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**PERFORMANCE AUDIT REPORT**

**INDIA**

**THIRD NATIONAL AGRICULTURAL EXTENSION PROJECT (NAEP III)  
(CREDIT 1754-IN)**

June 30, 1998

*Operations Evaluation Department*

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## Currency Equivalents

*Currency Unit = Indian Rupees (Rs.)*

1986 (SAR)	US\$1.00	Rs. 13.00
1995 (Completion)	US\$1.00	Rs. 31.37
1998 (Audit)	US\$1.00	Rs. 38.90

## Abbreviations and Acronyms

AEO	agricultural extension officer
DASP	Diversified Agricultural Support Project (UP)
DOA	Department of Agriculture
DOE	Division of Extension (of Ministry of Agriculture, Government of India)
GOI	Government of India
HP	State of Himachal Pradesh
ICAR	Indian Council of Agricultural Research
ICR	Implementation Completion Report (of the Bank regional office with borrower input)
IDA	International Development Association
M&E	monitoring and evaluation
MANAGE	National Institute of Agricultural Extension Management, Hyderabad, Andhra Pradesh
NAEP	National Agricultural Extension Project
NARP	National Agricultural Research Project
NATP	National Agricultural Technology Project
OED	Operations Evaluation Department
SAR	Staff Appraisal Report
SAU	State Agricultural University
SDR	Special Drawing Right
SMS	subject matter specialist
SSP	Special Sub-Project
T&V	training and visit (system of agricultural extension)
UP	State of Uttar Pradesh
VEW/VEO	village extension worker/officer

## Fiscal Year

Government: April 1 - March 31

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Washington, D.C. 20433  
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Office of the Director-General  
Operations Evaluation

June 30, 1998

**MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT**

**SUBJECT: Performance Audit Report on India (Credit 1754-IN) Third National Agricultural Extension Project**

Attached is the Performance Audit Report prepared by the Operations Evaluation Department (OED) on the above project. The IDA credit to the Government of India for US\$85 million equivalent was approved in January 1987 and closed in March 1995 after a one-year extension. A total of US\$18.4 million was canceled after US\$77.71 million was disbursed, but an additional disbursement of US\$16.65 million was made from Credit 1523-IN (NAEP I).

The project institutionalized the training and visit (T&V) system of agricultural extension in the states of Uttar Pradesh (UP) and Himachal Pradesh (HP) and strengthened it in Assam. Sub-projects supported expansion of the extension system in three districts of Punjab in the state of Bihar. Other sub-projects improved the institutional capability to train extension staff in improved technologies for priority commodities and in extension management. Several other sub-projects improved communication capabilities and production of media materials for extension in many states, provided overseas training for extension trainers, provided a new institute for training in extension management, and helped the central government review aspects of the extension system.

As a result of the project, most of the states now have agricultural extension services with better organizational structure, better technical and administrative control, and improved facilities and equipment, the exception being Bihar where for political and administrative reasons implementation had to be abandoned. There has been some improvement in staff mobility and there is a better trained and more knowledgeable staff, and improved links with research. However, the institutional, managerial, and operational effectiveness and efficiency of agricultural extension services could still be improved. In these areas improvements will be necessary to ensure impact on farm production and household incomes in coming decades, and to do so in a socially efficient manner.

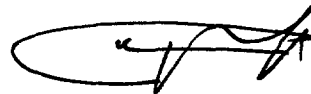
Following completion of the project, the governments of UP and Assam expressed a commitment to maintain the basic institutional arrangement and operational model of the T&V agricultural extension system. This has proved difficult because of financial constraints and shortage of key skills. As well, there has been insufficient attention to diversification and renewal of messages to respond to the changing needs of farmers. For example, extension services have paid too little attention to soil and water management issues. HP has moved to break up the system by separating agricultural and horticultural extension activities and terminating regular staff-training programs. Reduced regular budget allocations after 1995 for all state departments of agriculture (DOAs) and continuing serious problems with staff vacancies in UP and HP indicate considerable uncertainty about maintaining the agricultural extension system as originally planned. Such adaptive behavior directed to a leaner system is quite rational and in line with changes occurring in many other parts of the world.

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The strong commitment of state DOAs was important in establishing and strengthening agricultural extension services. The regular training of field extension staff, farm visits, and closer research-extension relationships delivered the anticipated enhancement of staff and farmer knowledge and adoption by farmers of improved agricultural technologies and practices. But problems with staff quality and recruitment, staff mobility, the civil works program, and project financing contributed to delays in project implementation and in successful completion of the institutional system. These problems continue. More generally, the project design emphasized the establishment of institutions and operational modes. It gave much less emphasis to project impacts in fields and households. Weaknesses were clearly apparent in the monitoring and evaluation system introduced and thus in its effectiveness in providing appropriate information to management. Unfortunately, the project made insufficient use of the provision for the special studies on the extension system—despite growing awareness that the T&V system introduced was too rigidly structured. In combination with the emerging state-funding constraints, this led to some positive modifications of the system by the state DOAs aimed at improving operational efficiency and effectiveness and financial sustainability. The most impressive case observed was the linking of field extension workers to the Extension Education Department of the Punjab Agricultural University.

Overall, the outcome of the project is now rated by OED as marginally unsatisfactory, because so few of the project initiatives are going to last. Sustainability is still seen as unlikely considering the prevailing negative views and fiscal impossibility of maintaining the intended system in most of the project states. Bank performance is rated as satisfactory, although only marginally so because of the slowness in addressing the structural issues in the system of extension being implemented.

While supervision was relatively intensive, it was insufficiently aware of the institutional inadequacies of the model being implemented. There are several reasons for this. First, the implementing agencies and the government of India had a strong desire to stay “true” to the Staff Appraisal Report and its commitment to the T&V model. This commitment continues to this day; so the original “selling” of the model has been remarkably persuasive and enduring. Second, and a key lesson of the project, Bank staff may have been insufficiently imaginative and bold in seeking changes in project design that would have been more responsive to the emerging situation. Currently, however, India is once again debating how best to reform the extension systems. Pilot operations in projects recently approved are addressing new, participatory, decentralized, and pluralized approaches to the delivery of extension services and strengthened linkages to both research and the private sector supplying farm inputs and services.



