

India's Tamil Nadu Nutrition Program

Lessons and Issues in Management and Capacity Development

Richard Heaver

November 2002



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Health, Nutrition and Population (HNP) Discussion Paper

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ISBN 1-932126-68-6

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Prepared for the Health, Nutrition and Population Unit, Human Development Network, The World Bank, November, 2002

Abstract: The Tamil Nadu Nutrition Program is one of very few around the world which have reduced malnutrition on a large scale, and over a long period. It did well because it coupled good strategies and strong commitment at the sectoral level with good micro-design at the field level. Success factors included

- intensive sector analysis prior to the program's design, which helped build political and financial commitment to nutrition, as well as a sound technical basis for the program
- careful choice of committed managers, at least during the first ten years
- using paid village level workers, resulting in low drop-outs and high motivation
- well designed recruitment criteria, ensuring that field workers were competent and acceptable to clients
- a carefully planned training and supervision system, which was entirely field rather institution based—a model worth testing in other countries
- a focus on a small number of interventions, tightly targeted on high risk clients, which made field workers' jobs feasible
- an efficient management information system, which provided rapid feedback to clients at the local level, as well as program managers
- involving local communities through information campaigns before the program began, and using women's and children's groups to help with implementation.

But TINP was not an unqualified success, and much can be learned from its weaknesses:

- the commitment and integrity of program management declined substantially after the first ten years: program performance might have suffered less if local communities had been empowered to play a greater role in worker supervision and quality control
- the health referral system never worked well, and more could have been done to identify food insecure families, and enroll them in existing food security programs
- TINP's support systems in nutrition communications, operational research and program evaluation remained weak, because capacity strengthening plans were not developed for them

the Bank failed to carry out analytical work on management and capacity development issues, despite continuing capacity constraints in the nutrition program.

Keywords: Nutrition management; capacity development; development management.

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FOREWORD

Nutrition research has mainly focussed on technical questions, such as which interventions are effective, and with how much impact. Much less attention has been paid to two other important issues—how *cost-effective* different interventions and programs are; and how best to *implement* nutrition programs. As a result, we have a good idea about which nutrition technologies work, but we need to know more about how large scale programs should be designed and managed in different country conditions, and how countries' technical, management and evaluation capacity in nutrition can best be developed. To help fill this knowledge gap, the Bank began a modest work program in nutrition management and capacity development in 2000.

The work program's first products were a general review of issues related to management and capacity development in nutrition, and a case study of management and capacity development lessons from Thailand's national nutrition program. These were published in 2002 as Bank Health Nutrition and Population Discussion Papers. This case study of India's Tamil Nadu Nutrition Program (TINP) is the second in what we hope will be a series of case studies of nutrition programs. We plan to follow it with cases of programs in Africa; with a workshop bringing together the managers of some of the world's effective nutrition programs to debate what management factors led to their impact; and, later on, with a synthesis of experience from the case studies and consultations.

We chose TINP as the second case for several reasons. One was the Bank's close association with the program over 20 years. A second was that its design, management and financing were very different from that of the Thai program, so the cases make a good contrast. Third, since TINP has been absorbed into India's national child development program and no longer exists in its original form, we wanted to review the program while the Bank's files are still accessible, and peoples' memories relatively fresh. And fourth, we believe that TINP has important positive and negative lessons for the design of future programs.

We welcome readers' comments on the substance and methodology of the studies, and also readers' suggestions on other large scale nutrition programs from which the Bank can systematically learn.

Alexander S. Preker

Chief Editor, HNP Publications
World Bank

ACKNOWLEDGEMENTS

This paper was commissioned by the Health, Nutrition and Population Department of the World Bank. Thanks are due to Claudia Rokx, Task Manager, and Milla McLachlan, Nutrition Advisor, for guiding this work, and to the following for their insights on TINP or for commenting on earlier drafts or sections of them: Alan Berg, Jayshree Balachander, Peter Heywood, Anthony Measham, Meera Priyadarshi and Meera Shekar.

The author is grateful to the World Bank for having published the Report as an HNP Discussion Paper.

ACRONYMS

CNC	community nutrition center
CNI	Community Nutrition Instructress
CNS	Community Nutrition Supervisor
CNW	Community Nutrition Worker
CTC	Communications and Training Center
DPH	Department of Public Health
ICDS	Integrated Child Development Services Program
IEC	information, education, communication
MIS	management information system
M&E	monitoring and evaluation
MPHW	Multi-Purpose Health Worker
NMP	Noon Meal Program
OED	Operations Evaluation Department
OR	operational research
PCO	Project Coordination Office
PEM	protein-energy malnutrition
PHC	Primary Health Center
TA	technical assistance
TINP	Tamil Nadu Integrated Nutrition Project
TNNS	Tamil Nadu Nutrition Study
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WCDP	Women and Child Development Project

I. EXECUTIVE SUMMARY

Many community nutrition and health projects have led to big reductions in malnutrition in small areas. TINP, the nutrition program in India's Tamil Nadu state, is one of a very few programs around the world which have had a substantial impact on malnutrition on a large scale (more than 20,000 villages), and over a sustained period. How the program was designed and implemented is therefore of interest to the international nutrition community. TINP's interventions were health and care based, centering on improved primary health care, growth monitoring, nutrition education, and short term supplementary feeding. Previous reviews of the program have focused mainly on determining its impact. This case study is the first to assess TINP's strengths and weaknesses in the areas of management and capacity development, over the 20 year history of the program.

The Bank chose TINP as a contrast to its first nutrition management case study, on Thailand's national nutrition program. Where the Thai program was domestically financed and relied on large numbers of part time volunteer workers at the village level, TINP was part-financed by the Bank, and used a lower density of paid village level workers, working longer hours. Both programs were successful. But though Thailand's program was cheaper, volunteers were not tried in India's nutrition program, and it is unclear whether they would have been as effective in India's cultural environment. In the late 1990s, TINP was merged with India's Integrated Child Development Service program. This has now expanded to national coverage, showing that growth promotion programs based on paid workers are affordable, even by relatively poor countries.

Because TINP's field workers were paid, very few dropped out. The low drop-out rate, coupled with the relatively small size of the field worker cadre, made it economic to provide more pre-service training and a better ratio of supervisors to workers, than is affordable in volunteer-based programs. TINP's pre-service training, in-service training and supervision system was unusual, in that it was entirely field rather institution based—a model worth testing in other countries. It resulted in a highly motivated field worker cadre, and high quality growth promotion work, at least during the first ten years of the program.

But many other factors contributed to TINP's success. Indeed, a key conclusion is that there was no 'magic bullet'. TINP did well because the program got a large number of things right simultaneously, both in terms of strategy and commitment at the sectoral level, and in terms of micro-design at the field level. In addition to a carefully planned training and supervision system, success factors included

- intensive sector analysis prior to the program's design, which helped build political and financial commitment to nutrition, as well as a sound technical basis for the program
- careful choice of committed managers, at least during the first ten years
- well designed field worker recruitment criteria, which ensured that workers were competent, motivated, and acceptable to clients
- a focus on a small number of interventions, tightly targeted on high risk clients, which made field workers' jobs feasible
- an efficient management information system, which provided rapid feedback to clients at the local level, as well as program managers
- involvement of local communities through intensive information campaigns before the program began, and the formation of village level women's and children's groups to help with implementation.

TINP has sometimes been presented as an unqualified success story. But it had several significant weaknesses, from which as much can be learned as from its strengths. First, the commitment and

integrity of program management declined substantially after the first ten years of implementation, as did the quality of governance in the state more generally. While the program probably could not have insulated itself from its environment, its performance might have declined less if local communities been encouraged to play a greater role in worker supervision and quality control. While TINP can fairly be said to have been community based, it never evolved beyond that to community empowerment.

Second, while much effort went into improving the cooperation between nutrition and health services, this succeeded better at the village level than higher up the system; how to get referral systems to work remained an unresolved issue. Also, TINP entirely neglected inter-sectoral cooperation with the state's food security programs—although food insecurity was a significant cause of malnutrition in the State. The initial decision not to fund new food security interventions under the program was probably a wise one, in terms of keeping the program manageable. But more could have been done to use the program's growth monitoring system to identify food insecure families, and make sure they got access to the State's existing food security programs.

Third, while TINP was an institutional development success in terms of building a large and effective service delivery infrastructure with excellent support systems in the areas of training, supervision and management information, other support systems were less good. Institutional support in the areas of nutrition communications, operational research and program evaluation remained weak, because capacity strengthening plans with monitorable progress indicators were not developed for them. There are underlying, unresolved questions about how to design capacity development activities, when these may extend over the lifetimes of several projects; and also about how to get government and aid agency staff to focus on these long term activities, when they are primarily assessed on how well their programs do in service delivery, in the short and medium term.

Lastly, while the first phase of TINP was based on excellent sector analysis done by the Tamil Nadu Government and USAID in the late 1970s, the Bank carried out no formal sector work on nutrition in India until 1998. The study carried out then looked at nutrition policy and financing issues, but neglected issues of management and capacity development. This was despite continuing capacity constraints in the national nutrition program, especially in the areas of evaluation, and in communities' capacity to participate in the program. The conclusion is that the Bank needs to pay more attention to management and institutional issues, in its analytical as well as its project work.

II. INTRODUCTION

A. BACKGROUND AND METHODOLOGY

In a recent review of the World Bank's health, nutrition and population project portfolio, the Bank's Operations Evaluation Department (OED) concluded that more attention needed to be paid to institutional capacity development issues: 'OED has consistently rated institutional development as substantial in only about a quarter of completed health, nutrition and population projects; for FY97/8 this is well below the Bank average of 38%. Institutional impact thus remains the Achilles heel of the HNP portfolio' (World Bank, 1999). A recent internal nutrition portfolio review concluded that the Bank requires 'a well-planned capacity-building effort for client countries over the medium-term, and in the short-term for the Bank, so that it can better assist the client' (World Bank, 2001). A joint review of the Bank's work in nutrition by the Bank and UNICEF also supports the above assessments' conclusions about the importance of management and capacity problems (Gillespie et al. 2001).

In response to these findings, the World Bank has taken some initial steps to improve its work in management and capacity development in nutrition, including

- commissioning a paper defining the main management and capacity development problems and issues (Heaver, 2001)
- cooperating with the International Food Policy Research Institute, UNICEF and other agencies in developing a methodology for assessing capacity constraints in nutrition at the sectoral level (this process is just beginning)
- commissioning case studies of successful nutrition programs, and how they were managed. This is the second nutrition management case study.

The Tamil Nadu Integrated Nutrition Program (TINP) was chosen as a case for several reasons. It appears to have been successful in substantially reducing protein-energy malnutrition (PEM). It has been sustained over a long period. And it operates on a large scale, with over 40,000 employees providing nutrition services from more than 20,000 nutrition centers, serving a population of over 30m people. Although much has been written about TINP, most reports on the program are internal Bank documents, and have focused more on TINP's impact than on how it was managed. There therefore seems to be a place for a published review of the program's approach to management and capacity development. TINP used paid workers at the village level, and has had substantial financial assistance from the World Bank. So TINP also provides a contrast to the first management case study (Heaver and Kachondam, forthcoming), of Thailand's national nutrition program, which was domestically financed and based on volunteers at the community level.

TINP has been a controversial program. Its proponents, in the Bank and outside, have sometimes promoted it as an unalloyed success story and model for other countries, without mentioning that it failed to achieve a number of its planned objectives, and without pointing to aspects of its design and implementation which had serious shortcomings, or which might not be replicable elsewhere. Various critics of TINP have maintained that it was less successful than advertised; that it did not do enough to empower the communities it served; that it relied too much on expensive and perhaps unnecessary food supplements; and that the high cost of this food, plus the use of a paid rather than volunteer labor force at the community level, made the program too expensive and therefore unsustainable. Controversy about

TINP continues, partly because much of what has been written on TINP has not been in the public domain, and partly because shortcomings in successive evaluations of the program have made it difficult to determine exactly what its impact was.

This case study steers a middle path. It argues that TINP does have a number of clear and important positive lessons for other programs; but also that the program's shortcomings and issues provide negative lessons, which are equally interesting to the international nutrition community. The case is accordingly structured in two parts, in an attempt to give an equal balance to lessons, and to unresolved issues. It is a desk review, drawing mainly on the evaluations and mission reports in the files of the World Bank. It has also benefited from discussion with some of those who managed and supervised the program in the Indian government and in the Bank, before it was converted to India's national Integrated Child Development Services (ICDS) model in 1999. Since it looks at the origins and evolution of TINP over a twenty year period, it is primarily a historical document. It has not been vetted or cleared by those currently responsible for Tamil Nadu's nutrition program, and may therefore not reflect their views.

To ensure a consistent approach across countries, the Bank has asked case study authors to focus principally on the key issues defined in 'Improving Nutrition: Issues in Management and Capacity Development' (Heaver, 2001), which provides a tentative conceptual framework for analyzing the management aspects of community nutrition programs. The executive summary of that paper, which outlines these key issues, is attached for convenience at Appendix A. The issues are reflected in the section headings of this case, with one exception: there is no separate section on the role of foreign assistance, since the Bank's role in TINP was so central that it seems best discussed in the context of each of the lessons and issues.

B. THE EVOLUTION OF TINP: AN OVERVIEW

Tamil Nadu's community nutrition program has evolved through three distinct phases, corresponding to the three consecutive World Bank assisted projects which have financed it. The first project, TINP I, ran from 1980 to 1989, and the second, TINP II, from 1990 to the end of 1997. At this point, a decision was taken to convert TINP into the ICDS program, which was already operating in several districts of the state. The third phase of Bank assistance came from the Woman and Child Development Project (WCDP), a project financing ICDS, which began in 1999 and is on-going. In this study, TINP I, TINP II and WCDP are used as the acronyms for the respective time-bound projects, while TINP refers to the Bank-supported nutrition program in general. As explained below, Tamil Nadu has also financed large scale nutrition interventions outside TINP, so that TINP is not synonymous with the state's nutrition program as a whole.

