aruna Bagchee gave their observations, highlighting certain issues that were common, or particularly significant, or matters which they felt needed to be flagged for further discussion.

The key areas that arose during the country presentations and subsequent discussions are summarized by Dr. B. Swanson.

(i) ORGANIZATIONAL ASPECTS

(a) Unified extension system as against multiple extension systems
(b) Relationship with donor funded projects and commodity-specific extension systems
(c) Integration of Crop-Livestock Extension Systems
(d) Decentralization of agricultural services
(ii) **RESEARCH/EXTENSION/FARMER LINKAGES**

(a) Role and administrative home of SMSs
(b) Mechanisms for improving research-extension linkages
(c) Slow rate of technology generation by research, with farmers as a source of technology or its modification
(d) Extension SMS’s role in technology generation/adaptation

(iii) **EXTENSION METHODS**

(a) Targeting and reaching special groups/areas (women farmers, young farmers, marginal areas, etc.)
(b) Innovative extension methods/techniques (e.g. mini-demonstrations)
(c) Increased use of group approaches that are more cost-effective in diffusion of messages
(d) Better training materials, more visual presentations, use of slides, etc.

(iv) **FUNDING AND FINANCIAL MANAGEMENT**

(a) Extension funding is frequently inadequate for the recurrent costs of the system
(b) Poor remuneration of staff can result in high staff turnover
(c) Sustainability of extension systems after donor financing has finished

(v) **TRAINING AND HUMAN RESOURCE MANAGEMENT**

(a) Lack of well-trained SMS & field staff cadres
(b) The capacity of SMSSs to provide in-service training
(c) Need to differentiate more between in-service education and training (i.e. between capacity building and skill development)
(d) Training of trainers
(e) Personnel management issues

(vi) **OTHER AGRICULTURE SERVICES**

(a) Credit: extension’s role and responsibility
(b) Markets and marketing information: extension’s role
(c) Relationship with private sector extension services

(vii) **REACHING RURAL WOMEN AND SPECIAL GROUPS**
(a) Female extension agents may need retraining in agricultural production technologies
(b) Reaching rural women through groups
(d) "Mainstreaming" as against separate programs for women
(e) Recruiting and training more women in all agricultural services, including research and extension
(f) Sensitizing male extension personnel (managers, supervisors, SMSs and the field staff) to the problems of women farmers
(g) Organizing extension programs/courses around women's time availability

(viii) GETTING FARMERS ORGANIZED

(a) Increasing small farmer access to credit, inputs, markets and technology through farmer groups and organizations
(b) Increasing farmer participation in extension program development and priority setting
(c) Greater participation of small-scale farmers and women farmers in technology generation and modification through on-farm trials

(ix) ENVIRONMENT, NATURAL RESOURCE MANAGEMENT, AND SUSTAINABLE TECHNOLOGY

(a) Better integration of environmental concerns in extension messages
(b) Using farmers' knowledge in developing sustainable technologies

Dr. Bagchee pointed out that there were obviously many encouraging features in the performance of reformed extension services. But the task of providing integrated extension services (using the same field staff to disseminate information on field crops, livestock, horticulture, and fisheries, etc.) required a level of coordination and cooperation among several government departments which appeared quite difficult to achieve. Bringing about attitudinal change in bureaucracies is not easy. The working groups should discuss, in greater detail, methods to break down the bureaucratic defensive positions. Other highlights of the debate with operational implications for the extension programs were as follows:

(i) Countries were finding the conduct of fortnightly and monthly training programs problematic for two reasons: lack of funds and the absence of new messages to be given. To resolve the first, efforts must be made to release budgets for recurrent costs on time. To avoid repetitiveness in the training sessions, greater attention is required both to the content and methodologies of these training sessions.

(ii) Several countries were experimenting with reaching farmers in groups, and with other indigenous methods, to get a multiplier effect and these were welcome innovations.
A few countries, such as Zambia, Tanzania and Nigeria, had, in order to strengthen interdisciplinary approaches, introduced a farming systems approach in agricultural research; and the operational links being established between FSR and extension would be interesting to follow.

The reluctance of extension agents—both men and women—to live in the rural areas with poor communication and education facilities was mentioned. But the solution to this problem does not seem to be to create another cadre of less trained staff below the extension agents' cadre to do the frontline work in the remote areas, but to equip the extension agents so that they would find professional fulfillment in improving the life of the rural communities they serve.