Attachment

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This report was prepared by Jock Anderson, who audited the project April 6–24, 1998. Chris Gibbs was the pre-mission reviewer. Peer reviewers of the post-mission draft were Madhur Gautam (OEDST) and Gershon Feder (DECRG). William Hurlbut (OEDST) provided editorial guidance. Maisha Hyman provided administrative support.

## Principal Ratings

	<i>ICR</i>	<i>ICR Review</i>	<i>Audit</i>
Outcome	Partially satisfactory	Marginally satisfactory	Marginally unsatisfactory
Sustainability	Uncertain	Unlikely	Unlikely
Institutional Development	Substantial	Modest	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Not rated	Satisfactory

## Key Staff Responsible

	<i>Task Manager</i>	<i>Division Chief</i>	<i>Country Director</i>
Appraisal	M. Macklin	C. Robless	R. Cheetham
Midterm	M. Maklin	J. Wijand	H. Vergin
Completion	A. Seth	S. Barghouti	R. Drysdale



## **Preface**

This is a Performance Audit Report (PAR) of the Third National Agricultural Extension Project (NAEP III) in India (Cr. 1754-IN). The International Development Association (IDA) credit for US\$85 million was approved on January 20, 1987, and became effective on January 5, 1988. It was originally scheduled for completion in March 1994 but was extended one year to March 31, 1995.

The PAR is based on the Implementation Completion Report (ICR) prepared by the South Asia Regional Office with the assistance of the Food and Agriculture Organization (FAO) Cooperative Programme and submitted to the Board on December 26, 1996; the government's comment on the ICR; the President's Report; the credit documents; review of the project files; and discussions with Bank staff. An Operations Evaluation Department (OED) mission visited India in April 1998 to discuss with the Ministry of Agriculture and relevant state agencies the effectiveness of the Bank's assistance and project execution. The cooperation of staff of these agencies and the resident mission, and the valuable assistance rendered in preparing this report, are gratefully acknowledged.

The ICR provides a detailed account of most project operations and of the performance of the Bank and most of the project executing authorities. The current report expands the discussion of lessons to be learned.

In a Mission wrap-up meeting held during a Review Workshop on Innovations in Technology Dissemination (component of NATP) at MANAGE in Hyderabad on April 24 with Dr. Rita Sharma, Joint Secretary, Extension Division, MOA and Dr. V.V. Sadamate, Joint Commissioner (Extension Management, MOA), there was broad agreement on the draft findings of the audit mission. It was agreed that the conceptual structures and proposed pilot operations of both the DASP for UP (loan package with the Board in May 1998) and of the technology transfer components of NATP (approved in March 1998) reflect many of the lessons of NAEP III. What to do with the resources created in NAEP III that are not now being well used, however, is an urgent policy question. A study of options could be carried out under the auspices of NATP and perhaps a follow-on project on human-resources for agriculture could be identified, thereby addressing the matter of a plan for future operations that was not addressed in the ICR. Following standard OED procedures, copies of the draft were sent to the government for comment. The comments received are reproduced as Annex B.





## **1. Introduction**

1.1 NAEP III was the fifteenth in a series of IDA-assisted projects dating from 1974 that aimed to reorganize and strengthen the agricultural extension effort in India. This was done primarily through the introduction of the training and visit (T&V) system of organizing the public-sector agricultural extension services. NAEP III was to complete IDA assistance to the development of extension to the 17 largest Indian states. IDA had previously supported two predecessor projects (NAEP I and NAEP II, credits 1523-IN and 1569-IN, respectively).

1.2 As the climax of a sequence of national operations designed for comprehensive implementation of T&V, NAEP III provides an opportunity to observe implementation and fine-tuning of arrangements for extension in a mature system. This should provide lessons for extension operations in other situations, particularly in sub-Saharan Africa, where the length of experience with T&V extension has generally been much less, and the overall experience thus far has been sufficiently problematic to warrant careful consideration of implementation lessons from elsewhere.

## 2. Project Objectives and Design

2.1 The main objectives of NAEP III were as follows:

- (a) introduce the T&V system of agricultural extension in Himachal Pradesh (HP) and Eastern Uttar Pradesh (UP);
- (b) strengthen the reorganized extension system introduced in Assam under the Assam Agricultural Development Project (Cr. 728-IN); and
- (c) assist in the implementation of Special Sub-Projects (SSPs) on extension-related activities at both central and state levels.

The latter was to be handled through the replenishment of the SSP fund established in the Ministry of Agriculture under NAEP I. Funds were provided for construction of offices, residential and training facilities, incremental staff, purchase of vehicles and equipment, and operating expenses. These were to support and improve extension services and adaptive research; staff training; monitoring and evaluation (M&E) and information unit activities; further development of the capacity of the Division of Extension (DOE) of the Government of India (GOI) as a national coordinating and technical assistance agency; extension development in western UP and a limited number of districts in the states of Punjab and Bihar; and training facilities and training programs in a number of small states and educational and research institutions throughout India.

2.2 The project supported the Bank's two-decade-long country strategy of ensuring a uniform approach to agricultural extension by completing introduction of the T&V system to most of India's states. The project was judged during preparation to respond well to the borrower's circumstances and the long-standing development priority for the agricultural sector of increasing agricultural production, achieving self-sufficiency in foodgrains, and increasing farm household and rural incomes. The need for flexibility in the approach to extension was recognized at appraisal and hence the inclusion of the SSPs to facilitate experimentation. As the ICR (para. 36) notes, however, a more critical analysis of previous Bank-supported projects may have indicated the "emergent deficiencies in the standard 'T&V blueprint' as proposed." Whether the project concept *is* relevant, and how well the project now matches the borrower's circumstances are questions at the heart of this report.

### 3. Implementation

3.1 The project institutionalized the T&V system of extension largely as planned in the states of Assam, UP, and HP. In UP the project established the system in phases. In the first phase it added eight eastern districts in 1985/86, eight more in 1986/87, and nine in 1991/92. In the second phase it added 31 western districts in 1991/92, leaving only eight hill districts outside the T&V system. In HP, the T&V system was established as planned in all seven agricultural districts and five horticultural districts throughout the state. The SSPs in the states of Bihar and Punjab aimed to expand the T&V system to a further 11 districts in Bihar and three districts in Punjab. A single line of technical and administrative command was established for extension activities with staff stationed at zone/division, district, subdivision/block, cluster/circle, and village level. Under the T&V system, village extension workers (VEWs) were responsible for advising selected contact farmers (8–10 per village) in up to 15 villages, representing a total farm household population of between 600 and 1,200, with the lowest ratio in HP and the highest in UP. Technical support was provided by agricultural extension officers (AEOs) at cluster level and subject matter specialists (SMSs) at subdivision and district level.