TINP I

The core of TINP I was a growth monitoring, nutrition education and food supplementation program run from Community Nutrition Centers (CNCs) at the village level, and targeted on pregnant and lactating women and on children under three and their mothers. This was a new venture for Tamil Nadu, and so had to be set up from scratch. Under the project, about 9,000 CNCs were opened, each serving about 1,500 people, and in total covering rather less than half the rural area of the state. In addition to the modest costs of establishing the CNCs, which were mostly rented existing buildings, the project financed

- salary costs for one Community Nutrition Worker (CNW) per CNC, together with a Helper who assisted with supplementary feeding, and a network of supervisors and trainers at different levels
- food, vitamin A and iron supplements and deworming drugs
- a training program and an interpersonal and mass media Information, Education and Communication (IEC) program

- a Project Coordination Office (PCO) in the Department of Social Welfare at the state level
- a monitoring and evaluation system.

TINP is often thought of only as a nutrition intervention. But in fact, no less than 43% of TINP I's US\$66m cost was allocated to investments in the health sector, the most important of which were

- constructing, staffing, equipping and running 1,600 Health Sub-Centers, each serving three or four villages, to fill gaps in the state's rural health service infrastructure
- building and running ten centers for training Multi-Purpose Health Workers, who staff the Health Sub-Centers, and establishing field training wings at 39 Primary Health Centers, which are the first line referral facilities for Health Sub-Centers
- providing drugs, vaccines, supplies, vans, jeeps, motorcycles and bicycles for field health staff and their supervisors.

This part of the project was managed on a day to day basis by the state's Department of Public Health (DPH), although the TINP PCO in the Department of Social Welfare (which had a number of managers on deputation from the DPH) retained overall responsibility for project implementation.

TINP II

At the end of TINP I, the state government took over the costs of all the above activities, thus ensuring their sustainability; TINP II financed only new activities over and above those of TINP I. Under TINP II, some important changes to the program's strategies and processes were made, which are summarized in later sections.

With regard to the physical investments financed under TINP II, only about 10% of the project's US\$139m cost was allocated to health, since the rural health service infrastructure in the state was now largely complete; in health, the focus was more on software than hardware. In terms of physical investment on the nutrition side, TINP II had two main thrusts. One was to expand the CNC network, which by the end of the project had gone up from 9,000 to around 18,500, covering about 80% of rural Tamil Nadu; the remaining rural areas were covered by the ICDS program, with assistance from the Swedish International Development Agency.

The second major thrust was to amalgamate the TINP program with the state's Noon Meal Program (NMP), which was also managed by the Department of Social Welfare. The NMP, which served children aged 3-6, had begun in 1982, after the start of TINP I, and by the beginning of TINP II had reached almost full coverage of the state. The amalgamation was aimed at avoiding duplication of nutrition centers in the villages, and involved

- combining the TINP and NMP centers in over 6,000 villages where both programs operated
- adding a CNW to provide TINP services to under three children in about 10,000 NMP centers in parts of the state not covered by TINP I
- developing about 2,000 new combined centers in parts of the state which had not previously been served by either program.

The combined CNCs under TINP II were staffed by a CNW providing TINP services to the under threes and their mothers, and a Community Welfare Organizer, the NMP program worker, providing a noon meal to 4-6 year olds (when the two programs were combined, the target group of the NMP was changed from 3-6 to 4-6, to avoid duplicating services to the three year old age group). The combined programs came to be known as the 'two worker model'—a confusing description, since each combined center also had two other workers helping with food preparation!

TINP I and II were managed from a Project Coordination Office (PCO), located in the state Government's Social Welfare Department, which was divided into four units, responsible respectively for

Nutrition; Communications; Training; and Operations Research and Monitoring. The PCO increased progressively in size as TINP expanded, and by the end of TINP II contained about 80 professional and support staff.

While the physical expansion of TINP went fairly smoothly during the two first projects, the quality of project management varied considerably. In the Bank's view, project management was good during TINP I and during the first year or two of TINP II. But from about 1993 to 1995, "there was a significant fall-off in commitment, integrity and supervision which percolated down to all levels, adversely affecting morale and motivation" (World Bank, 1998). A new TINP II project management team partially redressed some of the resulting problems in the last two years of the project, but overall the Bank rated the management of TINP II as unsatisfactory.

WCDP

At the time TINP I was designed, the ICDS program was in its infancy. But during TINP I, ICDS was adopted by the central government as India's national nutrition program, and by the end of TINP II it had expanded to cover about three quarters of the country. The two programs had different scope (ICDS was tasked with pre-school education as well as nutrition); different organizational structures; and, perhaps most importantly, different strategies for nutrition improvement (see Issue 1). There were also important differences in program financing. ICDS is jointly financed by the central government and the states, with the center picking up the salary costs of the program and the states the food supplementation costs. TINP I and II, on the other hand, were state projects not following what became the national nutrition program model; as a result, Tamil Nadu became the only state in the country not benefitting from central financing for its village nutrition workers.

When subsidized assistance from the World Bank stopped at the end of TINP II, Tamil Nadu was faced with taking on the costs of the 11,000 TINP II CNWs in addition to the 9,000 TINP I workers already on its payroll. In order not to forgo a very substantial central subsidy for all these workers, Tamil Nadu opted to move from the TINP to the ICDS pattern. In staffing terms, this meant a move from the two worker model back to a one worker model, since ICDS has only one worker (again assisted by a helper) to give both nutrition and pre-school education services to the entire 0-6 age group (one reason why ICDS has been much less successful than TINP in reaching the under threes, the age group at highest nutritional risk). It was agreed that this move would be accomplished by attrition, rather than the firing of more than 20,000 village level workers. The majority of village nutrition centers in Tamil Nadu therefore continue, for the time being, to follow the two worker model, with one worker financed by the state and the other by the central government. As workers retire, the ICDS model will be adopted, the central government will continue to finance one worker per center, and the state government's salary costs will gradually be eliminated.

WCDP began in 1999, and provides assistance to ICDS in Kerala, Maharashtra, Rajasthan and Uttar Pradesh, as well as Tamil Nadu. Because Tamil Nadu's nutrition infrastructure is already well developed, Tamil Nadu's share of WCDP was the smallest, at less than 8% of the US\$300m project, and focused more on quality improvement than physical expansion. WCDP's formal mid term evaluation has not yet taken place. But it is already clear that the State's performance has been very unsatisfactory. Almost half way through the project, only 18% of the funds allocated to the State have been spent, and there has been no systematic effort to implement the quality improvement strategy agreed at appraisal. The main reason for this situation appears to be disagreement within the state's Department of Social Welfare about the administrative terms and conditions on which the TINP PCO is to be merged with the ICDS management unit. Arguments about roles, responsibilities and authority have diverted attention from efforts to improve the program.

C. WHAT DID TINP ACHIEVE?

Part of the controversy about TINP has been due to uncertainties about what the program achieved. These arise because of a variety of flaws in successive evaluations of the program. In the case of some interventions, data to measure impact were not collected, so evaluation was impossible. Some evaluation surveys were much delayed; the worst case was the 'mid term' evaluation survey of TINP II, which eventually took place a year before the end of the project. The reliability of the data collection or processing was questionable in this and some other surveys. Throughout the TINP program, there were issues about the validity or absence of controls, which made it difficult to know whether reductions in malnutrition were due to TINP or other factors. Evaluators have therefore had to pick and choose from the more reliable surveys, and to be rather cautious in their conclusions. This section summarizes the Bank's conclusions in evaluating the project.

Success in reducing *severe malnutrition* in the project areas was unambiguous. Independent survey data and project growth monitoring statistics for TINP I (see Chidambaram, 1989 and World Bank, 1994) both indicated that severe malnutrition declined between a third and a half among 6-24 month children, and by about half among 6-60 month children. The figures for the younger children, who did not benefit from the NMP, are independent of any effect from that program, although not from secular trend. In the case of TINP II, project growth monitoring statistics showed a higher decline in severe malnutrition than the independent survey data (see National Institute of Nutrition, 1998 and World Bank, 1998). Taking the independent survey data as the more conservative, severe malnutrition declined by about 44% over a five year period of TINP II.

Reductions in *moderate malnutrition* were much smaller, and well below project targets. By the end of TINP I, moderate malnutrition had come down by only 14% in the first project areas to be developed, and had increased in the areas coming on stream in the second and third phases of the project (World Bank, 1990a). In new areas of TINP II (i.e. areas not covered by TINP I), a 23% reduction in moderate malnutrition was achieved overall (World Bank, 1998). Because the reductions in moderate malnutrition were much lower than the reductions in severe malnutrition, TINP I did not achieve its overall objective of reducing PEM by 50%, and TINP II did not achieve its overall objective of increasing the number of children with either normal nutrition or mild malnutrition by 50% in new project areas and by 35% in existing (i.e. TINP I) project areas.

The fact that neither project achieved its PEM reduction objectives made TINP an easy target for critics. However, with the benefit of hindsight, it is clear that it was the targets themselves rather than the level of achievement which were the problem. As severe malnutrition reduces, moderate malnutrition correspondingly increases in the short run. Where severe malnutrition is high, as it was in Tamil Nadu at that time, moderate malnutrition cannot be expected to go down by as much as severe malnutrition over a five or six year project life. Those who set the targets for TINP I and II did not take adequate account of this. Looking at the reductions in malnutrition independently of the over-ambitious targets, the Bank estimated that malnutrition went down by more than in most other nutrition programs around the world which are regarded as successes.

This conclusion was reached in an evaluation of TINP I by the Bank's Operations Evaluation Department (World Bank, 1994). The evaluation was primarily based on a sample of TINP data from 1100 randomly selected CNCs, provided by an independent researcher, Meera Shekar, at Cornell University. These were stratified into three groups, representing project areas which had been in operation for five, seven and eight years respectively, and the data was analyzed in terms of the internationally accepted NCHS standards (or Z-scores). The evaluation concluded that, in the three areas, malnutrition--defined as weight for age of more than two standard deviations from the NCHS reference standard--had gone down by

between 1.5 and 2.4 percentage points per year, a decline “unprecedented in other parts of India and elsewhere in the world where large scale nutrition interventions have been implemented”.

The issue is therefore not whether malnutrition went down by a large amount, but *how much of the decline could be attributed to TINP*, as opposed to secular trends or other nutrition programs. As critics have pointed out,

- there was a substantial secular decline in malnutrition in both Tamil Nadu and the neighboring state of Kerala during the TINP I and II period;
- the Government and the Bank India Department’s evaluations of TINP I (Chidambaram, 1989 and World Bank 1990a) did an inadequate job of analyzing the with and without project situation (although control blocks were designated for TINP I, how well matched they were was questionable, and they were anyway absorbed into the project after a few years), and
- the evaluation of TINP II by both the Government and the Bank’s India Department (National Institute of Nutrition, 1998 and World Bank, 1998) skirted the question of what caused the impact, while there was no independent evaluation of that project by the OED.

The OED did, however, address the issue of the project’s independent effect in its evaluation of TINP I, and concluded that (i) the impact of other nutrition programs (principally the NMP) probably did not contribute significantly to the overall reduction in malnutrition; and (ii) no more than a quarter to a half of the decline in malnutrition in the project area would likely have occurred in the absence of TINP. TINP’s substantial investment in health should be reiterated here; the ‘TINP effect’ measured in this study is the combined effect of nutrition and health interventions, and not nutrition interventions alone. Because the issue of TINP’s impact is important and controversial, and published materials on it are scarce, the relevant section of the OED analysis is reproduced as Appendix B.

There is no good evaluation of the impact of TINP, independent of secular trends, since TINP I. The most recent independent sample survey data for Tamil Nadu are from the National Family Health Survey of 1999. These show that, while malnutrition continues to decline in the State, it is not doing better than neighboring States. This is not, perhaps, unexpected, given the reduced commitment to quality improvement during TINP II and WCDP, discussed below.

III. LESSONS

A. LESSON 1: SELECTIVITY AND TARGETING

The Bank’s management issues paper (Heaver, 2001) noted that there were two types of response to management capacity constraints: developing additional capacity over the longer term, and “designing short-term jobs, projects, and programs in a way that takes into account limited current capacity”. It did not, however, elaborate on the latter approach. TINP is a good example of a program which, in addition to developing very substantial new capacity, was also designed to be manageable. This was achieved by limiting the range of interventions; targeting them on a limited number of beneficiaries; and having clear ‘entry and exit criteria’ to and from the program even for targeted beneficiaries.

Selectivity in the Choice of Interventions

TINP I was designed following a 1970s analysis, the Tamil Nadu Nutrition Study, which was probably the most elaborate nutrition study undertaken in the developing world by that time. In addition to carrying out anthropometry, it studied the consumption aspects of nutrition, food production and processing, and the relationship between income and employment growth and nutrition in the state. The study's broad scope led to wide-ranging nutrition strategy discussions between the state government and the Bank, and in turn to the initial identification of a complex, multi-sectoral project with components for growth monitoring, behavioral change, food supplementation, health care, food production, and food processing. In the course of a 16-month dialogue during project preparation, this initial broad menu of activities was reduced to the more limited TINP focus on growth promotion and improvement of maternal and child health services.