The number of subjects to be brought into the 'integrated' extension system should depend on what mix of activities the local farmers were engaged in, not on any artificial exercise seeking to merge all the branches of agriculture into one.

Speaking generally, Dr. Bagchee observed that good extension systems seem to be those that have paid attention to the particular socio-economic milieu in which they operate, had clarified roles and established smooth coordination between the concerned agencies and farmers. It was also true that despite high literacy rates among farmers in Mauritius, or the efforts to put out extension pamphlets in Tanzania, there was still considerable need for personal interaction between the extension agent and the farmer.

IV. Conclusions and Recommendations of the Working Groups

After the discussion of the country reports, the participants went into four working groups for more in-depth analysis of the chosen themes. Their conclusions were again discussed at the plenary, and the recommendations adopted were:

**GROUP A - MANAGEMENT**

Agricultural policies should stress the critical importance of extension services in agricultural development.

Efforts should be made to strengthen linkages and define roles among allied organizations, within and outside the Ministry of Agriculture, which play complementary roles to extension services.

High priority should be given to the allocation and timely release of funds to extension field staff.

Efforts should continue to privatize other agricultural services, especially the distribution of fertilizer and seeds.
(v) Field-level management should be strengthened through the provision of relevant training, guidance and recognition of its role.

(vi) Supervisory staff should be trained not only in supervisory but also in technical skills and should be provided adequate facilities to carry out their duties.

(vii) M&E staff should be trained in relevant skills and be given logistical support and suitable equipment.

GROUP B - TRAINING

(i) Training sessions should be practical, participatory and oriented to problem-solving, rather than based on a "delivery of information" approach.

(ii) There should be closer interaction and cooperation between agricultural universities, research organizations and extension workers in developing appropriate curricula for agricultural training.

(iii) There should be collaborative training programs between extension and research services and the agricultural universities.

(iv) There is need to review and restructure the training curriculum in Agricultural Training Colleges and Universities to reflect the changing requirements in the field.

(v) An African regional extension documentation and training centre should be established to acquire, compile, develop and disseminate training materials and "train trainers" in the areas of extension methodology, management and training.

(vi) A scheme of service incentives should be established that recognizes and rewards superior performance, and that provides opportunities for in-service education and training aimed at professional development.

(vii) A deliberate policy should be implemented to increase the training and hiring of women extension workers.

GROUP C - TECHNOLOGY AND R/E LINKAGES

(i) Government policy should be to coordinate donors to lend support to the national programs of research and extension.

(ii) Donors should coordinate their efforts to support national programs and plans for agricultural research and extension.

(iii) An integral part of the technology generation process must be on-farm research involving research scientists, extensionists and farmers.
(iv) Each country should critically review its research, extension and farmer linkages to ensure that relevant and useful technologies are made available to farmers and other users.

(v) Joint monitoring and evaluation of research and extension should be a continuous process to ensure the relevance of the efforts of each service to problems in the field.

(vi) Existing technology (developed either by farmers themselves or research scientists) should always be taken into account in the process of technology generation/development.

**GROUP D - SPECIAL TARGET CATEGORIES**

(i) There should be a continuous diagnosis of the specific situation and needs of special target groups (women farmers, rural youth, farmers in marginal areas, nomads and handicapped farmers) to permit a deliberate involvement of these groups in extension activities.

(ii) Research should ensure the development of appropriate technologies that serve the specific needs of these special target categories.

(iii) There should be a deliberate policy to train more women in agriculture and to employ more women in agricultural services.

(iv) Extension systems, local leaders, spouses and mass media should be sensitized on the multiple roles and needs of special target groups and be encouraged to serve their specific needs.

(v) There should be continuous programs for the orientation and training of extension staff in the socio-cultural and economic aspects of the communities in which they work.

(vi) Activities to better serve the needs of women farmers should be made part of the mainstream activities of extension and research in order to ensure the optimum use of resources and to avoid the marginalization of women's issues.

(vii) Extension systems should develop indicators for monitoring and evaluation the degree to which special target categories are being served.

**V. Comments at the Concluding Session**

On the closing day, the organizers asked the resource persons for their observations on the week-long discussions. Dr. Bagchee observed that the workshop had clearly brought out the concern, in countries which had reorganized extension services on the T&Visit pattern to improve the quality of the services. The improvements envisaged included more accurate targeting of the beneficiaries and assured funding and
financial support for extension activities in the field. She also commented on the very high level of discussions, and on the very fruitful sharing of ideas.