3.2 **Special Sub-Projects.** The main purpose of the SSPs was to develop the training capabilities of the states. They were also to guide the states in extension methods and help them establish close linkages with research. Special efforts were made to improve extension and training management through the provision of more responsive and advanced training in management and communications for supervisory staff. NAEP III supported three main types of SSPs: *State Sector SSPs* (UP, Bihar, and Punjab), *Central Sector SSPs*, and *Centrally Sponsored SSPs*. The audit mission examined SSPs in UP and Punjab as the ICR never adequately dealt with them (or other SSPs).<sup>1</sup>

3.3 *Central Sector SSPs* included assistance to do the following:

- (a) establish interdisciplinary teams for reviewing and implementing ongoing central and state sector agricultural extension programs;
- (b) establish an internal consultancy program under which experts would study specific aspects of agricultural extension;
- (c) organize annual national seminars/workshops to discuss policies and programs related to extension management, training, and farm information;
- (d) establish training programs for extension personnel to undertake higher degrees and selected short-course training, both in India and overseas; and
- (e) establish computer network facilities in DOE and states to assist M&E activities.

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1. Paragraphs 50 and 56 of the ICR (Report No. 16156, December 9, 1996).

3.4 *Centrally Sponsored SSPs* included project assistance to do the following:

- (a) fund institutional strengthening, including development of training facilities at 15 Advanced Training Centers to serve as centers of excellence at State Agricultural Universities (SAUs), Indian Council for Agricultural Research (ICAR), and central institutions; establishment of the National Institute of Agricultural Extension Management (MANAGE), Hyderabad, AP, to train senior extension staff in extension management; and the establishment or strengthening of four Extension Education Institutes to provide training for middle-level extension staff in extension teaching methods and communication techniques;
- (b) provide assistance to states/SAUs for strengthening extension and training, including provision of communication and training support for personnel in seven states of the North-Eastern Region, including overseas training and preparation of video films and procurement of video vans, and strengthening of training and information units in two states and five union territories for training, strengthening of information units, and supply of vehicles; and
- (c) a variety of other training and review activities, largely in the states, detailed in the ICR. In the following the discussion is focused on the two states on which the audit mission was able to gather most information.

3.5 **Uttar Pradesh.** The diagnosis of systemic inefficiencies led to changes to the original T&V institutional blueprint in western UP. These included: (a) abolition of the relatively junior AEO positions; (b) employment of university graduates as VEWs to raise professional standards at the front line; (c) alignment of VEW command areas with the new decentralized administrative arrangements being introduced (*Nyaya Panchayat*), thus expanding the physical area of command and number of farmers directly served; (d) placement of increased numbers of SMSs at district level only rather than at subdivisional level; and (e) merging the extension and input supply (fertilizers and pesticides) functions of the Department of Agriculture (DOA) into one. The Government of Uttar Pradesh considered that this provided a more efficient system as it removed an additional level of managerial control, necessarily placed the SMSs in closer contact with VEWs and farmers, and provided a more cost-effective extension system. However, there was a high level of unfilled VEW positions throughout the project, so a large number of villages did not receive any extension advice directly, although some trickle-down of technology seemingly occurred through input suppliers.

3.6 **Himachal Pradesh.** A project design feature that was judged key to the success of the project in HP was the combining of the field command for both agricultural and horticultural services under an Additional Director of Agriculture (Extension) under whom there were Joint Directors for Agriculture and Horticulture who supervised extension activities in seven and five districts, respectively. At field level, this arrangement worked satisfactorily as a means of providing a coordinated, broad-based service, according to the respective managers consulted.<sup>2</sup> There were many VEW vacancies, however, so many villages received little extension advice.

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2. This consultation with the audit mission took place at a meeting attended by several officials from HP and elsewhere at MANAGE, Hyderabad.

3.7 The present technology transfer system is still oriented toward packages of technology that can only be adopted by the larger-scale farmers who have sufficient cash resources, particularly for those farmers changing to cash cropping. All states have moved, to varying degrees, toward a more broad-based extension service to include advice on livestock, horticulture, agroforestry, and sericulture. This increased emphasis on promoting cash crops and other commodities was claimed by the ICR mission (seemingly based on anecdotal evidence) to have resulted in significant improvements in farm household incomes, which in turn allowed farmers to diversify their farm production. This focus, however, has seemingly been at the expense of assisting smaller-scale farmers with limited land and cash resources, who are still mainly involved in traditional (subsistence) agricultural crop production.

3.8 **General.** The regular training sessions introduced under the T&V system have, managers claim, improved the knowledge of both SMSs and VEWs and advice given to farmers, but the states have come to different conclusions regarding the required frequency of regular training. In UP, the system was introduced but not maintained as proposed because of a shortage of operational funds. In Assam and HP, training for VEWs was adjusted to a monthly schedule, and in HP training for SMSs changed from two days per month to bimonthly for only one day in 1994 and to quarterly training in 1995, cost-saving adjustments that might usefully have been taken up elsewhere. DOA staff training facilities currently intended for pre-service and induction training are under-used, suggesting a degree of over-investment. There is considerable scope remaining to improve the course curriculum to train extension staff in aspects of farm management, farm development planning, and simple financial analysis of production systems.

3.9 Given the length and depth of experience with agricultural extension in India, it is natural to look to this country for current lessons in design and implementation of extension, including T&V. The tendency to adopt this system uncritically has been documented in several parts of the world, and the need for adaptation to particular circumstances has been long acknowledged, even in India. It is therefore disappointing to see that the implementation of T&V in the states covered most recently under NAEP III has departed little from the traditional model used in the previous 14 major state experiences. Despite wide understanding of the limitations of inflexibility and of a top-down approach to information dissemination, people have had a strong tendency to follow original model prescriptions rigidly.