The project's scope was reduced based on management and cost-effectiveness considerations. With regard to management, the Bank had learned from its experience with integrated rural development in the 1970s that complex, multi-sectoral projects were often difficult to implement. With regard to cost-effectiveness, two of the most important conclusions of the Tamil Nadu Nutrition Study were that

- there was a strong two-way relationship between the high levels of child mortality and the high levels of child malnutrition in the state; and
- while there was a broad relationship between income levels and nutritional status, child malnutrition was nevertheless high in parts of the state where incomes levels were relatively high, and, at the household level, in many families who had more than enough income for an adequate diet.

The first of these conclusions explained the emphasis on health investment in TINP. The second suggested that the most fundamental constraint to improving nutrition in Tamil Nadu was in the area of behavior at the household level. If families with enough income to feed pregnant women and children well were not doing so, then the priority intervention seemed to be information, education and communication (IEC). This explained TINP's emphasis on growth promotion.

Targeting by Risk Group

The Tamil Nadu Nutrition Study also noted the mismatch between those who were benefiting from the nutrition programs going on in the state, and those who were in most need. Survey data clearly showed that malnutrition was concentrated among pregnant and lactating women and pre-school children. Of no less than 25 (mostly small scale) nutrition programs which the study had identified as ongoing in the state, very few benefited women in this high risk group; the scheme with the highest coverage was a school lunch program for older children; and several smaller programs for pre-schoolers focused more on 4-6 year olds than the 0-3 year olds among whom wasting was highest (the high prevalence of malnutrition among 4-6 year olds was largely stunting, which reflected repeated episodes of wasting before the age of three).

The choice of pregnant and lactating women and 0-3 year old children¹ and their mothers as TINP I's target group was therefore made on technical grounds. But limiting the size of the client target group also had important managerial implications, helping to make the CNWs' workload more feasible. Although the average population coverage was 1500 per CNC, each CNW had to focus on no more than about 30 pregnant and lactating women, plus about 100-120 0-3 year old children.

¹ TINP I initially targeted only 6-36 month old children; this was changed during implementation to 0-36 months, as awareness grew about the importance of nutrition, particularly exclusive breast-feeding, during the first six months.

Entry and Exit Criteria

This was still a large number of children. But a further level of targeting ensured that the CNW's workload was manageable. During TINP I, only children who were severely malnourished or those whose growth failed to increase adequately over three consecutive monthly weighings were eligible for the supplementary feeding program—the so-called growth faltering criterion for supplementation. Children entering the feeding program were supplemented for 90 days, and then exited from the program providing they were once again growing properly. Within two years of the program beginning in any CNC area, the number of severely malnourished children fell by about half, with the result that at any one time no more than about 25% of the 0-3 age group (including both severely malnourished and growth falterers) were in supplementation. In addition, 30%-60% of pregnant and lactating women, who met certain technical entry criteria, were supplemented. Limiting supplementation to a minority of beneficiaries helped reduce dependency on the program, as well as making managerial, nutritional and financial sense.

In a major supplementation strategy change at the beginning of TINP II, it was decided to provide 90 days of supplementation to all children with moderate malnutrition, not just to those with faltering growth. This was a response to the perceived failure of TINP I to have an impact on moderate malnutrition. Whether or not this change of strategy was justified on technical and cost-effectiveness grounds, it made surprisingly little difference from a managerial point of view. As with the initial period of TINP I, when there were large numbers of severely malnourished children in feeding, there was an initial increase in numbers of moderately malnourished children supplemented, but after a year or two nutritional status improved and the numbers in supplementation again stabilized at around 25% of 0-3s.

The amount of money spent on food supplementation--about 40% of the nutrition component--has been criticized by some as unjustified. There are certainly technical questions (see, for example, Rush, 2001) as to whether the supplementation of pregnant and lactating women in Tamil Nadu was cost-effective, especially during the later stages of TINP II and during WCDP, after malnutrition rates had fallen substantially. It has also been argued that the main benefits from child growth promotion programs come from their growth monitoring and IEC components, rather than from supplementation, and that therefore the supplementation of children may have been unnecessary. If so, a big saving both in cost and in CNWs' time could have been made.

It is most unfortunate that the impact of TINP without supplementation was never tested. The Bank strongly recommended that the last area of the State to be developed under TINP II should begin without supplementation. The Bank argued that this would be ethical, provided the experiment were limited to a two year period, after which, if nutrition failed to improve adequately, supplementation would be started—i.e. the proposal was only for a delay in supplementation coupled with careful measurement of the impact, rather than a policy change. However, this apparently mild proposal was unacceptable to the state Government, probably for political reasons; it was an unfortunate coincidence that elections to the state assembly were due to be held during the period in question.

Despite some legitimate doubts about TINP's supplementation strategy, those opposed to supplementation altogether have sometimes overlooked two things. The first is that the many small scale nutrition programs in Tamil Nadu prior to TINP--and indeed elsewhere in India--had supplementation programs which were much less tightly targeted than TINP's. In addition, throughout the operation of TINP, the state financed a completely untargeted noon meal program for older preschoolers and school age children up to 14. In this context, it would almost certainly have been politically impossible for TINP *not* to have included food supplementation, and indeed it can be argued that it was a major policy achievement of TINP to have pioneered targeted supplementation, given the tradition of universal feeding.

A second factor sometimes overlooked is that the food provided by TINP was not only tightly targeted, but also insufficient to meet children's calorie requirements; it was indeed a supplement, not a meal. As such, it was provided in the form of laddoos--small balls of slightly sweetened rice/gram mix--rather than in the form of the plates of rice favored by the NMP and ICDS; the laddoos were seen by mothers as snacks, and hence were more likely to supplement food given at home than substitute for it. During TINP I, project staff at all levels and mothers coming to the CNCs were clear that supplementation was to help prevent or treat an episode of malnutrition, rather than a meal entitlement. The primary purpose of supplementation was to demonstrate to mothers that very small amounts of additional food--amounts affordable in terms of almost everyone's household budget--were enough to lift children out of malnutrition.

Food supplementation in TINP was not therefore designed as a way to plug a calorie deficiency--i.e. as a food security intervention--but as a key part of the program's management system. Supplementation was both an incentive for clients to come to the CNCs, and an educational tool. An understanding of this approach seems to have been common to nearly all staff and beneficiary participants during TINP I. This understanding declined somewhat during TINP II. When TINP and ICDS were merged during the third project, WCDP, TINP's selective approach to supplementation was maintained; it remains the only State in India to follow this approach.

B. LESSON 2: STAFFING AND JOB DESIGN

TINP's success in reducing malnutrition has partly been ascribed to its well designed procedures for staffing and job design. These included recruitment criteria which ensured that workers were motivated and capable; jobs designed so that workloads were realistic; and tightly specified work routines which helped CNWs focus on priority tasks, and which ensured that not only they but their supervisors and clients knew where they would be and what they should be doing. TINP also shows that paying community workers small honoraria is affordable, and can help ensure accountability for results. Unfortunately, however, there is no way to know whether this was a more or less cost-effective approach than using volunteers would have been.

Recruitment

During TINP I, the following selection criteria for CNWs were carefully observed:

- Residence in the village
- an elementary school education (eight years of schooling)
- leadership potential and communications skills
- acceptability to the community.

In addition, wherever possible CNWs were chosen from women who were both poor and who had healthy and well nourished children. Such women had no social barrier between themselves and their poorer clients, and they also a head start in educating mothers, since they had themselves proved that it was possible to bring up well nourished children on a very low income.

During the middle years of TINP II, the local residence criterion was not strictly adhered to. By midterm, a quarter of CNWs were non-resident over the program as whole, although the proportion was much higher in a few districts where the problem was concentrated. Non-resident CNWs were less likely to be known and trusted by program clients. And, because they had to travel to work, non-resident CNWs had less time to provide services. TINP services were delivered mainly in the early mornings, before mothers left to work in the fields, and in the late afternoons after they returned--just the times that a non-resident CNW would be least available.

The Bank also received allegations that many CNWs hired during the middle years of TINP II made substantial payments for their jobs (a widespread practice in many Indian states, but one which had apparently not affected TINP I). If true, this too would have had a serious impact on program implementation; the honoraria paid to CNWs were so low that they could only have recouped the cost of the bribes by making money off the program, perhaps by selling some of the food supplement. The non-residence of many CNWs, and--if the allegations were true--corruption in recruitment, may have helped to explain the TINP II terminal evaluation finding that malnutrition rates declined considerably less in the areas of the state developed under TINP II than in the areas developed under TINP I.

Duties

CNWs had a limited number of clearly defined duties, in contrast to Multi-Purpose Health Workers (MPHWs), who not only had three times as many clients to look after, but no less than 42 different tasks--multi-purpose indeed! CNWs were to

- register all pregnant and lactating women and weigh children under 3 monthly and children 4-6 quarterly
- maintain growth charts and provide nutrition counselling
- provide supplementary feeding according to the entry and exit criteria
- teach oral rehydration and give other basic advice on feeding sick children
- carry out quarterly deworming of children under six
- keep records of births, deaths and illnesses for children under six
- work closely with the MPHWs, in particular helping to mobilize children for immunization and pregnant and lactating women for care by the MPHWs.

The CNWs and the NMP's Community Welfare Organizers were the state's only health and nutrition outreach staff at the village level. Since they had better access to the population than the MPHWs, there was pressure throughout TINP to increase their range of duties, for example by getting them involved in family planning. Project management, conscious that CNWs were already complaining of overwork, was successful in resisting these pressures.

Process indicators showed that the key interventions of growth monitoring and food supplementation were implemented well during TINP I. In 1986, for example, children enrolled were on average getting 82% of the 31 weighings they should have had between the ages of 6 and 36 months, "a figure that compares favorably with similar projects in India and other parts of the world" (World Bank, 1994)². Workers also implemented the fairly complicated supplementation procedures quite well; 78% of the children eligible were in fact being supplemented in 1982, for example. OED concluded that such results "should allay concerns sometimes voiced about the practicality of successfully operating a large scale nutrition and health program based on growth monitoring and narrowly focussed targeting of short-term supplemental feeding. Women can be induced to bring their children in for weighing on a regular basis. Short-term feeding based on narrowly focussed targeting with clear entry and exit rules can be made to work as planned—keeping costs down, reducing dependence on feeding, and serving, along with growth monitoring, as a powerful educational tool. Most important, the education provided can induce permanent changes in mothers' behavior that positively affect their children's health and nutritional status."

Unfortunately, the performance achieved during the middle years of TINP I was not sustained. By 1990, the last year of TINP I, children were getting 58% of the weighings they should have, and only 66% of

² There was however, a significant difference between the numbers of children enrolled in the program and the total number of target age children; this was because a large number of outlying hamlets were not included in the service areas of the CNCs. This, however, indicated a management problem at the level of the Project Office, which was responsible for opening more CNCs to increase program coverage, rather than at the level of the individual CNW.

eligible children were getting supplemented. The OED evaluators believed this was due to a fall in staff morale in the last year of the project, when there was uncertainty, before TINP II was negotiated, whether the program would continue. But TINP II never regained TINP I's peak level of performance: the TINP II terminal evaluation found that only 0% of children were regularly weighed, and that only 58% of eligible 0-3 year olds were getting supplemented (World Bank, 1998). The deterioration was put down to a decline in the commitment and quality of project management. There has been no independent evaluation of weighing and supplementation rates under WCDP, but service statistics indicate that they have declined still further.

Work Routines

Work routines were clearly defined. Once a quarter, a village census was carried out, to update the register of client women and children. Three days a month were allocated to growth monitoring. On two of these days--which were announced in advance so that mothers could plan to come--women brought their children in to the CNC to be weighed. On the third day, CNWs did house-to-house visits to weigh those children who were enrolled in the program but had not been brought for weighing. Weighing sessions were used as opportunities to teach mothers how to interpret the growth chart, to discuss the causes of malnutrition, and to give advice on self care and child care.

The CNW's daily routine began with running the supplementary feeding program between eight and ten in the morning, a timing which was convenient for mothers. TINP's managers believed that this worked better than the ICDS approach of providing food at mid-day, which was more likely to substitute for the mid-day meal at home. Moreover, mothers were less likely to be available at lunch-time to bring their children for supplementation. This meant that younger children, who could not come to the center independently, were less likely to participate than older children, one reason why ICDS reached a far lower proportion of the high risk 0-3 age group than TINP.

In the late afternoons, when mothers had come home from the fields, CNWs carried out home visits to families who had malnourished or growth faltering children, and whom she thought needed additional counseling. Once a week or so, the CNW carried out cooking demonstrations or other forms of group IEC, and once or twice a week she accompanied the local MPH on her rounds. In all of her tasks, the CNW was assisted by members of the local Women's Working Group, a group of local women selected by the CNW and her supervisor as volunteer helpers in the program (see below).

Rewards

TINP is generally classified as a nutrition program using paid workers, and contrasted with programs like Thailand's, which use volunteers at the village level. But this was not exactly the case: TINP was designed as a hybrid model, using a mixture of paid CNWs and volunteer members of the Women's Working Groups. Working Group members were supposed to be the initial recipients of IEC messages, and then pass them on to their neighbors, rather like the 'contact farmers' in the Training and Visit system of agricultural extension, which was popular in India at the time. In practice, although Working Group members helped the CNWs with growth monitoring and food supplementation, and were themselves influenced by the program's IEC messages, the TINP I evaluation showed that they were not very active in passing on IEC messages to others³. The CNWs did most of the program's key work in behavioral change.

The CNWs received a small monthly honorarium, which at the time of TINP I was Rs. 90, or between US\$10 and US\$11 at the then exchange rate. Although this rate appears very low, and many CNWs felt underpaid for a job requiring six hours work a day, it should be noted that TINP paid more than the

³And in TINP II, the Groups were apparently not very active at all, with only 15% of members participating in Group meetings (World Bank, 1998).

agricultural wage rate at the time for women in Tamil Nadu. The CNWs were motivated not just by money, but by the satisfaction of helping others, and by their status in the village, which rose due to the well publicized benefits their work brought to the community (see Lesson 4 on monitoring).