Dr. Swanson recapitulated the main issues that were raised at the workshop. He hoped that some form of a permanent networking arrangement or a training centre would be put in place soon so that such useful exchanges do not take place only intermittently.

Mr. Moyo of Tanzania and Mr. Oyebanji of Nigeria had been nominated by the participants to speak on their behalf, giving their views on the workshop deliberations. Mr. Moyo spoke of the excellent arrangements and the very congenial atmosphere which had facilitated a real sharing of ideas and experiences. Mr. Oyebanji distilled the following major problems and six main recommendations emanating from this workshop.

(i) The first problem is inadequate funding. While all governments should make the required financial allocations, the Bank for its part should agree to finance even the operational costs of the extension programs.

(ii) To strengthen training (identified in the Evenson studies also as a crucial element to make extension effective) there is need for much more training both within and outside the country, including long term courses. Both national governments and the Bank should support such efforts.

(iii) Extension has now put pressure on research to provide technologies suitable for the farmers. All countries need to strengthen their agricultural research systems. The Bank should support the NARS in starting/strengthening FSR.

(iv) Outreach to women, youth and nomadic farmers needs to be strengthened. National extension services should design programs to enhance the productivity of these groups.

(v) Uncoordinated, multiple extension systems create duplication and confusion. There is a need to harmonize and coordinate all extension efforts (including NGO projects having extension components) into a unified extension service.

(vi) Extension delivery in Africa can be improved if the countries can share their experiences, and learn from their various successes and failures. There is a real need for an African regional centre that can function as a databank for exchange of information on extension activities, provide implementation assistance, and document the indigenous experimentation of the farmers, evaluate the impact of extension and act as a training institute. World Bank support is required for this proposal to materialize.
Mr. E.V.K. Jaycox, Vice President of the World Bank addressed the participants on the concluding day. He stated that Africa's economic development remained a very high priority in the Bank. In order to achieve economic growth of about 4 percent per annum in Africa, the Long Term Perspective Study (LTPS) published by the World Bank in 1989 had indicated that agriculture must grow at 4 percent from the current levels of about 2 percent or even less in most countries. The Bank was committed to giving long-term support to extension, and had taken several initiatives such as ASI and SPAAR to strengthen various institutions and services in the agriculture sector: research, credit, delivery systems for seed, fertilizers etc.

Responding to some of the discussions in the workshop, Mr. Jaycox further stated that the centrality of women's role in African agriculture and the need to focus on it for the rapid development of agriculture was accepted by the Bank. He mentioned that there was an upcoming major event planned regarding women in agriculture in Africa. He was happy to see the very positive conclusions regarding T&V extension resulting from Professor Evenson's studies and remarked that this sophisticated evaluation study should be widely disseminated.

Mr. Jaycox agreed with the need expressed at the workshop for more networking among the extension managers in Africa. "Your success stories should be captured in a monthly newsletter, and be available in both languages - French and English." He said as regards a more or less permanent training centre, one of the training institutions within the countries could be treated as a regional facility and the Bank would support such a move. With respect to a CGIAR-sponsored international or regional centre, he remarked the proposal needs to be worked out in detail after which it could be looked at.
The Africa Extension Workshop for Francophone countries was held at Abidjan, Cote d'Ivoire. Staff from the following countries participated: Cote d'Ivoire, Cameroon, the Central African Republic, Guinea, Togo, Benin, Equatorial Guinea, Burundi, Madagascar, Rwanda, Zaire, Burkina Faso, Mali, Niger, Senegal and Chad.

These sixteen countries were represented, at the workshop, by their senior managers of extension and research. There were also some invited speakers at the meeting: the opening speech was made by the Cote d'Ivoire Minister of Agriculture, Mr. Kouassii Konan Lambert. The World Bank's Vice-President for Africa, Mr. E.V.K. Jaycox, addressed the participants. Mr. Kevin Cleaver, Director, Technical Department, Africa Region, presented a paper on "A Strategy for the Development of Sub-Saharan Africa." Professor R. Evenson presented a study on the "Economic Evaluation of Extension Profitability."