3.10 The single most concerning aspect of NAEP III is its failure to undertake more of the critical studies that had been planned. The wisdom of those who framed the Staff Appraisal Report (SAR) and its scheme of studies to identify more efficacious planning and implementation of T&V is notable, but the failure to conduct the studies (with the important exception noted in paragraph 4.5) is most regrettable. Accordingly, the audit mission focused on the topics that such studies were intended to cover.

3.11 The whole issue of monitoring and evaluation of extension was certainly in the minds of the authors of the SAR. This must be the most basic first step toward reforming implementation of T&V and indeed of any other type of extension. It will not come easily or necessarily cheaply, but given the large amounts of public expenditure involved in such systems these matters must be addressed much more profoundly in the future than they have in the past. Again, it is natural to look to the Indian experience for insight in these matters.

3.12 The idea of making systems more responsive to farmers' real needs has been around for a long time and is even part of the core rhetoric of T&V. To provide farmers opportunities for

self-determination is evidently difficult for public agencies. This seems especially the case when farmers are confronting civil servants who put primacy upon administrative arrangements that can be coordinated from the top. Experience with participatory development activities elsewhere in India, however, is sufficiently favorable to demand that such opportunities be exploited in the context of public extension systems. In fact, the progressive decentralization of government to local levels provides opportunities for greater community control over extension budgets and thus for the development of a more demand-driven service. In fact, such community-oriented directions and private initiatives are strongly advocated in the new book/report discussed in paragraph 4.5 below.

3.13 Discussion with officials at both national and state levels of the public extension service indicates an in-principle (partially) open mind toward permitting private entities to substitute for some of the previously supplied public services. Were this to come about, private sector employment opportunities would rise for agents skilled in extension methods and with good experience in public extension systems. The responsiveness of such private activities to farmers' needs is built in, and has been found to work well in other countries where private alternatives have been encouraged. Clearly there is much scope for such development in the burgeoning Indian agricultural sector.

## 4. Outcomes

4.1 This discussion of outcomes focuses on specific aspects of institutional development, rather than the attributed strong and probably valuable productivity effects that were the focus of the ICR. In fact, the ICR is not as helpful in assessing the productivity effects as it implies—because it handles the question of attribution unconvincingly. Causality of the implied effects of extension on, say, changing crop yields, is not well argued, let alone well quantified. Such crop yields are the measures of partial productivity given most attention in the time-series regression analyses reported in the ICR. As argued below in paragraph 4.4, if a fuller and more “critical” analysis could have been made as part of a more comprehensive evaluation system in the project, the M&E opportunities presented in NAEP III would have been better exploited and the evaluative task of the ICR and other internal reviews perhaps better accomplished. A pertinent “critical” analysis would have gone to some lengths to recognize the effects of the many other (possibly complementary) factors beyond extension that have contributed to crop-yield growth over the life of the project.

4.2 **Research-Extension Linkages.** Linkages were strengthened through joint meetings of SAU (research) and DOA (extension) staff at zonal (bimonthly) and seasonal (biannual) workshops. In addition, research and extension staff have made joint field visits to meet with farmers, define problems, and provide solutions. Regular training of SMSs by university staff provided a further point of interaction. The SAUs in HP also provided a large amount of written information to extension staff on recommended technologies and practices. Joint diagnostic team also sometimes visited farms in areas where a particularly severe problem in production had occurred. The SAUs have established agroecological zonal research stations in each state with support of the Bank-funded National Agricultural Research Projects (NARP I and II). Each year research stations, in collaboration with extension staff, have undertaken hundreds of on-farm trials to good effect for all concerned. The DOAs in all states have Field Trial Stations undertaking adaptive research and seed/sapling production. In UP it was proposed that these trial stations should be phased out (in fact, they were handed over to the Rural Development Department) and replaced with on-farm trials coordinating with SAUs, but this is being implemented very slowly because of funding constraints. The forums established to strengthen research-extension linkages have, unfortunately, mostly weakened over time, and remain in need of attention. Fortunately, the Agricultural Science Centers (Krish Vigyan Kendras) in each state do serve to fill some of the gaps. Since these Centers are relatively high-cost in terms of unit staff costs and are centrally funded through ICAR, however, their sustainability is in question.

4.3 **Monitoring and Evaluation.** M&E units in all states have undertaken regular surveys and published seasonal reports. They have also undertaken studies on topics of special interest. The M&E surveys and data analysis have been done according to the guidelines but not very imaginatively. The M&E products seemed to the audit mission to have been little used in managerial decisions, however.<sup>3</sup> In UP the M&E units were handicapped in their analysis and

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3. The Borrower corrects this impression in paragraph 3 of the appended comments on this PAR.



presentation of data by the central DOE's failure to bring on line a computer *network* it had established for the purpose in 1993.<sup>4</sup>

**4.4 Special Studies.** The project had envisioned a special evaluation study—to be undertaken by Kanpur SAU—that would rigorously evaluate the efficacy of the T&V system in UP by comparing agricultural development in districts with and without the system. Despite a detailed summary of method and timetable for the study in the SAR, however, the study was never undertaken and no satisfactory explanation for its cancellation was ever given. At the request of GOI, Allahabad University undertook in 1994 a much smaller independent study (Resource Constraints to Adoption of Recommendations under the T&V System of Extension) in one district, but the outcome of the study did not usefully inform the state system. There still remains great opportunity to evaluate the effectiveness of the T&V system of agricultural extension in UP and elsewhere by comparing farmer knowledge and practices and farm productivity and incomes in adjacent groups, which have had or not had extension agents during the project. Such work is demanding because it must involve more than simply comparing before- and after-project crop yields (such as has been done in the Punjab project districts, impressive though these changes have been) when all else is not equal over time (such as changing prices and input-supply and infrastructural-maintenance conditions). Minimally, teasing out the particular contribution of extension (and of research, policy change, intensification, etc.) requires a multi-factor analysis of the joint effect of all the changed inputs and services.).

**4.5** One special study (of the 12 completed) of particular significance was, in fact, accomplished with impressive cogency, and it surfaced at the end of the audit mission. MANAGE had been commissioned by MOA during NAEP III to report on participatory approaches to extension. The report has just been published,<sup>5</sup> although at the time of the mission, had not yet been circulated. The volume deals well with many of the issues raised in this PAR, and it is to be hoped it will prove influential in the coming debates on reform of extension in India. Although small relative to the Indian extension system as a whole, MANAGE is an impressive entity. If it can link to a number of State-level "Mini-MANAGEs" in coming years there is a real opportunity for getting new thinking about more efficient organizational arrangements for extension in a wide cross-section of the managers of public and private extension in India. Meantime, the high course fees being charged by MANAGE are proving difficult to be met by many states that could usefully use its services.