Debate continues on whether paid workers or volunteers are the better approach for community nutrition programs. In the Bank's first management case study, Heaver and Kachondam (2002) concluded that a nutrition program based on volunteers had been successful in Thailand in part because of environmental factors such as the high level of literacy, relatively homogenous village societies, and a tradition of voluntary community service. Unfortunately, there is no empirical evidence from India on whether volunteer or paid worker systems work best. There is evidence, from Dapice (1986), that TINP was more cost-effective than ICDS⁴, but since both programs used paid workers, both might have been less cost-effective than a volunteer approach. The only large scale experience with volunteers in India was the Village Health Guide program, which failed. However, there were significant flaws in the design of that program: the volunteers were mostly men, and hence at a disadvantage in providing maternal and child health services to women, and in addition they were not well trained and supervised. It cannot therefore be concluded that the scheme's failure was due to its volunteer approach (although the scheme did predate TINP and ICDS, and its failure may have helped discourage their designers from relying on volunteers).

Some critics of TINP have argued that paying large numbers of workers at the village level (more than 40,000 in TINP's case) is not financially sustainable, and also that it undermines their position as *community* workers. The first of these arguments is not valid. Although Tamil Nadu did opt for central financial support for CNW salaries at the end of TINP II (see Introduction), this was because it was on offer, and not because the State could not have financed TINP on its own. Even at state-wide coverage, TINP's running costs were only about a third of what was spent on the NMP; since the NMP probably had little nutritional impact, the state could easily have continued to pay for TINP, if it had chosen to concentrate its nutrition spending on activities with the highest nutritional benefits. And the fact that India has been able to universalize the ICDS scheme, which costs more than TINP, shows that paying community nutrition workers is affordable by all but the poorest countries.

It appears that the second critique is probably also invalid. TINP's CNWs clearly enjoyed strong community support (see Issue 2). During TINP II, Tamil Nadu's Chief Minister decided to make the CNWs permanent employees of the state civil service, a policy decision which was strongly opposed by the Bank, not only on the grounds that it would lead to inflation of the wage bill, but also because the Bank feared that it would distance CNWs from their communities, who might come to see them as representatives of the government, rather than as their own community workers. But there is no evidence that this happened: indeed, it can be argued that it is the solid relationship between CNW and community which has sustained the field program in the face of fluctuating management commitment to maintaining the program's quality.

Three arguments were put forward by TINP's program managers and the Bank's project officers in favor of paying small honoraria (but not government pay scales) to the CNWs: (i) this increased their accountability to the community and to the program for delivering results; (ii) because workers were paid, TINP did not suffer from the high drop-out rates of volunteer-based programs, and hence it made sense to invest in intensive training to build workers' professionalism (see Lesson 3); and (iii) it was ethical to pay for work as demanding as the CNWs' (it was sometimes pointed out that in no western country would

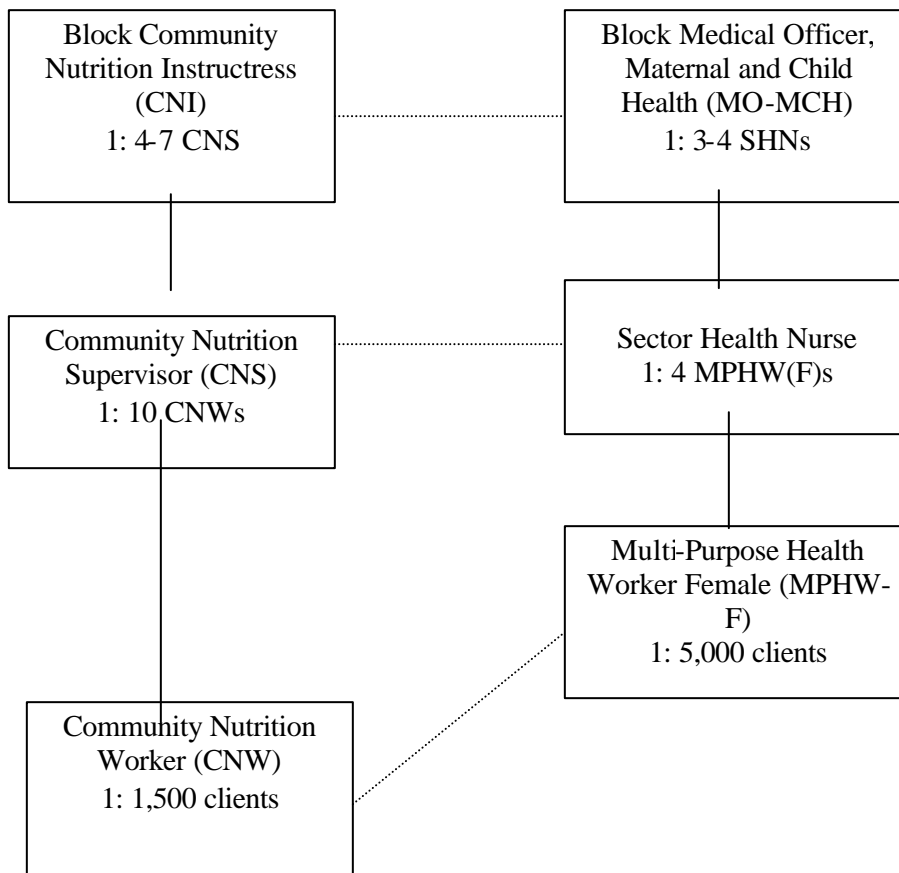
⁴ The study concluded that TINP resulted in about twice the nutritional benefit of ICDS at a bit over half the cost. But it should be noted that it was based on a comparison of only one TINP block and one ICDS block; and also that comparison of the two programs requires some heroic cost allocation assumptions, since TINP workers provide only nutrition services, while ICDS workers provide both nutrition and pre-school education services.

governments expect volunteer workers to do as much as community programs in developing countries routinely ask of volunteers with much lower incomes).

C. LESSON 3: TRAINING AND SUPERVISION

Chart 1 shows the structure of field supervision in nutrition and health.

**Chart 1: Organization of Nutrition and Health Services at the Block Level
(Population Served: 60,000-100,000 people)**



TINP's nutrition training and supervision system had high ratios of supervisors to workers, ensuring that they received plenty of support. It was also unusual--and different from the systems adopted both by the health sector and ICDS--in that the Community Nutrition Instructress (CNI), who was the linchpin of the system, was a combined pre-service trainer, in-service trainer and supervisor of the workers in her area. This meant that training could be tailored to each worker's individual needs. It also meant there was no need to maintain an expensive network of institutions for pre- and in-service training. TINP's evaluators gave this system much of the credit for the high quality of nutrition services during TINP I. An informal evaluation of the TINP training system carried out by the Bank during the preparation of WCDP concluded that it was not only more effective but cheaper than the ICDS approach.

Pre-service training

CNIs recruited during TINP I were very well qualified, most having post-graduate degrees in nutrition, home science or related subjects. They received two months of project-specific training at either the Gandhigram Rural Development Institute or the Sri Avinashalingam Home Science College, the latter being the institution which, together with TINP managers, was responsible for developing the TINP training curricula. The curriculum for CNIs--in contrast to that of many other health and nutrition programs--focused only on practical skills needed in the field. Its basis was the CNW curriculum, augmented with modules on training and supervision⁵.

During TINP II, a decision was taken by project management to fill a large number of the CNI posts for the newly opened blocks by promotion from the CWO and CNS cadres. While this offered career opportunities for these cadres, the Bank was concerned that the promotees did not meet the recruitment qualifications for CNIs, and that many would not make good trainers. By 1996, two thirds of the CNI cadre were promotees, and the Bank felt that this was a significant factor in the declining quality of training and supervision.

About half the CNS cadre were directly recruited graduates in home science, and the rest were promoted from the ranks of social welfare extension workers. CNSs also had two months of project-related pre-service training. Their curriculum was similar to the CNIs, except that instruction in teaching skills was replaced by instruction in supervision, personnel management and public relations.

CNWs' pre-service training also lasted two months, far longer than the 10-15 days which is often all that volunteer-based programs can afford to give their much larger numbers of front-line workers. Numbers in each CNW training session were limited to 25, also smaller than many volunteer-based programs. The classroom was usually a room lent by the local block office (the block is a unit of government in India's rural areas, covering 60,000-120,000 people, and headed by a Block Development Officer, who coordinates development across all sectors). Teacher and trainees often sat on the floor. CNIs did not consider the lack of a training institution and elaborate teaching aids to be a great disadvantage. TINP training made heavy use of role-playing, and the spartan teaching environment was closer to the one CNWs would experience in the field than a classroom in a well-equipped training institute.

In order to promote collaboration between nutrition and health workers, the last week of pre-service training took place jointly with the MPHWs working in that particular batch of CNWs' future service areas. This would have been difficult to arrange, had CNWs been sent for training at institutes outside the local area.

Supervision and in-service training

The program's supervision ratios ensured more support than workers get in most other health and nutrition programs. CNWs were supervised by the CNSs, at a ratio of 1:10 during TINP I (changed to 1:15 during TINP II). Aside from routine supervision, the CNS was responsible for making joint home visits with the CNW to families with special problems, for example those not bringing their children for weighing or feeding, or those with children who failed to gain weight after 90 days of supplementation.

CNSs were supervised by the CNIs. Since block populations varied from about 60,000 to 120,000, a typical CNI would have been responsible, as supervisor, for about 4-7 CNSs, and, as trainer, for 40-65

⁵ Topics included the objectives of the project, the methods for its implementation, teaching techniques, the organization of practical field work, the use of communications media and materials, maintenance of equipment, the role of communications campaigns, the use and preparation of teaching aids, the preparation and delivery of supplementary food, relationships with the community and local officials, the art of supervision, management and project administration, as well as financial control and reporting.

CNWs. Since supervision and in-service training were carried out simultaneously by the CNI, it is impossible to specify how much time was allocated to each. One advantage of the system was that the quantity of in-service support was flexible, at the CNI's discretion, based on workers' needs.

In the first years of TINP I, CNIs were supervised directly by the TINP PCO. But as the number of blocks covered by the project increased (to 173 at the end of TINP I and ultimately to 316 by the end of TINP II), it became clear that intermediate supervisory tiers were needed. Small taluk (an administrative unit covering two blocks) and district offices were created, the latter having a District Project Nutrition Coordinator and a District Communications Officer, responsible for technical support to the IEC program. The ratio of blocks and taluks to districts was variable, since many districts were bifurcated during the life of the program. But at the end of TINP I, for example, there were 373 TINP blocks in 11 districts, so that each district office was supervising about 30 CNIs.

D. LESSON 4: MONITORING

The main strength of TINP's monitoring system was that it generated timely, good quality data which was used by the CNWs, and which was made available to client communities, as well as to program managers. Its main weaknesses were that much more information was collected than was actually needed (especially during TINP I), and that project management made insufficient use of performance data for 'management by exception' (especially during TINP II). An excellent, detailed analysis of the TINP MIS can be found in Shekar, 1991.

Information for Workers and Clients

The monitoring systems of many health and nutrition programs are designed with managers in mind as the primary information users. This was not the case in TINP. Each month, CNWs generated a set of management information which was publicly displayed for their own and the community's use on a blackboard on the outside wall of the CNC. This information (see Appendix C for a full list of indicators) included data on the proportion of children weighed that month, the numbers in each nutritional status grade, and the numbers in supplementary feeding. Clients, supervisors, village leaders and indeed any literate passer-by thus had access to current information about how the program was doing. Community growth charts, also displayed on the CNC wall, were a further innovation during TINP I; these showed the nutrition status of each child in the village on a single chart, and were a useful snapshot of the village nutrition situation.

But though information was used at the level of the CNC for targeting clients, prioritizing the CNW's work, and involving the community, more data was collected than was needed for management purposes (see below), and recording and reporting took a great deal of time--about 27% of CNWs' time, according to a study carried out during TINP I (Shekar, 1991). This was a constant source of complaint from the workers. During TINP II, the number of registers they were required to fill in was reduced from no less than thirty to seven, and then to four during WCDP (World Bank, 1998). Unfortunately, no study has been carried out on how much worker time this rationalization saved.

Information for Management

Information from the CNCs was collated by the CNSs and CNIs at monthly meetings with the CNWs, and sent up to the TINP PCO, where it was converted into a set of key performance indicators. Even though data management was not computerized until TINP II, the process was very efficient: the data for any month were processed and ready for managers' use by the end of the succeeding month.

One weakness of the MIS was that the number of indicators (see Appendix D) was greater than needed for month-to-month program management. Some indicators “lend themselves to quick and obvious conclusions (e.g. coverage of weighing), and hence seem to be geared directly toward better program management. Other indicators would require more detailed analyses before they could be translated into action (e.g. number of children in different grades of malnutrition at different ages). Hence, such indicators are more suited to research rather than as direct feedback” (Shekar, 1991). But the MIS’ strength was a system of trigger points for a subset of the key indicators (see Appendix E), which was used to generate ‘rectification notices’, sent out to each CNC wherever performance fell below the set level. TINP I therefore had a well developed system for management by exception at the CNC level.

This system was appropriate all the while (as in TINP I) performance was fairly consistent overall, but with some poorly performing CNC ‘outliers’. But during TINP II, performance variations between districts became much more significant than performance variations between CNCs within blocks, or blocks within districts. There were two types of variation. First, the ‘old’ TINP I districts as a group had more success in reducing malnutrition than the new TINP II districts. The Bank believed this was partly because the newly developed districts needed time to stabilize, but that it also partly reflected the decline in the quality of project management during TINP II: the TINP I areas, with their already strong institutional capacity, continued to perform relatively well even without strong support and leadership from the PCO.