I. Invited Speakers

In his opening speech, the Cote d'Ivoire Minister of Agriculture, the Honorable Mr. Kouassii Konan Lambert, stressed the essential role of agricultural extension. He summarized the history of extension in his country. Although the existing extension systems had been effective in servicing farmers cultivating specific crops, these had nonetheless proved very expensive. Cote d'Ivoire now wished to withdraw support from these other initiatives and reorganize agricultural back-up services more efficiently. This involves training and commitment of personnel so as to make this approach permanent, sustainable and profitable. He also stressed that this effort at developing agriculture can only be successful if commodity prices were profitable for the farmers, and said that he was concerned about decreasing world market prices for African agricultural commodities.

Mr. E.V.K. Jaycox, Vice-President, Africa Region, the World Bank, confirmed that Africa remained a high priority for the Bank. He emphasized the important role of agriculture in the economic development of Africa, and pointed out that annual growth in agriculture needed to be doubled, from 2 percent to 4 percent. In order to reach this difficult but achievable objective, the Bank is counting on agricultural research and extension to make a major contribution. African agriculture is in need of constantly improving technologies. He also mentioned that the Bank's support to extension was a long-term commitment. He suggested that extension managers should remind their governments that, since they considered agricultural extension to be a top priority, they should provide the necessary funding for it.

In his opinion, Structural Adjustment Programs are useful and efficient, but he acknowledged that they cause strains during the period of transition. Consequently,
social services need to be developed in order to mitigate the negative effects on the poor. He mentioned that the Bank would be soon publishing a study of structural adjustment programs in Africa. Early indicators showed that in recent years, in twelve African countries, there has been a GDP growth rate higher than the population growth rate.

Mr. Kevin Cleaver, Director, Technical Department, Africa Region, the World Bank, presented the Bank strategy for the development of Sub-Saharan Africa, which envisages a long-term annual agricultural growth of 4 percent. This is ambitious but possible in the context of a new strategy which has five main elements: creation of an economic and political environment supportive of agriculture; generation of new agricultural technology; development of farmer organizations and participation; development of physical and social infrastructure; and improved natural resource management.

Mr. Cleaver listed three challenges for research and extension: increase farmer participation in research and extension management; improve technological levels by promoting innovative technologies wherever these may be found; integrate natural resource management (which often calls for collective action).

Professor R. Evenson, and his team, presented the findings from the evaluation studies done on T&V extension services in Kenya and Burkina Faso. The study pointed out that the marginal returns to investments in extension were extremely high—350 percent for Kenya and 190 percent for Burkina Faso. Professor Evenson explained the statistical methodologies used in this study, and concluded that on the basis of results obtained, it would seem that extension alone could increase annual growth rate of agriculture at around 2 percent. He acknowledged that his economic evaluation was solely quantitative and that further research would enable qualitative variables to be included.

II. The Country Reports

The participating countries gave presentations of their experiences in running their national agricultural extension services - the historical background to the process of reorganizing extension on the lines of Training and Visit Management; their successes in this effort; and the constraints that the system faced.

As each country’s report was discussed in the plenary meetings, the participants raised many interesting issues, and shared their own experiences. At the end of each session, the resource persons, Mrs. A. Bagchee, Messrs. M. Bagouro and J. Brossier, made comments and highlighted the main aspects, both common and divergent, emanating from the country reports. Mr. Brossier pointed out that from the country presentations, it would appear that the main, common constraints faced by extension in Francophone Africa pertained to:

(i) Human resource management, particularly inadequacy regarding ways to motivate and train staff.
Financial management and administration, particularly:
(a) the reluctant support of certain financial donors;
(b) institutional constraints;
(c) financial, administrative, farm credit and marketing constraints;
(d) difficulties in making available counterpart funds

That is the reason for the request from several countries for the timely release of operational funds by the governments and the payment of recurrent costs as well by the Bank.

Inadequate choice of technologies, which are not relevant to farmers’ needs.

Mr. Bagouro underlined a number of common trends in the thinking and experiences of the different countries in the process of reorganizing their agricultural services.

An analysis was first done of the extension systems in place before the introduction of T&V and such analysis showed inadequate results from the earlier systems.

This sparked a desire in these countries for reorganizing agricultural services, particularly extension to respond to the changed socio-economic environment in post-colonial Africa.

Pilot schemes introduced prior to the launching of national extension programs are very helpful in defining the outline of the extension program and ways of collaborating between partner agencies. This phase must be neither eliminated nor reduced.