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4. As the Borrower makes clear in paragraph 8 of the appended comments (and the audit agrees), computerization supported by the project did help make more efficient the timely tabulation and reporting of extension data.

5. MANAGE (1997), *Farmers' Participation in Agricultural Research and Extension Systems*, Concept Publishing, New Delhi for National Institute of Agricultural Extension Management (coordinated by S.K. Arora), Hyderabad.

## 5. Ratings

5.1 The ICR rated project outcome as (partially) satisfactory, institutional development as substantial, and sustainability as uncertain. OED, in its review of the ICR, rated outcome as only marginally satisfactory because, although the project put the T&V system in place largely but not quite as planned in the six states, the relevance of this is questionable and is indeed being questioned by the various governments in India. Moreover, the studies planned in the project, which could have been so useful in future extension planning, were neither timely nor effective. The SSPs were largely stand-alone operations that were not conventional project elements but probably served a useful purpose in some cases, such as the creation of MANAGE on a seemingly sustainable albeit changed basis. The OED review downgraded sustainability to unlikely because the capacity of the states to sustain such large and costly systems is considered to be low. OED disagreed with the ICR rating of institutional development as substantial, and rated it modest because of the missed opportunities for more wide-ranging reforms and for greater enhancement of cost efficiency. OED at that point agreed with the rating of Bank performance as satisfactory.

5.2 This PAR reduces OED's previous ratings. The marginally satisfactory outcome is now seen to be unsatisfactory, though marginally so, because so few of the major project initiatives are going to last. Furthermore, the sustainability is now seen to be even more unlikely considering the increasingly negative views about trying to maintain the earlier system in most of the project states. We reconfirm our earlier judgment that institutional development was only modest.

5.3 In finding the T&V system as promulgated in India to be seriously flawed, insufficient in coverage of farming communities, excessively top-down, and financially unsustainable, the ICR itself offered important lessons, although it was generous in its ratings. These lessons included a need for managerial de-layering, greater mobility of field staff, greater use of more cost-effective media materials, and reducing numbers of staff positions in extension services to levels that governments can afford sustainably; the necessity to improve monitoring and evaluation; and the virtue of fresh thinking to encourage more pluralistic approaches to the provision of extension services. The latter lesson relates strongly to contemporary perceptions of effective public extension systems, which, if used as the frame of reference for assessing the relevance of this operation and for rating its outcome, would have seen it clearly as a less than satisfactory project.

5.4 The audit mission spent considerable time exploring farmer attitudes toward cost-recovery or cost-sharing for what are currently publicly provided extension services. The "findings" of willingness to pay were mixed. The low end of the spectrum was zero, where there was a strong belief that farmers were already "paying" for their research and extension services through their product prices being kept at unrealistically low levels, or a feeling that it was simply "impossible" for resource poor farmers to be able to afford to pay anything at all. The positive range went from an intermediate position of thinking it would be reasonable and feasible for several small-scale farmers to join together and each pay a small sum (say, 40 cents US) to sponsor each desired visit of an extension worker to their village, to an occasional expression by relatively well-off farmers of their willingness to meet the full cost of personally tailored

extension advice. It was generally agreed that when new, high-valued, albeit risky, enterprises were being contemplated or introduced attitudes to contributing would be much more positive.

5.5 The ICR did not address the lack of a plan for future operation, presumably because plans were up in the air pending preparation of Bank-supported operations in the pipeline. In fact, most states are still struggling with how best to proceed with extension services in the future. Punjab, for one, appears to be reverting to its earlier mix of university-based advisory services alongside the government extension officer system that links closely to it. Individual states are developing some concrete proposals, and where these can be linked to a new operation such as the Diversified Agricultural Support Project in UP, progress is likely to be rapid in the (six) selected project pilot areas. Elsewhere, the systems may languish for quite some time given the tight fiscal constraints that are confining activities.

### **Bank Performance**

5.6 The audit mission found sufficient evidence that the design and implementation of the project were less than ideal. OED believes that the main burden of responsibility for this should fall on the Bank, as it was continuing its long program of steering India down an agricultural extension path that was increasingly recognized as problematic. Bank performance is satisfactory but only marginally so. The Bank is moving to a more focused effort in bringing the best knowledge to bear in its operations, so that in future supervision of projects such as this one there should be more ready opportunity to help adjust project design to better and more quickly reflect changed knowledge situations.

### **Borrower Performance**

5.7 The ICR judged borrower performance to be partially satisfactory because covenants were incompletely fulfilled, but notes that the borrower implemented the model as best it could under difficult circumstances. The PAR agrees with the ICR judgment, and rates borrower performance as satisfactory, albeit marginally so.

## 6. Findings and Issues

6.1 The main finding reaffirmed that the design of the extension system as promulgated by the Bank in India is seriously flawed. While the project has probably contributed to increases in food production and perhaps also to some improvements in farm household incomes, the system has not provided sufficiently widespread coverage of the farming community, is based on a top-down system of packaged messages to farmers, does not have the anticipated dissemination of information from contact farmers to fellow farmers, and, being both staff- and cost-intensive, is financially unsustainable.<sup>6</sup> Government will have to consider alternative means of reducing staffing levels and different operational approaches and other opportunities for cost savings, to ensure a more cost-effective, responsive, and quality service to farmers.

6.2 The project states have acknowledged and are now addressing more vigorously items identified earlier in appraisal concerning the need for further improvements in extension services. Future objectives for development of extension services include policies to further promote a client-oriented approach to extension, to curtail non-extension activities by extension staff, to improve staff mobility, to improve broad-based advice and coordination between relevant line agencies, to provide specific training programs for rural women, to better use electronic and other media for promoting extension information, to improve research-extension linkages, and to promote greater involvement of NGOs in DOA extension programs. They will also have to explore more vigorously the means for giving rural communities greater control over the extension services.