Between-district variations in performance were much more marked than variations between blocks within districts. For several years, the Bank pressed the TINP II management to investigate these differences, to try to account for them, and to take corrective measures on a ‘management by exception’ basis. But this effort was not very successful. In the absence of thorough investigation at the time, it is difficult to explain the variation between districts. One factor was clearly that some districts were more ‘difficult’ than others, in terms of having populations which were poorer, less literate, and with a higher prevalence of inappropriate nutrition behaviors. Another factor may have been varying degrees of political interference in the program; for example, in some districts, as noted above, many non-resident CNWs were appointed.

Data Validity

Evaluators found the quality of TINP growth monitoring data to be high, a reflection of the quantity and quality of CNW training and supervision. Differences between nutrition status data derived from program monitoring and from independent surveys ranged from five per cent to as much as thirty per cent. But most of the variation could be accounted for by a difference in denominators: the independent surveys took all pre-school children as the denominator, while the project monitored only the children in the service areas of the CNCs. Since TINP did not attempt to cover a large number of outlying hamlets⁶, containing about 20% of the rural population, a substantial discrepancy in status data was inevitable.

The Bank staff responsible for the routine six-monthly reviews of TINP II’s performance found the reporting of birth-weights--a responsibility of MPHWs, since the majority of births took place in health institutions--to be completely unreliable. An unbelievably high proportion of babies (in some health centers, between 60% and 94% of babies) was recorded as having birth-weights of exactly three kilograms. It seemed clear that this was the consequence of the Chief Minister’s announcement of a new ‘Fifteen Point Program’ for child welfare, one of whose targets was an average three kilogram birth-weight.

Based on this experience, the Bank was concerned that there might also be a decline in the quality of the child growth monitoring data. But its field reviews of growth charts, which are hard to falsify

⁶ This major problem is discussed further in Issue 2.

undetectedly, suggested that this fear was unfounded. The PCO Monitoring Unit carried out monthly check-weighings of children from a sample of CNCs, and this validation system provided a strong incentive for accurate record-keeping.

IV. UNRESOLVED ISSUES

A. ISSUE 1: BUILDING UNDERSTANDING AND COMMITMENT

As the Bank's management issues paper points out, building understanding about the causes and consequences of malnutrition is a precondition of investment in large scale programs; and maintaining commitment to implementation is as important to programs' success as getting their technical strategies right. TINP's record in this regard is chequered, begging the following questions:

- What made the state Government commit to investing in TINP I, and how was this commitment widened from those who designed and authorized TINP, to those who implemented it?
- Why did commitment decline during TINP II, and could this have been avoided?
- Why did the state Government opt to switch to the ICDS model—a move which meant abandoning many of TINP's key design principles? And why was the central Government opposed to letting TINP continue, or to improving ICDS based on the lessons from TINP?

Building Understanding and Commitment in TINP I

Commitment to Investment. Although TINP has sometimes been seen as a World Bank initiative, commitment to nutrition in Tamil Nadu long predated the Bank's arrival. As early as the winter of 1969/70, a team from the USAID mission in Delhi, tasked with finding a suitable location for a major nutrition systems analysis study, had visited several Indian states and concluded that Tamil Nadu was the most interested in reducing malnutrition. One influential individual, in particular, championed the cause of nutrition in the State. S. Venkitaramanan was the State's Finance Secretary at the time of the Tamil Nadu Nutrition Study, and became its Chief Secretary during the preparation of TINP I. His interest in nutrition had developed during an assignment to the central Government, where he worked during the 1960s famine in Bihar for C. Subramaniam, the then Minister of Agriculture (and, later, father of India's Green Revolution). Venkitaramanan brought back to Tamil Nadu his first hand experience of the famine, and the fear that it might be repeated in other states. This was a significant factor in galvanizing the State's interest in food production and nutrition.

Several other factors appear to have been important in building Tamil Nadu's commitment to TINP. First, the TNNS laid the analytical foundation for understanding the issues (see Lesson 1). Second, the TNNS' scope (it was implemented by two American and 12 Indian nutrition professionals working full time, supported by several contracts with Indian institutions for survey work) meant wide involvement of the nutrition community in the state; this helped to build consensus among technical stake-holders. Third, although the technical work was led by the American consultants, the study was overseen by a state Government committee consisting of the Secretaries who ran the ministries relevant to nutrition. These Secretaries were concerned that the State spent considerable sums on its 25 nutrition programs, but reached only 10% of its population, and had little nutritional impact. The involvement of key decision-makers, looking for cost-effective interventions, ensured that the TNNS plugged into policy-making, and was not an academic exercise.

The Bank was well aware of the TNNS and its findings: USAID's Director of Nutrition in New Delhi, who had initiated and financed the TNNS, had left to become the Bank's Nutrition Advisor; and the Bank staff member who led the TINP appraisal was also an ex-USAID employee. Tamil Nadu's interest in nutrition, coupled with the unique analytical base of the TNNS, made it a natural choice for a Bank-assisted project. Key contributions from the Bank were the injection of its experience with integrated rural development, which helped focus TINP on a doable set of interventions (Lesson 1), and its recent experience with a nutrition project in Indonesia, which influenced the design of the project's communication and targeting strategies. Also, of course, the substantial resources which Bank involvement promised helped to ensure that the preparation work on TINP had a high profile in the state government, and catalyzed the planning and finance ministries' decision to sanction a large scale project.

Commitment to Implementation. Several factors helped ensure that the state Government's commitment to investing in TINP translated into commitment to implementation. The choice of project managers was perhaps the single most important. During its early years, TINP was run by a succession of three young, highly motivated and competent Indian Administrative Service officers. All were women (who are a small minority of that cadre), who were especially committed to a program whose main beneficiaries were women and children. The appointment of these effective managers reflected the state's commitment to the program. India has often been criticized for its tradition of having generalists rather than technical specialists run its social sector development programs. But this had two key advantages in the case of TINP: non-technical managers were free of prejudice about how a nutrition program should be designed and run, and so were open to innovation; and managers drawn from the Indian Administrative Service had easy access to the Secretaries--all officers from the same cadre--when policy or budgetary decisions were needed.

Like most government programs in India, TINP suffered from turnover of key staff—notably the project coordinators themselves. Understanding of the project by newly appointed managers was aided by regular progress review visits from the same Bank technical team which had helped design it; the continuity of this technical assistance was important. It was also facilitated by a 136 page Project Implementation Manual (World Bank, 1980), drafted by Bank staff and consultants, which set out the design of each component in detail. (The TINP I implementation manual is said to be the most detailed ever prepared for a Bank-assisted health or nutrition project.) This was a major input into the design of training curricula for TINP staff at all levels. Understanding and commitment were also promoted by TINP's intensive training system; by regular, supportive supervision; and by a monthly project newsletter circulated to all CNWs.

Community involvement in the implementation of TINP (see Issue 2) helped build clients' commitment to the program. Also important was a mass media and inter-personal communications campaign managed by the PCO—an IEC effort which was criticized on a number of technical grounds (see Issue 4), but which was certainly not lacking in enthusiasm, or in the quantity of messages on the project which reached clients. Less obviously, the high proportion of children participating in the supplementation program increased TINP's acceptability to the community. While it is widely known that TINP fed only about 25% of children a day as against ICDS' 40%, what is less widely known is that, *at different times*, TINP supplemented 75% of a typical village's children (because different children entered and exited the program based on their nutrition status), whereas the ICDS program mostly fed the *same* 40% of children (chosen on poverty criteria).

The Decline of Commitment During TINP II and WCDP

A decline in the quality of program management followed the election of a new state government in 1991, and the appointment of a new Social Welfare Minister and Project Coordinator. During this period, at least as the Bank perceived it, understanding of the program's principles, commitment to its implementation, and integrity in handling the project's finances all suffered.

With regard to *understanding*, previous program managers had a good grasp of TINP's design principles, and welcomed dialogue with the Bank's review missions about how the project could be improved from a technical and managerial perspective. The new management team showed limited interest in understanding the program's design, and the nature of its dialogue with the Bank shifted from that of working in partnership to define and resolve issues, to asking the Bank what shortfalls it saw in the program, and providing blanket assurances—without the benefit of discussing the issues and drawing up plans to deal with them—that the indicators in question would show an improvement by the time of the next review.

Manifestations of reduced *commitment* included

- failure in some areas to observe the local residence criterion in recruiting CNWs
- giving priority to expanding the program into new areas, at the expense of maintaining and improving quality in the existing areas
- the declining proportion of enrolled children who were being regularly weighed, and of eligible children being supplemented
- lack of concern about performance variations between districts developed under TINP II
- declining quality of training and supervision, as a result of promoting under-qualified or under-motivated CNS to many CNI posts.

With regard to *integrity*, the Bank received allegations, which it thought were credible, of corruption in procuring food supplements, drugs and equipment, as well as in recruiting CNWs (see Lesson 2). According to the allegations, all suppliers were bidding at above market rates, knowing they would have to provide substantial payments to government officials if they were awarded contracts. This form of corruption was difficult for the Bank to detect, since its checks on whether procurement was being properly carried out centered on whether contracts had been awarded to the lowest bidder—and the TINP contracts passed this test.

In 1995, the Bank's project staff were able to identify a clear contravention of the Bank's procurement rules; a potential drug supplier from the north of India had been prevented from bidding because of late supply of the bid documents by the PCO. The Bank suspected this was so the contract could be awarded to a bidder from Tamil Nadu, who would reward project managers. But this did not have to be proved. The deviation from the agreed procurement procedures was enough for a 'misprocurement' to be declared, and for the Bank to refuse to reimburse against the contract, and cancel the contract amount (over US\$2 million) from its loan⁷. The embarrassment that this caused the state Government contributed to a decision to transfer the project manager and install a new management team, which slowly began to restore the program's quality standards.

However, two or three years elapsed before the Bank identified the extent of corruption and found a way to respond to it, and the project management team was replaced. In the interim, corruption had consequences beyond the obvious one of diverting money which should have gone to the benefit of women and children. There were widespread complaints about the quality of food supplements reaching the villages. Tests done by an independent food standards institute in another State indicated that some samples contained impurities, and met neither composition nor caloric standards. The Bank successfully resisted the PCO's efforts to have food testing moved to an institution in Tamil Nadu. Several thousand

⁷ Unlike some other foreign assistance agencies, the Bank is not directly responsible for procurement under its projects. This is because it makes loans to Governments, the loan proceeds are the property of the Government, and procurement is therefore the responsibility of the Government. The Bank's control over how Governments spend loan funds is through a project legal agreement, requiring Governments to use them for the agreed project purposes, to follow a standard set of procurement procedures, and to implement the project with 'due diligence'.

faulty scales and low quality cooking utensils were procured and distributed in the new TINP districts, and then had to be replaced, leading to a delay in the start of services in these areas⁸. Some honest PCO managers resigned, unwilling to accept the declining standards of program management. And the lack of supportive supervision from a PCO which was focused on program expansion and the procurement that went with it, led to gradually declining morale among the field staff.

Could these developments, which had a serious adverse impact on the program, have been avoided? The answer seems to be almost certainly not. The alleged corruption in TINP was part of a larger pattern affecting many other development programs in Tamil Nadu during this period. It is unlikely that TINP could have insulated itself from the general decline in the standard of governance in the State. Indeed, it could be argued that it was a tribute to the quality of the institutional capacity in the field built up during TINP I, that the program's performance in the TINP I blocks held up relatively well during TINP II, in the face of events in the PCO. That said, TINP's management was highly centralized at the state level, making it correspondingly vulnerable to declining standards of governance at that level. An important question, discussed in Issue 2, is whether TINP II would have performed better if more had been done under TINP I to develop an implementation management role for local governments, or for local communities.

Though there has been no formal evaluation of WCDP to date, the Bank's perception is that the quality of the program has not improved since the last two years of TINP II. Growth monitoring and supplementation continue, reflecting the fact that these systems are institutionalized at the village level, but with unsatisfactory levels of coverage and quality. The interventions planned under the project to improve quality (such as the institution of quality improvement circles and the development of specific IEC plans for lagging areas) have not been implemented. Almost three years of WCDP implementation have been taken up sorting out disagreements about how to amalgamate the TINP and ICDS management structures, at the expense of attention to quality improvement and project disbursements. Commitment to nutrition in Tamil Nadu has thus never regained the level seen under TINP I.

TINP and ICDS

As the Bank's management issues paper notes, if nutrition programs are to survive, commitment must be maintained among a wide variety of actors, including program managers, domestic and foreign program financiers, program clients, and key technical specialists in nutrition. During TINP I, all these actors were committed to the project. But after TINP II, the state's financial stakeholders favored switching to ICDS, because the financial logic of this became compelling when Bank financing ended (see Introduction); and the other stake-holders were either not prepared to champion the TINP model, or were not influential enough to prevail over the Finance Ministry.

Why was this? Several factors seem relevant. First, and most important, TINP II's managers and their Minister were not prepared to fight to keep the TINP model. Their commitment to the project's technical strategies had not been high; and, following the financial irregularities during TINP II, they might anyway not have been credible advocates in the eyes of the Finance Ministry. Second, the Bank's financial influence was no longer significant. Third, TINP's centralized management meant that the program's clients had no voice in deciding whether they should get TINP or ICDS (see Issue 2). Fourth, no nutrition institution in Tamil Nadu had the stature to act as TINP advocate.