The current absence of common indices by which to measure the success or otherwise of extension services, calls for the development of consistent norms which can be used to judge the results obtained by national extension programs in the different countries.

Mr. Bagouro also underlined the necessity of maintaining the fundamental principles of the professional T&V extension system, especially those concerning periodic training and regular visits to farmers. He disapproved of the excessive flexibility allowed by managers in adapting and blending T&V extension with other methods and systems. In his opinion, the World Bank should consider training a second generation of managers for national agricultural extension programs.

Mrs. Bagchee remarked that in the Abidjan workshop, the country presentations and debates had underlined the importance of environmental problems to a greater degree than had been the case at the Accra workshop. Issues of natural resource management were brought up several times during the discussions in Abidjan, and there was even a suggestion that this difficult problem could be dealt with in depth.
by a separate working group. However, the participants eventually decided to discuss this topic along with issues of technology generation and farmer-extension-research relations. The concerned working group would, therefore, have to discuss extensively as to what sort of coordination or collaboration needed to be set up between programs for extension and natural resource management.

Mrs. Bagchee also pointed out that, in order to improve extension services, it is necessary that they reach all farmers, including women farmers. Therefore, the specific constraints of female farmers need to be identified in order to improve their productivity. Extension agents and researchers need to be trained to assess the constraints of women farmers, and to define an approach which reaches extension services to them.

In order to demonstrate the necessity of reaching women farmers, Mrs. Bagchee pointed out some of the conclusions of a study done by Katrine Saito on the role of women in African agriculture.6

(i) Traditional farming systems (and the separation into men’s plots and women’s plots, peculiar to African agriculture) are slowly disappearing.

(ii) Women farmers are increasingly numerous (women account for 70 percent of food production).

(iii) Women work one and a half times as much as men.

(iv) Women have limited access to inputs and other agricultural services, including extension (in Kenya alone the resultant loss of female productivity is 20 percent).

(v) Women need energy-saving technology most of all, e.g. small machines (1 percent of tasks on African farms are mechanized, 10 percent are performed by animal power and 89 percent by hand: women’s fields are worked by hand more than men’s fields).

Given these facts, the recommendations for extension are:

(i) Increase knowledge of women’s tasks.
(ii) Advice should be given according to the needs of different categories of farmers.
(iii) Improve communications between male extension agents and women farmers.
(iv) Ensure the participation of women farmers in monitoring and evaluating extension.

Naturally, certain social, cultural or religious problems may prevent extension services from reaching women, but extension should give priority to this task. Just as extension chooses to give priority to small-scale, marginal or poor farmers, it should now
focus on the needs of women farmers. Mrs. Bagchee remarked that success in this field should not be assessed only by the number of female extension agents or the number of female contact farmers, but by the number of pertinent technologies recommended to them and the number of women farmers who adopt them.

III. Conclusions and Recommendations of Working Groups

After the discussion of country reports, the participants divided themselves into four Working Groups for more detailed deliberations on the chosen themes. The conclusions reached by the working groups were again debated in plenary sessions, and adopted as follows:

**GROUP A: INSTITUTIONAL ORGANIZATION AND EXTENSION PROGRAM MANAGEMENT**

The working group concluded that although much effort had gone into restructuring national extension services on the lines of the T&V system, which had already proved efficient, problems remained, such as the dispersion of efforts at extension between different departments, difficulties in coordination, a diversity of approaches to extension, and insufficient collaboration between NGO and state extension departments. It also noted that the administrative and financial management of the projects suffered from too much centralization, excessive internal and external procedures to obtain release of funds and reimbursements, losses due to currency fluctuations, and rigid financing conditionalities.

In the light of the above analysis, the group suggested:

(i) The definition of a national agricultural extension strategy.

(ii) Harmonization of all other approaches with the state approach.

(iii) Definition of the role and tasks of extension agents.

(iv) Establishment of a framework for continuous collaboration between NGO's, state departments and extension services.

(v) Extension agents should be made to concentrate on the tasks for which they are responsible.

(vi) Flexibility may be allowed in implementing the T&V approach, as long as certain basic principles were respected, such as a single line of administration, regular training, reinforcement of research-extension links, adherence to the extension program timetable.