6.3 The main lessons learned relate to the need for further improvement to public extension services and facilitating a pluralization of financing and of providers. All state DOEs variously modified the T&V agricultural extension system introduced, usually in small ways, to economize on expenditures. Important institutional and operational modifications that have implications for further development of extension services in India include: modifying the hierarchical structure of the T&V system by reducing supervisory layers of staffing, placing SMSs in closer contact with farmers (Phase II in UP); and adopting more of a farmer-client approach. Others, such as reducing the frequency of regular training for SMSs and AEOs/VEWs (especially in Assam and HP) have yet to be assessed as having beneficial value. Careful monitoring will be needed to track the consequences of these changes for VEW performance.

6.4 Far too little thinking has yet gone into the introduction of pilot partial cost-recovery schemes, of a search for new providers, and of a greater degree of community control over extension, to induce better accountability. Many variants of financing extension are possible and there is a growing literature of the diverse experiences around the world from which to identify innovative approaches that might be worth experimenting with in India. Some of the arrangements that have been found useful include: direct contracts between governments or

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6. These issues were encountered in other Bank-supported extension projects. See D.L. Purcell, and J.R. Anderson (1997), *Agricultural Extension and Research: Achievements and Problems in National Systems*, A World Bank Operations Evaluation Study, World Bank, Washington, DC.

municipalities and private consultants or consulting firms; direct agreements between farmers (or groups of farmers) and extensionist (or extension volunteer in the concepts advocated on page 106 of the 1997 MANAGE book cited in footnote 3), where payment is based on crop or profit share; charging on a time-cost basis for certain services; or some combination of options such as these. Group arrangements would seem to suit the typical Indian village scene well and would overcome the free-rider problems of just some villagers seeking to buy extension information. State-level extension services could work with, say, block-level community-based organizations to set up the general contractual framework in which such locally defined arrangements could be developed. New Bank-supported operations in UP and the six pilot states of the National Agricultural Technology Project have the flexibility to initiate novel approaches to extension servicing, beyond the activities already underway to better link agricultural extension to research.

6.5 The lack of staff mobility is still severely constraining operations of field extension staff. The state governments provided inadequate policy support for the proposed personal loans scheme for staff to purchase private vehicles for public use. More emphasis should have been given in project design to improving management capacity, promoting operational decentralization and planning, improving staff supervision and performance, funding special studies to evaluate project impact, ensuring that M&E activities would provide appropriate feedback to management, ensuring more participatory involvement of farmers in diagnosis of problems and opportunities, and providing appropriate incentives for staff to improve their individual performance.

6.6 There is a growing need to exploit media (radio, television, and video and printed materials) and modern communication systems more fully in the dissemination of technical information. Progress in this domain for many more remote areas must await further development of infrastructure such as more reliable power supply to support proliferation of television. Limited telephone service similarly impede farmers expressing their requirements directly to extension offices and officers.

6.7 The methods used for monitoring and evaluation of the extension systems need to be evaluated and appropriate training in data collection and analysis needs to be provided so that M&E units can better assess the operational effectiveness and efficiency of extension, the impact of extension on farming practices, productivity and farm household incomes, the needs for further research, and how best to be "heard" by management and acted upon to result in more efficient system design. That part of an M&E system focused on ground-truthing extension activities and their effects should be more decentralized and more locally specific than has been customary in India. The more analytical, skill-intensive assessment of the quantitative impact of extension will probably have to be done in appropriately staffed central units.

6.8 The inclusion of a component to finance SSPs for the GOI to undertake regular reviews and special studies provided flexibility that allowed the GOI to refine a national perspective on extension development. However, both GOI and the state DOAs made insufficient use of this information, which too often lacked sharp evaluative teeth, to rectify constraints and weaknesses in extension development. The extensive overseas training program, while it may have broadened the outlook of the many personnel sent out, does not seem to have been particularly effective in changing the way government agencies organize extension services.

6.9 The T&V system, as instituted, is staff-intensive, and thus places considerable financial strain on the public purse to maintain the system. This affects staffing levels and availability of

funds for operations, maintenance, and essential capital investment. Governments have to consider means of reducing staffing levels of extension services and other opportunities for cost savings, as well as policies that promote extension partnerships with NGOs, input suppliers, private providers, the mass media, and farmers themselves. This seems realistic at this stage of the evolution of the Indian market economy, although the audit mission found many farmers reluctant to let go of the purely public provision of the extension services they had grown to appreciate. These farmers saw the issue as entangled with the government policies that constrict their earnings through low price ceilings for major food crops. Were these markets to be liberalized, their attitude to contributing to payment for extension advice, as for any other productive input, might well (at least in some of the sampled villages) change.

6.10 But such attitudinal change will not come about without considerable effort to raise public awareness among Indian rural communities of the possibilities, and of what is happening in many other parts of the world in this regard. Clearly, extension in India is at a major crossroads. Whether this turns out to be post-T&V gridlock or a radical shift to a new system of pluralized crossovers will depend on many yet-unresolved matters, some of which are being addressed in new pipeline operations such as the Diversified Agricultural Support Project and National Agricultural Technology Project. But much more active reform is necessary, and given the high salary cost and low productivity of the underfunded elaborate schemes nominally in place, the sooner the respective governments come to grips with the needs and opportunities, the better. The Bank surely has a useful role to play in bringing to the table cogent experience elsewhere, and in advancing the debate through its country dialogue.

**Basic Data Sheet****THIRD NATIONAL AGRICULTURAL EXTENSION PROJECT (CR. 1754-IN)****Key Project Data (amounts in US\$ million)**

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	134.7	125.4	93
Credit amount (Total)	85.0	77.7	91
Additional Credit (Cr. 1523-IN)	—	16.7	
Cancellation	—	18.4	
Economic rate of return	na	na	na

**Cumulative Estimated and Actual Disbursements**

	<i>FY88</i>	<i>FY89</i>	<i>FY90</i>	<i>FY91</i>	<i>FY92</i>	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>
IDA Credit (SDR M)									
Appraisal estimate	6.4	15.0	33.0	53.0	72.0	85.0			
Actual	1.83	5.49	19.49	30.52	40.48	49.19	61.41	75.41	77.71
Actual as % of Appraised	29	37	59	58	56	60	72	89	91

**Staff Inputs (staff weeks)**

	<i>Total</i>
Preparation to Appraisal	57.0
Appraisal	16.9
Negotiations through Board Approval	34.6
Supervision	88.5
Completion	19.0
Total	216.0

a. Completion includes only time used by FAO/CP.

b. Staff inputs not broken down by year in the ICR.