But if Tamil Nadu was not prepared to finance the continuation of TINP alone, why was the central Government not prepared to co-finance it, if the TINP model was successful and cost-effective? Still

⁸ The Bank believed, but could not prove, that the quality problems with food and equipment were the result of complicity between program managers and the manufacturers; lowering quality is a common way for suppliers to make excessive profits, enabling them to reward government employees.

more importantly—since ICDS is the world’s largest nutrition program—why were some of TINP’s successful features not incorporated into ICDS, if these would have made it more cost-effective? There is no simple answer to these questions; at least six factors may have contributed to India’s commitment to the ICDS model, rather than to TINP or a blend of the best features of both.

First, there was the accident of timing. When TINP I began, ICDS was still an experimental program. The decision to adopt ICDS as India’s national nutrition program was taken before TINP I was evaluated as a success. By the time the TINP I evaluation was circulated, the central Government was committed to ICDS, and reversing this commitment would have been politically difficult. The Bank had, unknowingly, backed the losing horse.

Second, Tamil Nadu made little effort to convince the central Government of the merits of its program; the project documentation was not circulated to key nutrition stake-holders outside the state, nor were key individuals from the central Government invited to visit TINP at an early stage, when exposure to the project could have made a difference to their thinking. (Indeed, as some academics have pointed out, both the state Government and the Bank have been quite selective in the documentation they have released about TINP.)

Third, the Bank also made little effort to sell TINP to the central Government during the early and mid 1980s. It could have prepared documentation on the project, organized visits of key stake-holders, and sponsored workshops discussing alternative approaches to malnutrition reduction, but it did not. Why not, is unclear. One factor was certainly that the Bank was thinking small at that stage: its India department was financing state rather than national projects in the social sectors; and nutrition remained a new sector for the Bank, without the mandate for large scale financing that engagement at the national level in India would have required. It did not help that, because TINP was defined as a ‘state’ project, the Bank’s dialogue was almost entirely with the state Government, while the central Government remained on the sidelines. This may have benefited TINP in the short run, but an opportunity was lost to build a working relationship with the central Ministry of Social Welfare.

Fourth, when the evaluation results for TINP I did come out, the controversy over their validity and over the extent of the project effect (see Introduction) meant that the state Government and the Bank had a less than watertight case on which to argue the merits of the TINP model. The central Government was quick to seize on this (even though the quality of its evaluations of ICDS was still poorer).

Fifth, the Bank and the central Government had different priorities. The Bank was concerned about service quality and cost-effectiveness from the beginning of TINP I. However, during the 1980s and the first half of the 1990s, at least in the perception of the Bank, the central Government was primarily concerned with expanding ICDS to national coverage. Quality was a secondary concern—and indeed, highlighting the poor quality of ICDS service delivery could have prejudiced domestic financial support for the scheme’s universalization.

Sixth, and perhaps most significantly, ICDS’s and TINP’s conceptual approaches were fundamentally different, a difference which was clearest in the area of food supplementation. For TINP, it was fundamental that food was an educational intervention, and hence a supplement and not a meal. For ICDS, food was primarily a food security intervention, and as such was provided as a midday meal. TINP beneficiaries, many of them selected because of short term growth faltering, entered and exited the supplementation program. ICDS beneficiaries, chosen on poverty as well as nutritional criteria, tended to stay in the feeding program

The two approaches appear to flow from fundamentally different perceptions about the causes of malnutrition. TINP can be characterized as an ‘educational/medical model’, in which malnutrition is seen

as a disease; once education and more food have been used to prevent or cure it, the child graduates from the program. ICDS can be characterized as a ‘social welfare model’, in which malnutrition is seen as the result of poverty; hence children need to be fed until the poverty problem is solved. It was not, therefore, that one party was committed to reducing malnutrition while the other was not; the problem was that the Bank and the central Government were committed to quite different ways of going about it.

When, in the late 1980s, the central Ministry of Social Welfare and the Bank began a dialogue about possible assistance to ICDS, their different approach to supplementation was their most significant disagreement (and still has not been reconciled). The Government saw the Bank as preoccupied with cost-effectiveness, at the expense of benefiting all needy children; a cardinal principle of ICDS was that ‘no child coming for feeding should be turned away’. The Bank felt there was no need to feed children whose parents could provide them with enough food at home, and argued that a supplementation program with entry and exit on nutritional criteria was the best way to show parents they could make a big nutritional difference with small extra amounts of food. There was no meeting of minds. The debate over the fundamentals of how to approach nutrition reduction polarized the two sides.

The central Government’s adamant opposition to TINP’s approach to education and food supplementation meant that it has also tended to look unfavorably on other TINP innovations, such as its approach to training and supervision, which were less controversial and might have benefited ICDS. A key rationale given in the Project Appraisal Document for including Tamil Nadu in WCDP was that this would facilitate the transfer of TINP experience to ICDS. However, of the 18 ways in which the Bank listed the TINP model as being different from and arguably superior to ICDS (see Appendix F), none have been adopted by the national program.

B. ISSUE 2: DECENTRALIZATION AND COMMUNITY EMPOWERMENT

The Bank’s management issues paper notes that decentralization may facilitate the participation of client communities in nutrition programs, but does not automatically lead to it; and that there are various degrees of community participation, ranging from mere participation in benefits, to participation in monitoring or financing, to full community empowerment, in which communities decide their own investment priorities and play a major role in managing implementation. Where was TINP along this spectrum? And could or should the state Government and the Bank have done more to move the program in the direction of community empowerment?

Participation in Benefits

The participation of program beneficiaries living within TINP I’s service areas was good, in terms of high enrollment rates and high coverage of growth monitoring and other services; and also because most children participated at some point in the supplementation program. However, TINP failed to reach the majority of one important client group—those living in hamlets outside TINP’s service areas in the main villages. This was a very serious problem, because up to 20% of the population lived in such hamlets, and because the hamlets were mainly populated by people from the scheduled castes, whose nutrition was considerably worse than average.

Evaluation showed that where hamlets came within TINP’s service areas, malnutrition went down by as much or more as in the main villages (World Bank, 1998). The problem was that not enough CNCs were set up to cover the hamlets. Conscious of this deficiency in TINP I, the Government and Bank set aside sufficient money under TINP II to establish additional CNCs in the hamlets. But these were never developed, because TINP II’s cost overran its rupee budget, and the PCO, against the Bank’s advice, chose to use its funds to expand the program to cover all districts of the state, rather than infill uncovered

areas in TINP I districts. To the degree that corruption led to overpriced contracts and hence contributed to the project cost overrun, an indirect consequence of the decline in integrity of project management during TINP II was the failure to reach a large proportion of the neediest beneficiary group in the state.

Participation in Implementation and Financing

Communities participated in program implementation in several ways. CNWs were community workers, and were supported by Women's Working Groups in each village. Thousands of Children's and Adolescents' Working Groups were also mobilized; these helped with IEC through songs, dances and skits, and by raising awareness about nutrition in their homes. The quantity and enthusiasm of community group involvement substantially exceeded what was achieved by ICDS, reflecting the training and motivation of TINP program staff, and the attention paid to IEC. But by the end of TINP I, both the PCO and the Bank felt that more needed to be done to increase community participation, if the program was to be sustained over the long run.

During TINP II, the IEC program was refocused on the mobilization of community support, as well as changing individual nutrition behaviors. "Non-government organizations, opinion-leaders and newly elected village *panchayat* members were oriented toward the goals of the project and motivated to generate further grassroots support. This led to both cash and kind contributions from *panchayats* and repair and maintenance of CNCs. An estimated US\$300,000 was raised for IEC and facility maintenance by community contributions" (World Bank, 1998). But, while helping with financial sustainability, this fell short of giving communities or local governments a management as opposed to support role.

Empowerment

Communities may be empowered to manage program implementation, rather than simply assist in it. Also, communities may be empowered during the program design stage to decide on program objectives and how to meet them. TINP did not attempt either form of empowerment. Had communities been given a role in program management by the beginning of TINP II, they might have helped to compensate for the decline in supervision and support coming from the PCO. They might also have acted as a check-and-balance on corruption, as well as improving service quality, had they been made responsible for

- hiring their own CNWs
- checking the quantity and quality of equipment and food supplements¹⁰
- monitoring program performance using the data already available on the CNC walls
- working with the field program supervisors to solve implementation problems.

Giving communities a greater role in managing TINP would have meant addressing such issues as

- whether the *panchayats* represented the full range of program clients, in a society which was divided along caste lines
- whether community user groups should have had a role in program monitoring or management as well as the *panchayats*, and, if so, their relative roles and interactions
- the extent of the role of *panchayat* or community management versus the role of program supervisors and managers.

These issues could probably have been satisfactorily addressed, and a greater management role for TINP communities could have increased their ownership of the program, the quality of implementation, and the chances of sustainability.

But it is easy, writing at a time when approaches to community participation are much more sophisticated than they were in the early 1980s, to make critical judgements about what should have happened in TINP.

⁹ Panchayats are the village level of local government in India

¹⁰ A short-lived experiment during TINP I with community *production* of food supplements was abandoned, due to corruption at the local level—a reminder that decentralization and community participation are no panacea.

As the Bank's management issues paper points out, decentralization and participation can only go as fast and far as the environment permits. India has allowed its states flexibility in how fast they develop local government; since *panchayats* were only systematically developed in Tamil Nadu during the 1990s, it was not possible to plan for a major *panchayat* role when TINP II was designed. And the PCO would presumably have had little interest in developing a local level program management system during TINP II, if this might have acted as a check and balance on its own activities.

In recent years (and well after TINP II was designed), the Bank has begun to promote 'community-driven development', in which communities plan their development programs, as well as manage implementation. It is increasingly accepted that building community capacity to assess needs and plan to meet them is a development goal in itself. Nevertheless, it not clear that a community driven development approach would have been appropriate for TINP. Communities might well have chosen food security interventions, as well as, or perhaps instead of, education and health interventions. TINP succeeded in part because of its selectivity (Lesson 1). A wider range of interventions would have increased the workload of already stretched CNWs, supervisors and managers, and this might have affected program quality and impact. Equally, the program's impact would have been jeopardized had communities given low priority to addressing the key behavioral and health-related causes of malnutrition.

C. ISSUE 3: SECTORAL MANAGEMENT AND INTER-SECTORAL COOPERATION

The Bank's management issues paper discusses the controversy about where in government the nutrition 'sector' is best managed. Since nutrition is in fact multi-sectoral, there is an argument for managing it from a cross-sectoral institution, such as the Prime Minister's Office or the Planning Ministry; but such institutions have no mandate for program implementation. There is therefore also an argument for an implementing agency, such as the Agriculture, Social Welfare or Health Ministry, to be in charge of nutrition; but managing nutrition out of any one line agency may mean reduced ownership and commitment from other line agencies. Since there is no 'right' location for managing nutrition, the issues paper argues that location may not be as important as what steps are taken to involve partner agencies: i.e., management *processes* may be as or more important than finding the right *structure*.

Structurally, the sectoral management of nutrition in Tamil Nadu followed the same pattern as in the central Government: the Ministry of Social Welfare was responsible for PEM control, while micro-nutrient programs were the responsibility of the Ministry of Health. Because PEM reduction was TINP's main aim, the TINP PCO was located in the state Directorate of Social Welfare, and managed by a Project Coordinator from that office. Because TINP invested heavily in the health sector, and cooperation between nutrition and health was important to achieving the program's goals, the Project Coordinator's immediate deputy was a Joint Coordinator (Health) seconded from the DPH, who ranked above the four Deputy Directors in charge of nutrition, communications, training and monitoring/operations research.

Since nearly half of TINP I's investment went into the health sector, locating the PCO in the Department of Health (DPH) might have been an option. But this would likely have had several disadvantages: senior health managers with established views on malnutrition reduction might not have fully supported TINP's innovative approaches; as a fledgling nutrition program among several large health programs, it is unlikely that TINP would have got the sustained management attention it needed; and if the PCO had been in the DPH, it could not have resisted the pressures during implementation to give CNWs health and family planning as well as nutrition responsibilities, as the PCO in the Social Welfare Department did. So the key issue seems to be: Given its location in Social Welfare, how well did the PCO do in forging working relationships with health, and with other nutrition-related programs, e.g. for food security?

Cooperation with Health

It would be ideal to assess the level of cooperation achieved, against TINP's impact on health. Unfortunately, this is not known, because it is impossible to separate the TINP effect on mortality from the effects of the state's health program and secular trend. Infant mortality fell far enough in the state as a whole during both TINP I and TINP II to meet the projects' targets (a 25% reduction in TINP I, and a reduction from 84 to 55 per thousand in TINP II). But the TINP evaluations used sample sizes too small to make valid conclusions about infant mortality in the project area, so no more can be said than that the projects contributed to the overall decline. It can be assumed, however, that the substantial expansion of the state's rural health infrastructure financed under TINP I must have had a significant impact on both health and nutrition.

The process indicators for health and micro-nutrient services, which were the responsibility of the DPH, give an interesting picture of the relative performance of different interventions over time (see Table 1). The poor achievement for vitamin A and iron in both TINP I and II was mainly due to procurement problems (both erratic supply and uneven quality), which affected not only the project area and the state, but the country as a whole. Improved cooperation between MPHWs and CNWs (see below) was probably a factor in the increases in ante-natal care and immunization, but these indicators also went up sharply for the State as a whole, so the improvement reflects a state-wide drive by the DPH more than a project impact. The high figures for ORS use probably reflect the fact that this intervention was a primary task of the CNWs, as well as a health sector priority. The rising but still low proportion of children referred reflected continuing problems with the project's referral strategy (see below).