(vii) Attention should be paid to developing a practical method of planning to ensure that all categories of farmers are covered; that personnel are adequately trained and equipped; that field extension agents take into
account local languages and dialects; and that rational staff deployment and effective supervision are ensured.

(viii) As far as financial administration is concerned, there should be greater decentralization and simplification of procedures.

(ix) There is need for in-service training for administrative and financial personnel.

(x) The Bank should consider bearing a fixed portion of the operating costs for the length of the program, instead of expecting countries to take responsibility for a progressively increasing share of the costs ending up at 100 percent of the costs by the end of the 5 or 7 years project period.

(xi) The Bank should guarantee finance for extension in the medium to long-term.

(xii) All countries should introduce a system of financial incentives, given the difficult working conditions of extension field staff.

(xiii) The project agreements should include clauses that would minimize the risks of distorting costs and cost-sharing responsibilities, because of changes in currency exchange parities.

(xiv) The implementing countries should ensure better planning of public expenditures and more rational allocation of funds, demonstrating the priority to be given to agriculture.

(xv) The Bank should be more flexible with regard to conditionalities, when it comes to financing extension programs and should avoid the freezing or suspension of disbursements.

**GROUP B: HUMAN RESOURCE MANAGEMENT AND TRAINING**

On the subject of human resource management, the group observed that much needs to be done in order to evolve rational personnel policies which encourage specialization and professionalism, and to have transparent policies regarding postings, promotions and incentives.

On the subject of training, the group observed that often there were not enough scientists to conduct the training workshops, there was a shortage of qualified researchers in certain specialized fields, and often, the researchers lacked training skills. In several countries, it was difficult to hold fortnightly and monthly training workshops as scheduled, due to various constraints, including logistical problems. Further, after training, there was no guarantee that the trained persons would be allowed to continue
working in the areas for which they had been trained; they were often then posted elsewhere.

In view of these observations, the group made the following recommendations:

(i) Extension services should have competent personnel who are not shifted frequently.

(ii) Service Rules and Conditions for extension agents should be framed, or if existing, clearly spelled out according to the general framework for government service.

(iii) Extension services should be able to recruit extra technical personnel when needed to guarantee agricultural performance.

(iv) Staff promotions should be determined through professional exams.

(v) Each country should rationalize its salary and incentives structure so that the various categories of extension agents nation-wide receive similar remuneration.

(vi) A system of paying a salary bonus for good extension work in the field, should be set up to provide extension agents with motivation. Thought should be given on how to assess results in the field and measure their efficiency.

(vii) The schedule of fortnightly and monthly workshops should be adhered to.

(viii) A practical guide to agricultural extension training, based on current African experience, needs to be drafted.

(ix) High priority should be given to the training of managers in order to improve their qualifications.

(x) The creation of an African agricultural extension network should be urgently considered so that individual countries can exchange their experiences, as they did at this workshop.

(xi) Similarly, attention should be given to the upgrading of training centres in several countries that are in existence, but are insufficiently used.

(xii) Another urgent requirement is the development of a training program for teachers and human resource managers.

(xii) The researchers and technical staff participating in the various workshops should be given training as trainers.
According to the Working Group, the reasons necessitating close links between research and extension are the development of technologies that are both relevant and easy to adopt, and the creation of synergy, indispensable for better utilization of available resources, the common goal being to serve the farmer. The group remarked that these links need to follow a triangular pattern.

The group identified the present weaknesses of the relationship between the parties involved. Researchers are less interested in solving farmers’ problems than in coming up with technical breakthroughs emanating from fundamental research. The extension agents view themselves primarily as one-way carriers of new technologies, ignoring their role as carriers, too, of important feedback of farmers’ problems to the scientists.

Researchers and extensionists have difficulty in communicating well with each other, because of differences in their background and training. Also, the lack of funds for transport inhibits frequent visits between research and extension agents. They do not undertake joint diagnostic tours as often as desirable. Researchers are demotivated by the lack of professional recognition and praise from their peers when they attend to solving farmers’ problems.

Research programs are often based in particular sub-sectors and do not use a systems approach incorporating natural resource management and technology development that could improve the working conditions of all farmers (including young people and women).

Natural resource management issues are not adequately addressed by either research or extension. Often, research and extension structures lack the competence necessary to study the farmer’s environment. Where this competence does exist, it does not always receive the political and financial support necessary to launch an actual natural resource management program. Consequently, not enough concern is being shown for promoting sustainable agriculture.