**Project Dates**

	<i>Original</i>	<i>Actual</i>
Initiating memorandum		
Preparation		UP September 1984
Appraisal	December 1984, and March 1985	UP, Assam March 1985 HP May 1985
Negotiations	September 1985	November 1986
Letters of Development Policy	—	—
Board presentation	February 1986	January 20, 1987
Signing	—	June 29, 1987
Effectiveness	—	January 5, 1988
Midterm Review	—	March, May Aug. Dec. 1991
Project Completion	June 30, 1994	April 30, 1996
Credit closing date	March 31, 1994	March 31, 1995

## Mission Data

	Date (month/year)	No. of persons	Staff days in field	Specialized staff skills represented <sup>a</sup>	Performance Rating		Types of Problems <sup>b</sup>	
					Implemen- tation status	Develop- ment status		
Through Appraisal	Mar. 1985 (UP)	1	2	AG, EX	-	-	-	
	Mar. 1985 (Assam)	2	6	AG, EX	-	-	-	
	Feb. 1986 (Bihar SSP)	2	2	EX (2)	-	-	-	
	April 1986 (Bihar SSP)	1	4	EX	-	-	-	
	April 1986 (Bihar SSP)	1	3	EX	-	-	-	
	April 1986 (Bihar SSP)	2	3	EX(2)	-	-	-	
	April 1986 (Bihar SSP)	3	3	EX(2), H	-	-	-	
	May 1986 (Bihar SSP)	3	5	EX(3)	-	-	-	
	Dec. 1986 (Punjab SSP)	6	4	EX(5), AG	-	-	-	
	Appraisal Through Board Approval	June 1985 (UP)	2	9	EX(2)	-	-	-
		Sept. 1985 (UP)	2	6	EX(2)	-	-	-
		Jan. 1986 (Assam)	2	5	EX(2)	-	-	-
		March 1986 (UP)	2	3	EX(2)	-	-	-
April 1986 (Assam)		2	3	EX	-	-	-	
Apr.-May 1986 (Assam)		3	11	-	-	-	-	
Oct. 1986 (UP)		2	4	EX(2)	-	-	-	
Nov. 1986 (UP)		2	5	EX(2)	-	-	-	
Dec. 1986 (Bihar SSP)		1	1	EX	-	-	-	
Jan. 1987 (HP)		1	11	H	-	-	-	
Jan. 1987 (Assam)		2	5	EX(2)	-	-	-	
Jan. 1987 (UP)		2	2	EX(2)	-	-	-	
Supervision		March 1987 (UP)	3	10	EX(3)	-	-	-
		March 1987 (HP)	1	2	EX	-	-	-
		March 1987 (UP)	1	2	EX	-	-	M
	April 1987 (UP)	4	4	EX(3), R	-	-	T	
	May 1987 (Assam)	1	7	EX	-	-	M, T	
	Aug-Sept. 1987 (UP)	2	5	EX(2)	-	-	M, F	
	Sept. 1987 (HP)	2	5	EX, H	-	-	T, M	
	Oct. 1987 (Punjab SSP)	3	5	EX, AG, H	-	-	M	
	Nov. 1987 (Assam)	2	5	EX(2)	-	-	T, M	
	Feb. 1988 (UP)	2	7	EX(2)	-	-	T, M	
	April 1988 (Assam)	2	5	EX(2)	-	-	T, M	
	April 1988 (HP)	2	4	EX(2)	-	-	T, M	
	August 1988 (Bihar SSP)	2	4	EX(2)	-	-	T, M	
August 1988 (UP)	2	6	EX, R	-	-	T, M		
Sept. 1988 (HP)	1	6	EX	-	-	T, M, F		



	Date (month/year)	No. of persons	Staff days in field	Specialized staff skills represented <sup>a</sup>	Performance Rating		Types of Problems <sup>b</sup>
					Implemen- tation status	Develop- ment status	
Supervision (cont.)	Oct. 1988 (Assam)	1	4	EX	-	-	M
	Jan. 1989 (UP)	2	5	EX, R	-	-	T, M, F
	Jan. 1989 (Punjab SSP)	4	5	EX, AG, R, S	-	-	M, F
	June 1989 (HP)	2	5	AG, EN	-	-	T, M, F
	July 1989 (Punjab SSP)	2	5	AG, EN	-	-	M, F
	August 1989 (Bihar SSP)	5	2	EX, R	-	-	T, M, F
	August 1989 (Assam)	4	1	EX	-	-	T, F
	Sept. 1989 (UP)	3	5	EX(2), R	-	-	M
	Jan. 1990 (Punjab SSP)	3	4	EX, R, EN	-	-	M, F
	Jan. 1990 (Bihar SSP)	3	5	EX(2), R	-	-	T, M, F
	Jan.-Feb. 1990 (Assam)	2	5	EX, R	2	2	T
	April 1990 (UP)	2	5	EX, R, AG	2	1	M, F
	April-May 1990 (HP)	3	5	EX	2	2	T, F
	Sept. 1990 (UP)	2	4	EX, R			
	Sept. 1990 (UP)	3	4	EX(2), R			
	Sept. 1990 (Assam)	2	6	AG, R	3	3	F, T, M
	Nov. 1990 (Punjab SSP)	3	5	EX	2	2	T
	Nov. 1990 (HP)	2	4	R	3	1	F, M
	Feb. 1991 (Bihar SSP)	1	5	EX(2)	2	1	
	March 1991 (Assam)	3	5	AG, EX, R	3	2	M, T
	April 1991 (UP)	5	5	EX(2), AG(2), R	2	1	
	Jan. 1992 (Assam)	2	5	EX	3	2	F, M, T
	March 1992 (UP)	2	4	EX, AG	2	1	T
	April 1992 (HP)	2	5	EX, AG	1	1	
	June 1992 (Assam)	3	4	EX	2	1	T
	June 1992 (UP)	1	3	EX	-	-	-
	Sept. 1992 (Punjab SSP)	1	4	AG	2	2	M, T
	Sept.-Oct. 1992 (HP)	1	5	AG, EX	2	1	M, T, F
	March 1993 (Assam)	2	4	EX	2	2	-
	Supervision (cont.)	April 1993 (UP)	1	5	AG, EX	2	2
	July 1993 (HP)	1	3	EX	1	1	M, F
	Oct. 1993 (Assam)	2	5	EX	1	1	
	Dec. 1993 (UP)	2	5	EX	1	1	M, T
	May 1994 (HP)	1	4	EX	1	1	
	Jan. 1995 (Assam)	1	5	EX	1	1	M, T, F
	May 1995 (Assam)	1	3	EX	1	1	M
	June 1995 (HP)	1	3	EX	1	1	M, T
Completion					-	-	-