	TINP I	TINP II
Ante-natal registration	56% a	90% d
Women getting more than 4 ante-natal check-ups		56% d
Iron for pregnant women (>90 tablets)	18% a	10% d
Maternal tetanus immunization (2 shots)	45% a	89% d
Child immunization (DPT3, OPV, BCG)	57-70% b	88% d
Coverage for child vitamin A (50%+ of due doses)	55% a	17% d
Proportion of children with diarrhea getting ORS		75% e
'Non-responding' children referred and examined	8-22 c	16-45% e
Sources: a World Bank, 1990a b World Bank, 1994 (in different project years) c Chidambaram, 1989 (children 6-36 months, in different areas) d World Bank, 1998 e Nat. Inst. of Nutrition, 1998 (children 12-24 months)		

Good cooperation between CNWs and MPHWs in the case of immunization was perhaps because this was both a DPH and TINP priority; specific targets were set for immunization coverage under TINP, so CNWs were motivated to help mobilize the community. On the other hand, the TINP I terminal evaluation reports that joint home visits by MPHWs and CNWs were not carried out as regularly as planned. Referral to the MPHW of children whose nutritional status had not improved after 90 days in supplementation was intended to be a key part of the TINP system; a health check was supposed to be a pre-condition of children being allowed to continue in supplementation. But the terminal evaluation of TINP I showed that less than a quarter of children meeting the referral criteria were actually examined by an MPHW, and almost none were further referred to a doctor (Chidambaram, 1989). The evaluation is silent on why, but the answer may have been that this activity, although important for the CNWs, was not a priority for the MPHWs, who were preoccupied with meeting health department targets in family planning, immunization and ante-natal care.

At the end of TINP I, improving the referral system was identified as a TINP II priority. The Bank made it a specific condition of TINP II that operations research on this would take place in one district in the first two years of TINP II, with replication to other districts if a successful system could be developed. In addition, a detailed strategy, spelt out in an eight page annex to the appraisal report, was proposed for improving health-nutrition cooperation more generally. It covered the following areas:

- making sure that CNWs' and MPHWS' responsibilities and priorities were clear
- revising and clarifying CNW and MPHWS work routines
- instituting regular, joint in-service training for health and nutrition workers
- developing work routines for joint field supervision by health and nutrition supervisors.
- decentralizing some health record-keeping to the CNCs and integrating health and nutrition records.

The appraisal report makes clear that, though outline agreement on the above had been reached between the PCO and the DPH, exactly what should be done remained to be decided. Surprisingly, since improving health/nutrition cooperation was a major TINP aim, the Government and Bank evaluations of TINP II contain no systematic review of whether a detailed strategy was agreed and implemented. But it appears from the project files that there was substantial progress with the first four strategy elements above, although none with the last. The Bank's evaluation of TINP II notes a resulting improvement in cooperation, since 'joint ... visits were occurring frequently in most districts' (World Bank, 1998).

The same evaluation also shows that the proportion of non-responding children referred and examined by MPHWS had improved compared to TINP I, although it was still low (Table 1). But the evaluation does not discuss project-financed operational research on the referral system, or what changes were made to the referral process: this is extraordinary, since this OR was regarded as so important at project appraisal that a legal covenant to implement it was negotiated. It appears that the main change to the referral system was the introduction of referral slips which ensured feedback from the referral center to the CNWS and MPHWS. However, it seems that no effort was made to improve diagnosis and treatment of nutrition-related illness at the referral centers, an equally important part of improving the referral process.

Cooperation with Other Nutrition-Related Programs

In the early 1980s when TINP began, 40% of the state's population lived below the poverty line (a figure worse than the national average, and the worst of India's four southern states); landless labor as a proportion of the agricultural workforce had risen from 18% in the 1960s to 32% in 1981; and a third of Tamil households had average calorie intakes of less than 1700 calories a head per day, a level which is not much more than the minimum required for survival (Balachander, undated). Landless laborers were particularly vulnerable to malnutrition, since they were dependent on the vagaries of prices in the private sector rice market, and the Government's safety net for the food insecure was quite inadequate. In the early 1980s, the Public Distribution System, which supplies subsidized rice, wheat, sugar, oil and some other non-food items, substantially expanded the number of its outlets in the state's rural areas. But Public Distribution System rice still did not account for more than 15% of the rice consumed in the state¹¹, as compared to 50% in the neighboring state of Kerala (Balachander, *ibid*).

So, while inappropriate *intra*-household distribution of food was still the main cause of malnutrition in the highest risk under three age group (see Introduction), household food security was clearly also a major problem. It is therefore, perhaps, surprising that TINP did so little to intervene in this area. The program's only food security-related intervention was the establishment under TINP II of a savings

¹¹ There were many reasons for this, including erratic supplies, and diversion of supplies due to corruption. Perversely, the poorest families often had least access to PDS rice. Some were obliged to mortgage their ration cards to better off families when times were hard; and poor families with many children who could access PDS got less rice per head than small families, since the rice ration was fixed on a per family and not a per head basis.

scheme for Women's Working Group members. By the end of the project, more than 4,000 Thrift and Credit Societies had been formed, with savings of about US\$400,000 (World Bank, 1998). But while this scheme was a success, it was started primarily as an incentive for Group members' continued involvement in TINP. There is no reason to suppose that Working Group members were the most appropriate target group, from a food security perspective, for the program's only food security-related intervention.

At first sight, TINP's very limited attention to food security could be explained simply by the desire to limit the number of project interventions to what was feasible (see Lesson 1). But it also needs to be seen in a broader context—the fact that no other projects in the Bank's lending program were specifically aimed at increasing household food security, as opposed to food production. The limited attention paid to household food security was partly the consequence of policy analysis which defined the issues at too late a stage. The Bank's first piece of sector work on nutrition in India came out only in 1998. But management-related factors were also part of the explanation. Both the Bank and the Government were reluctant to grapple with the daunting management challenges of the main food security programs, such as the Public Distribution System and the Integrated Rural Development Program, because these programs were plagued with leakages due to corruption, and the status quo was supported by influential vested interests.

A second management-related explanation was that, in both the Government and the Bank, the responsibility for nutrition lay with organizations or units with little expertise in and no responsibility for food security. In the Government, the Ministry of Social Welfare was the lead agency for nutrition, but it had no expertise in or responsibility for food security, which was with the Ministries of Agriculture and Food. In the Bank, the responsibility for nutrition was with its Human Resources Divisions, staffed mainly with public health specialists and health economists, while agriculture and income generation projects and policy analysis were managed elsewhere. It can be argued that those in charge of nutrition projects had

- different objectives and constituencies from those working on food security-related programs
- a predisposition to see the causes of malnutrition (in terms of UNICEF's 'food-health-care' triad) as being in the areas of health and care, rather than food—even though food insecurity was still more significant in the areas targeted by the Bank-assisted ICDS projects¹² than it was in Tamil Nadu, and hence
- limited incentive to design projects with substantial food security components.

On the other hand, those working on food security in both the Government and Bank were more interested in increasing agricultural production than in the health and care aspects of nutrition, which are equally important to household food security.

In the context of the above, could and should TINP have more done in the area of food security? It seems clear that it would have been undesirable for TINP to have included large scale finance for income and employment generation, or for the Public Distribution System. Not only would this have made the project unmanageable, but the funds which TINP could have put into these programs would have been far too small for the Bank to have expected significant influence over their policies or management.

There might nevertheless have been an alternative, involving little financial commitment by the Government or the Bank: to have used information collected by the CNWs to identify priority clients needing access to food security interventions--just as the CNWs identified priority clients for targeting by the health services. While any attempt at wholesale retargeting of the food security programs would have led to clashes with vested interests, it might have been possible to ensure that, whoever else these

¹² These included the tribal areas of Andhra Pradesh, Bihar, Madhya Pradesh, Maharashtra and Orissa, which contain a large proportion of the most food insecure people in India.

schemes targeted, they *at least* targeted the relatively small number of TINP clients who were so food insecure, that they could not be adequately helped by the program's IEC and health interventions.

Moving in this direction would have required addressing management issues including

- developing links with policy-makers in the food security programs, and finding ways to build their commitment to such an approach
- working out an appropriate targeting process in the field (key actors here would have been the District Collectors, who head the government bureaucracy at the district level, and have some discretionary control over who benefits from development and welfare schemes)
- ensuring that involving CNWs in the targeting process did not make them sources of patronage, and politicize their role.

Addressing these issues would probably have been feasible and worthwhile. While the opportunity to do this in TINP has passed, it could still be explored by ICDS, which has yet to develop linkages with the food security programs.

D. ISSUE 4: PROGRAM SUPPORT

Line agencies implementing nutrition programs require support in the areas of communications, training, operational research (OR) and evaluation. An issue with regard to communications, training and OR is whether support services are best developed within the implementing agency, or drawn from specialist outside institutions, whether already existing or specially created. During TINP I, nutrition IEC, training and OR were managed by small teams in the PCO, led by the Deputy Directors for Communications and for Training. But in the last two years of TINP I, an institutionally separate Communications and Training Center (CTC) was set up at a cost of over US\$2 million¹³. TINP's Deputy Directors for Communications and Training then became the heads of the communications and training wings of the CTC, as well as retaining their PCO management responsibilities in these areas for the field program. The PCO staff in training and communications were reassigned to the CTC, and additional professional posts in these areas were created. Why was this change made, and how well did it work?

The case of evaluation is different to that of communications, training and OR. To ensure that evaluation services are independent, they are usually located outside implementing agencies. The issue then is how agencies managing nutrition programs, and foreign agencies financing them, can have enough influence over evaluation agencies to ensure that they get quality services, without compromising the independence of the evaluation agencies. How well did TINP manage this balance, and what role did the Bank play in ensuring that its very substantial investment in TINP was appropriately evaluated?

Communications

TINP's communications component had two main aims: to win the community's support for the program, and to encourage the adoption of specific nutrition-related behaviors, such as bringing children for weighing, feeding children better, or using ORT. The TINP I evaluation (Chidambaram, 1989) rated the project highly on both counts, but concluded that some of the project's IEC strategies had been much less effective than others. The program used a wide range of mass media approaches, including specially made films and videos, folk theater, posters, wall paintings, hoardings, pamphlets, folders and the project newsletter, but these had a much poorer reach than inter-personal communication; 48% of client mothers said they had never seen any of the mass media. The films and videos, in which the project had invested

¹³ It was financed from savings from the World Bank loan, which had arisen because the rupee had depreciated against the Special Drawing Right, a basket of currencies in which the loan was denominated

substantial money and management time, had a particularly poor reach, since it proved too expensive to screen them in the majority of villages.

With regard to inter-personal IEC, it seems clear that the most effective channel was the CNWs, rather than the MPHWs or the Women's Working Groups. The TINP I evaluation showed (as might be expected given the different ratio to clients of the two types of workers) that the CNWs were much better known than the MPHWs: 72% of mothers of 6-60 month old children knew the name of the local CNW¹⁴, and 90% of the 72% knew where she lived, while for MPHWs the figures were 33% and 57% respectively (Chidambaram, 1989). The same study found that, while the Women's Working Groups were very active during TINP I, with 95% of group members regularly attending meetings, group members did little to pass on IEC messages to non-group members. The effectiveness of the CNWs' inter-personal communication can presumably be put down to their being local women with good connections in the community, and to their strong motivation and good training.

TINP I's IEC activities had a number of shortcomings, not brought out in the formal Government and Bank evaluations, including the following (summarized from Berg, 1985):

- Insufficient development work in the formulation of messages and materials, in particular little or no formative research with client mothers, and limited pre-testing
- a concentration on the quantity of messages and materials produced¹⁵, rather than on quality
- little evaluation of the impact of different channels, messages and materials, and no analysis of their cost in relation to their effectiveness
- a reluctance to involve outside expertise, especially from the commercial sector.

The result was a barrage of information which led to high general visibility for the program, but little knowledge about what IEC worked best in leading to which specific behavioral changes.

The CTC's communications wing was set up to strengthen and professionalize the management of the program's IEC activities in the above areas. A five page annex to the appraisal report for TINP II (World Bank, 1990b) contains a detailed communications strategy for the project, and states that the CTC will lead its implementation. However, it does not set out an institutional development plan for the communications wing of the CTC, beyond noting that five additional posts would be financed, for curriculum development and training, research and evaluation, materials production, community participation, and planning and management. Both the Government and Bank evaluations of TINP II are silent on what was actually achieved in terms of staffing the institution, providing technical assistance to it, or its effectiveness.

But while the Bank's evaluation of TINP II (World Bank, 1998) does not systematically address the effectiveness of the CTC in IEC, it does indicate that some of TINP I's IEC problems reoccurred in TINP II. Though the second project's IEC strategy, unlike the first's, was based on formative research, its implementation focused on mass media channels, as with TINP I. This was inappropriate given the need to correct significant performance differences between districts: what was needed was not a blanket, mass media approach, but area- and problem-specific messages, materials and training. In the last two years of TINP II, after the installation of a new project management team, attention began to shift to participatory rapid appraisal techniques as the basis for formulating communications priorities and messages, and to improvement of the CNWs' inter-personal communications skills. But it appears that this shift has not

¹⁴ As noted earlier, the denominator for this evaluation was *all* women. The CNWs' reach would have been over 90% , if the denominator had excluded women living in the hamlets, outside the CNWs' service areas.

¹⁵ To fully appreciate this point, it is worth noting that in 1985 the materials included (Berg, 1985) 17 booklets, 25 folders, 12 posters, 3 flip books, 5 sets of flash cards, 5 flannel graphs, 2 training manuals, 11 stickers, 8 tinboards, 11 cinema slides, 12 sets of slides, 5 video cassettes, 12 filmstrips, 2 training films, 6 motivational films, 7 exhibitions, 99 press ads and 4 folk theater scripts!

been sustained under WCDP. The proposed continuing social assessment of project clients has not been carried out, nor have the proposed area-specific qualitative studies which were supposed to lead to tailor-made IEC interventions for program areas with lagging performance.