In the light of the above considerations, the working group made the following recommendations:
(i) All research and extension institutions should involve farmers to a greater extent in the identification of constraints, and in the development, transfer and evaluation of agricultural technology.

(ii) Decision-makers, researchers and extension agents should concertedly try to reinforce collaboration between research and extension institutions at all staff levels. When possible, it would be preferable for these meetings with farmers to take place in their fields.

(iii) The identification, elaboration, monitoring and evaluation of research programs should be carried out by regional committees composed of researchers, extension agents, farmer groups and individual farmers, NGO representatives, and other people involved in the rural development of the area. These programs should be discussed by multidisciplinary teams, and then integrated into a national program after checking that they are consistent with both national policy and the specific objectives of farmers in the areas concerned.

(iv) There is a need to increase the number of "systems" researchers and train other researchers as much as possible in the systems approach.

(v) Stress the socio-economic aspects of research and extension programs.

(vi) Research and extension should take natural resource management into account so as to generate technologies that would be appropriate for individual farms, as well as for community and inter-community owned resources. Governments should take steps to define a general policy which gives more importance to natural resource management so as to encourage sustainable agriculture.

(vii) The nutritional problems of the farming community should be taken into consideration by research and extension.

(viii) Service rules and conditions for researchers and extension agents should be codified to ensure stability, professional career development, and to increase motivation.

(ix) Researchers should be evaluated and rewarded, not only for the number of published works, but also for their contribution to the development and diffusion of technologies that solve farmers’ problems in the field.

(x) Similarly, extension agents should be motivated and rewarded on the basis of good work done in the field.
A systematic inventory should be prepared of traditional technologies and local knowledge so as to create a data bank and thus to use them, and further refine them, in research and extension programs.

Steps should be taken to encourage individuals and private institutions to take an interest in research and extension work.

Greater contact and collaboration should be developed by extension with the back-up agricultural services, such as credit, cooperatives, input supply and marketing agencies.

Continual training for research and extension staff, particularly for subject matter specialists should be encouraged, so as to ensure a high quality of technical support to field extension.

GROUP D: FARMER PARTICIPATION AND ORGANIZATION

The group emphasized that extension services in the rural areas have to deal with the following partners: individual farmers, contact groups, farmers' cooperatives, production and service groups, "tontines", other support/social groups, women's groups, and unions. The working group further observed that extension agents did not always have, or maintain, a close and mutually rewarding relationship with many of these groups. This is for several reasons. The field extension workers usually select the members of the contact groups without knowing, or adequately appreciating pre-existing farmers' groups, their common concerns and interests. Many farmers, particularly women farmers, do not participate much in the contact groups. The women, particularly, do not come to the meetings, or do not participate much in the discussions even when they are present. Production and service groups have, in fact, a lot of relevance for extension activities, for they usually deal with input supply, marketing, transportation and storage, credit and investments. Similarly, the unions constitute a counter-power and their influence is on the increase among farmers and decision-makers, and so extension agents should take note of this fact. In view of all this, the Group recommended:

(i) While forming contact groups, the extension agents should take historical and sociological aspects into consideration. They should give more importance to factors such as common interests, proximity of fields, livestock production units with a common concern, etc.

(ii) Field extension workers should be trained in specific techniques so that they are able to carry out an effective diagnosis and categorize farming interests, select the optimum size of the contact groups (eight to ten members), and pay adequate attention to the proper spatial distribution of these contact groups, so as to maximize the demonstration effect.
(iii) Most important, the extension workers must remember that the main purpose of the exercise is to facilitate adoption of technologies, not the formation of the group as such. Group creation is just one way of reaching this objective.

(iv) Farmers' training must include the women and youths working on the farm as well as the men. Efforts should, therefore, be made to include women and youth in the contact groups.

(v) The extension agents should be trained to constitute mixed contact groups (comprising men and women farmers), or if necessary, special women's contact groups.

(vi) Besides involving women farmers in the contact groups, extension agents should have technologies to disseminate that would increase women's farm productivity (there is a need, for example, for small farm tools).

(vii) There is a need to increase the admission of women into functional literacy programs.

(viii) Steps should be taken to increase the recruitment of women into the extension services, and give them training to do field extension work. Posts of Subject Matter Specialists for gender-related issues are needed, and should be continued.