a. AG=Agriculturalist; AS=Agroindustry Specialist; CS=Cooperative Specialist; DS=Dairy Specialist; EC=Economist; EEC=European Economic Community Staff; FA=Financial Analyst; LP=Livestock Processing Specialist; M&E=Monitoring and Evaluation Specialist; OP=Operations Officer (Senior)

b. F=Financial; M=Management

Rita Sharma  
Joint Secretary (Extn.)



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19th June, 1998

**COMMENTS ON THE PERFORMANCE AUDIT REPORT (PA) OF NAEP-III**

**(CR 1754 - IN )**

The OED Mission visited India in April, 1998 to discuss the effectiveness of the World Bank's assistance and project execution with the Ministry of Agriculture and State agencies. The Performance Audit Report has been examined and the comments of the Directorate of Extension are given as below:

1. The report has rightly pointed out that the T&V system of Agricultural Extension has been strengthened in the States of U.P., H.P. and Assam. Under the Special Sub - Projects the T&V System in the three selected districts of Punjab was somewhat successful but in Bihar the project was by and large totally ineffective. The NAEP-III States now have a more professional agricultural extension service than the earlier approach of community development. As a result of better organisational structure, improved facilities, equipment, staff mobility and effective administrative control. The report has rightly pointed out that there exists great scope for improving the institutional, managerial and operational effectiveness for a more efficient agricultural extension service.
2. After the completion of the project the Government of Uttar Pradesh and Assam have been maintaining the basic institutional arrangement and operational model of T&V. Of course, the large number of extension staff provided in the scheme is becoming difficult for the State Government to maintain. Efforts are, however, been made to make agriculture extension more broad-based and improve the efficiency of the staff. This is also a admitted fact that the budget allocation under the T&V project has been substantially reduced after 1995 and a large number of staff vacancies particularly in U.P. and H.P. has somewhat diluted the effectiveness of the T&V system.
3. It is not correct to say that the M&E system was not effective in providing appropriate information to management and no such study was undertaken by DOE. In this context it may be made clear that the State M&E Units have been regularly conducting M&E surveys both

in Kharif and Rabi season and the reports published and circulated have been used by the Extension Management for correcting weaknesses found in the T&V system. Besides the Directorate of Extension have been conducting Special Studies through various reputed organisations and State Agricultural Universities to evaluate the project impact as also the constraints being experienced during the implementation of T&V. The T&V system has also been constantly reviewed by the Inter-disciplinary Teams deputed by Government of India to the T&V States. These teams indicated deficiencies in implementation of the project and gave helpful and constructive advice to the State Govts. to overcome such problems.

4. Twelve Special Studies on various topics were carried out through various agencies. Besides 53 consultancy studies, to evaluate various components of T&V system were also conducted.
5. It has been rightly pointed out in the Project Appraisal Report (PAR) that some positive modifications have been initiated by the NAEP-III States in the T&V System for improving its operational efficiency. However, in Punjab the PAU have been giving adequate support to the State Governments in respect of research linkages, training and even supply of good quality breeders and foundation seeds. The PAU has also been given good support in the training programmes to the extension functionaries in the State.
6. Following the completion of NAEP-III Project some minor changes have been effected both in U.P. and H.P. due mainly to shortage of funds. The large number of vacancies at a grassroots level has also prompted the States go for group approach rather than internal personal contacts. The scheduled monthly workshops have been made bi-monthly and also reduced its period from two days to one. Similarly the fortnightly training programmes to VEWs have been made monthly. The Government of Himachal Pradesh has even made the monthly workshops as Quarterly Training Programmes. However, the DOE has been sponsoring about 8200 national training courses and off-campus training programmes of short duration which helps the extension functionaries to update their technical knowledge and skills.

7. As per the SAR of NAEP-III an evaluation study was to be conducted by State Agriculture University, Kanpur to study the impact of reformed extension system, however, this could not be undertaken by the SAU, Kanpur since the U.P. Government insisted that the University has not enough expertise to undertake the study and hence it should be assigned to Allahabad University. However, the outcome of the study did not meet the objective since it was undertaken in one district only.
8. It may not be correct to suggest that the DOE had failed to operationalise the computer network established in the T&V States during 1993. Infact the computers provided in the M&E Units of the States helped in quick tabulation, compilation and accurate analysis of data which helped the timely publication of M&E reports in most of the States. The M&E staff were also imparted training in the computers by the NIC on the initiative of DOE. The DOE has been providing adequate support to operationalise the computer network established in the States as and when required by the concerned States.
9. The T&V System has covered about 75 to 80% of the farming community and was being regularly visited by the VEWs and other supervisory staff as per the draft schedule. Therefore, it may not be correct to say that coverage of farming community was insufficient. The mobility of the field staff and cost effective media materials did not have adequate attention under NAEP-III Project. This is being looked after by the State Governments.
10. It is also correct that the NAEP-III Project did not involve the Private Sector for improving extension and training programmes. Also adequate attention was not paid to Hilly, Tribal and disadvantaged areas. During the Ninth Plan period more NGOs are being involved in extension activities. Broad based agricultural extension and information management at various levels for various purposes are being given priority.

## Annex B

11. As regards cost-recovery or cost-sharing in lieu of providing extension services it may be too early to implement this idea under Indian conditions where about 70% of the farmers are small and marginal with weak financial status. However, on a pilot basis, on a project approach, this has been initiated.
12. Future plan will cover wide ranging uncovered gaps observed under earlier projects. The World Bank Projects like DASP in U.P. as also the National Agricultural Technology Project being initiated from June, 1998 is likely to make the extension services more effective for the development of agriculture and allied disciplines.