(ix) Similarly, there is a need to systematize the training of rural youth, analyze their requirements, and have Subject Matter Specialists examine their constraints and potential.

(x) When contact groups are being created, it is important for extension agents to include pre-existing social groups (self-help groups, for example).

(xi) Extension agents should identify social groups and develop ways of collaborating with them.

(xii) With regard to production and service groups, field extension staff must clearly separate extension tasks from the task of organizing farmers. But extension staff may be advised that it is easier to succeed in forming farmers' groups, when they are brought together around a common concern, relevant new technology, or common interest. Extension workers should set up discussions with such production and service groups, wherever they exist.
As far as the unions are concerned, extension service managers should contact them, keep them informed of extension’s work, and consult them.

On the whole, it is true that farmers, in most countries, are not as involved as they should be in different extension activities, in the assessment of technologies to be promoted, in work planning, and in monitoring and evaluating the results of extension. Therefore, in order to involve farmers more closely with extension:

(a) methods of working with them should be formalized.
(b) extension agents should be trained in these methods.
(c) all parties involved should be associated in the different extension activities (contact groups, extension agents, specialists in organizing farmers, technical specialists, researchers, etc.)

All implementing countries should carefully study how to involve all concerned parties in extension, as this is the key to greater extension efficiency.

IV. Closing Session

Mr. Daniel Benor addressed the participants in the closing session and expressed satisfaction with the quality of the workshop and the excellent proposals made. He stressed that T&V extension is an evolving system which should be gradually improved; its simple guidelines included: professional competence, a single national extension system, training and regular visits of agents, and so on.

He pointed out that the best way to judge the efficiency of the T&V system is in the fields: on-farm visits are necessary. Professor Evenson’s evaluation is most useful for those who do not have the time to visit farmers, and it will soon be presented to the World Bank’s Board of Directors.

He mentioned that on several occasions, he had underlined the fact that the extension programs should be handled nationally, and not by the Bank, or by any other donors or NGO’s. In his opinion the T&V system is like democracy, it is not perfect but it is the best we have. He mentioned that the extension programs supported by the Bank cover practically all the countries of Sub-Saharan Africa and would receive financial support from the Bank for more than fifteen years.

Michel Aklamavo, from Benin, was chosen by his colleagues to give some impressions of the workshop, and propose a vote of thanks on behalf of the different national delegations. Bernard Bohe-Gui, on behalf of the host country, said how satisfied he was with the quality of the workshop.

At the end of the closing session, some of the participants expressed a desire to know what had transpired in the Accra workshop attended by representatives from the
Anglophone countries in the previous week. Accordingly, Mrs. Bagchee offered a brief outline comparing the discussions in Abidjan with those held in Accra the previous week. She pointed out the points of convergence as well as the differences in emphases and perspectives between the two gatherings.
## Annex 3: Status of Current Extension Projects in Africa

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of Project</th>
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**Notes**


2. Wherever Bank/IDA lending for extension is not apparent from the Staff Appraisal Reports, it is estimated taking into account factors such as, the percentage of Bank/IDA lending for the project, foreign exchange costs of extension and the pattern of financing of recurrent costs.

3. Extension projects in Mauritania and Zimbabwe are expected to be approved shortly.

4. Pilot extension operations have started in Chad out of funds from ongoing projects.

**Legend**

- @ Redesigned Kaduna Project
- # Projected
- 1/ Free standing extension projects
- 2/ Extension + Research projects
- 3/ Agricultural Services
- 4/ Area development projects
- 5/ Livestock projects with significant extension component
- 6/ Tree crops/commodities
- 7/ Women in Development

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Annex 4: List of Participants and Resource Persons — Accra

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- OPERATING
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NOVEMBER 1993
Endnotes

1. In fact, small-scale T&V initiatives in Africa had started earlier; and the first national project based on T&V was "Somalia - Agricultural Extension and Management Training Project" which became effective in 1980. But largely due to the lack of agreement among donors on the extension approach to be adopted under the project, there were serious delays in the extension start-up.


4. In this paper, the term "African countries" refers to countries in Sub-Saharan Africa.

5. Now a part of the Environmentally Sustainable Development Division, Technical Department, Africa Region (AFTES).


11. All dollars are US dollars unless otherwise specified.


13. These are all cotton/cocoa parastatals that provide marketing, inputs and extension services.


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