Training

Training was positively evaluated at the end of TINP I. The Government's evaluation noted that the knowledge and skills of staff at all levels was good, and in particular that the CNWs had a clear understanding of the project's objectives and target groups, as well as the project interventions; the Bank's evaluation stated that training was one of the best features of TINP. In this context, the rationale for setting up a separate institution to support TINP training is not as clear as in the case of communications. The appraisal report for TINP II (World Bank, 1990b) states that the project would 'finance an expansion of the role of the CTC ... so as to make it an apex institution' for training, but its three page annex on training does not elaborate on this role, what staff would be added, or what institutional development activities would take place.

The Government's terminal evaluation of TINP II does not mention the CTC's training activities. The Bank's evaluation states that 'the project has been quite successful in capacity building in terms of planning and managing components like IEC, training.... The technical backstopping provided by CTC for needs assessment serve as a model for other states' and that CTC 'has effectively undertaken training of supervisors and other higher-level workers' (World Bank, 1998). But the fundamental problems in assessing the CTC are that

- neither when the CTC was constructed during TINP I, nor when TINP II was prepared and appraised, were institutional development objectives, strategies and indicators developed against which it could be assessed (at the midterm review of TINP II an institutional development plan was belatedly requested by the Bank, but it was never prepared); and
- there was never a professional, independent evaluation of the CTC's effectiveness, either as part of the project evaluations or separately.

Evaluation and Operational Research

Evaluation. Several weaknesses in the impact evaluation of TINP were noted in previous sections, including the inadequate matching of controls in the TINP I mid term and terminal evaluations; the delays in the TINP I mid term evaluation and the poor quality of much of the data collected; and, more generally, an inadequate effort in four out of five terminal evaluations¹⁶ to distinguish the effects of TINP from those of other programs, and from secular trends. These flaws in the evaluation of TINP need to be seen in context. Flawed evaluation was (and is) widespread in international nutrition. TINP was not an outlier in this respect, and indeed was evaluated more thoroughly than most other nutrition programs of the time. Nevertheless, the consequences of flawed evaluation were significant, in terms of controversy about TINP's achievements, and consequent difficulties in knowing how far TINP was a model for the ICDS or other nutrition programs to emulate. How did the Government and Bank manage the evaluation process, and why was evaluation not better?

The state Government contracted both the TINP I terminal evaluation and the TINP II mid term evaluation to the Department of Evaluation and Applied Research, a unit of the state Planning Commission. Despite weaknesses in the evaluation of TINP I, the Government was reluctant to consider an evaluator from outside the state for TINP II. It took the delays and poor quality of the TINP II mid term evaluation to convince the state Government to appoint a new independent evaluator, in the form of the National Institute of Nutrition, India's apex technical agency in this area. But while the technical

¹⁶ The Government, the Bank's India Department and the Bank's Operations Evaluation Department all evaluated TINP I; the Government and the Bank's India Department evaluated TINP II. Of the five studies, only the OED study of TINP I looked carefully at this question (see Appendix B).

quality of the TINP II terminal evaluation was better than the mid term in terms of the validity of the data and the quality of data processing, its analysis of the causation of the improvement in nutrition was still inadequate. This evaluation also failed to address several key impact and cost-effectiveness questions (see below), a problem of design rather than implementation.

In addition to urging a switch away from the Department of Evaluation and Applied Research, the Bank tried to improve the quality of evaluation by providing technical assistance in preparing terms of reference and reviewing evaluation design proposals, through a consultant who participated in its six monthly review missions. While the Bank was able to bring in cutting edge skills in international nutrition evaluation in this way, this approach had two problems. The Bank's review missions were short and infrequent, so the consultant was obliged to provide much of his advice by mail and fax from overseas. This made resolving problems cumbersome, and contributed to delays in the evaluation surveys. Second, the Bank's limited budget for mission support meant that the amount of technical assistance which could be provided in this way was small. Providing technical advice was not a substitute for training in state of the art evaluation approaches. Why, then, did the Bank not provide additional technical assistance through its loan funds, to systematically strengthen evaluation capacity?

This question needs to be explored in the broader context of the Government/Bank relationship, since an effort to develop evaluation capacity was not just absent from TINP, but from the Bank's India health, nutrition and population assistance program as a whole. Why this was is not entirely clear, but several factors seem to have been involved. First, there was a weak evaluation culture in the central Government, whose efforts to evaluate ICDS were very much weaker than those to evaluate TINP (a situation which, for reasons suggested in Issue 1, the Government may have had little incentive to improve). Second, a capacity development effort would have required technical assistance from abroad, in the absence of an institution in India with cutting edge nutrition evaluation skills. The Government was strongly opposed to foreign technical assistance, especially if this had to be financed from loan funds. There was therefore no demand for institutional development assistance.

At the same time, there was no pressure from the Bank for a systematic capacity-building effort. This seems extraordinary. By 1999, the Bank had financed five projects supporting TINP and ICDS; their total cost was over US\$750m, a large proportion of the Bank's total global investment in nutrition. The Bank should presumably have assigned the highest possible priority to knowing the impact of these investments. Three factors may help to explain why it did not. First, the Bank's own evaluation culture was weak; it had no nutrition evaluation specialists on its staff¹⁷. Second, failure to address institutional development problems in evaluation had its roots in a broader failure to grapple with institutional development in the Bank's health, nutrition and population portfolio. In a recent global review (World Bank, 1999), the Bank's Operations Evaluation Department concluded that the Bank's focus has been more on getting its projects implemented in the short run, than on building institutions which will support large scale operations over the long run. As a result, the Bank has neither developed methodologies for institutional capacity analysis and strengthening, nor is it staffed with adequate skills in this area.

Third, and perhaps partly as a consequence of the low priority given to institutional development (and the high priority given to procurement issues), the Bank seems to have seen weak evaluation in India as a procurement problem, rather than as an institutional development problem. In the 1970s and 1980s, evaluation services for the Bank-assisted health, nutrition and population projects in India were mainly procured on a non-competitive basis from government agencies. During the 1990s, partly because of the poor experience with this approach, and partly because of a global Bank procurement policy change, there was a move from single source procurement from government agencies to competitive bidding, and many

¹⁷ It is unfortunate that the Bank still has no nutrition evaluation specialists working in its India Department, and only one in the central unit of the Bank responsible for providing support to the Country Departments.

evaluation contracts were awarded to private sector firms. By the mid 1990s, it became apparent that poor quality work was being carried out by a number of firms, which the Bank blacklisted. However, problems with the timeliness and quality of evaluation continued. The Bank's underlying assumption seems to have been that the problem was to get hold of the right agency—a procurement challenge; but this was a questionable assumption, when evaluation skills were in short supply in the universe of potential contractors as a whole.

Operational Research. Formal evaluations are only one approach to learning how well programs are doing and what needs to be done better; equally important is the learning that takes place during program implementation, through special studies or OR. It has sometimes been said that TINP was a rigid program, following a detailed Implementation Volume that became a fixed blueprint, when a learning process was needed. But in fact, the first year of TINP I was devoted to experimenting with the project's strategies in a single block, before the program was scaled up; and during the later years of TINP I, no less than 60 small studies or pieces of operational research were undertaken, aimed at improving the program's design. The problem was not that TINP was uninterested in learning, but that the quality of these studies was mostly poor, so their results failed to lead to firm conclusions on which changes in strategy could be based.

In the light of the weaknesses in operational research during TINP I, it was decided that TINP II would focus on a smaller number of studies, whose quality could be more easily controlled. By the end of the second project, seven out of eight planned studies had been completed, and they appear to have been put to use either in improving the implementation of TINP II or the design of WCDP (see Appendix G for details). But the Bank's evaluation notes that 'as with TINP I and ICDS I¹⁸, the quality and timeliness of the research was generally low' (World Bank, 1998).

What Might Have Been Done? If the Government and Bank had made capacity development in the areas of evaluation and learning a priority, how might they have proceeded? The Bank's evaluation of TINP II concluded that 'with the benefit of hindsight, Bank staff should have acted more forcefully to deal with the poor quality of operational research and evaluation studies One possible solution ... would be to constitute an evaluation panel, including external expertise, to design terms of references, identify implementing agencies, monitor field implementation and data analysis and ultimately ensure quality and timeliness of baselines, mid term reviews and terminal evaluations. The same panel could be charged with overseeing key operational research.' (World Bank, 1998). This seems to be a necessary but not sufficient solution. Three possible, additional actions are suggested below.

First, an independent evaluation panel might certainly have been useful in helping to design terms of reference and identify implementing agencies. But a still more important function for such a panel would have been to help define the priorities for research and evaluation in the first place. While some of the questions which the TINP PCO chose to look at were key ones (e.g., the relative effectiveness of the one-worker versus the two-worker model), other questions (see Appendix G) seem to have been far less important than, for example:

- Was the large amount of money spent on maternal supplementation cost-effective in improving either maternal or child nutrition?
- Was it cost-effective to supplement all moderately malnourished children in TINP II, or would it have been better to continue the TINP I (or some other) supplementation approach?
- TINP's decentralized, integrated approach to training and supervision was very effective. But was it more *cost*-effective than institution-based approaches to training?

¹⁸ This was the first of three Bank projects to assist ICDS, and took place in the states of Andhra Pradesh and Orissa.

Large scale nutrition programs like TINP provide unique opportunities to find answers to key questions relating to the cost-effectiveness of different interventions or processes—unique because such questions cannot be answered by academic research taking place in small projects which do not sufficiently approximate real world conditions. Given that the Bank has invested more than two billion dollars in such large scale nutrition programs, it has had—but to a large extent has missed—an extraordinary opportunity to define and answer key research questions through its projects. Second, therefore, the Bank might also have set up a global evaluation panel, to work with national panels of the type proposed above, to determine the priority research questions to be answered globally, and to see which of the Bank’s portfolio of projects was best suited to answer each question. Operational research on these questions might then have been made a project objective of equal importance to the service delivery and impact objectives, which are currently stressed.

Third, while advisory panels would have been useful institutions, they would not have been suited to providing the on-going assistance implicit in the monitoring of studies’ field implementation and data analysis, as suggested by the Bank; or which would have been needed to build the institutional capacity to do quality operational research and evaluation. In the Indian case, it would seem that a two tier capacity strengthening effort would have been required:

- Developing capacity in the CTC to carry out routine operational research studies, to be used for mid-course correction of project strategies; and
- developing the capacity of an apex institution at the national level, to provide the states with on-going technical assistance for capacity strengthening of their evaluation institutions.

Developing the capacity of an apex institution would in turn have required international technical assistance, perhaps best delivered through twinning arrangements with foreign institutions.

In planning such a capacity strengthening effort, the Government and Bank would have needed to address three difficult issues:

- Given that capacity development takes much longer than the four to five year life of a typical Bank project, how should this assistance be packaged?
- Given that both Government and Bank staff are currently focused primarily on service delivery and disbursement issues, what training and incentives would they require to design and supervise an appropriate capacity-building effort, and what budgetary implications would adding such an effort to existing priorities have?
- If individual evaluation tasks are to be competitively bid to the private sector, but the private sector as a whole has weak capacity, can arrangements be made to strengthen its capacity? Or should the focus switch to in-house evaluation by strengthened government institutions?¹⁹

E. ISSUE 5: SECTOR ANALYSIS AND STRATEGY DEVELOPMENT

TINP I was based on extensive sector analysis. The late-1970s Tamil Nadu Nutrition Study both informed the project’s technical design, and built stakeholder commitment to its financing and implementation. But no further sector analysis was undertaken by the Bank until 1998, and this work (Levinson, 1998) looked at nation-wide nutrition issues, avoiding an analysis of TINP and its lessons.

¹⁹ The latter approach would raise issues with regard to a) complying with Bank procurement policies (which do not favor single source procurement), and the broader capacity-building goal of developing an appropriate public-private sector balance, and b) the need for the implementation of evaluation to be institutionally independent from the oversight of the quality of evaluation.

Could both TINP and ICDS have been more successful if Bank sector analysis had taken place earlier, and had focused, inter alia, on the issues emerging from TINP's implementation? What strategy questions might have been analysed, and why were they not?

Based on the knowledge gaps related to both technical and capacity development strategies identified earlier in this review, analytical work might have been productive on the following questions, among others:

1. Technical

- a) What was the best way to reduce PEM in mothers and moderate PEM in children, and in particular, what was the cost-effectiveness of maternal and child food supplementation, compared to other interventions?
- b) What was the relative importance of food insecurity as a cause of malnutrition, and what scale and type of response to it was appropriate?
- c) How effective was TINP in reducing malnutrition compared to ICDS in other parts of Tamil Nadu, and in Kerala, and what accounted for differences in performance?

2. Management and Capacity Development

- a) How could cooperation between TINP and the state's public health program be improved?
- b) What was the cost-effectiveness of TINP's field-based approach to training compared to ICDS' institution-based approach?
- c) How could communities and Panchayati Raj institutions be empowered to play a greater managerial role in the program?
- d) How might TINP have worked with the departments responsible for food security?
- e) What was the most appropriate institutional development strategy for the Communications and Training Center?
- f) What was the best way to develop evaluation and operational research capacity?

Some of these questions were identified and at least partially addressed, but not others. On the technical side, a great deal of attention was paid by the State Government and the Bank to item 1 a), although the questions were never satisfactorily resolved. TINP's strategies related to moderate malnutrition and food supplementation were developed informally, based on consultations during project preparation with experts in the national and international nutrition community, and on workshops during project implementation to which outside experts were invited. Items 1 b) and c) were not seriously considered. On the capacity development side, a great deal of informal work on item 2 a) was carried out during the preparation of TINP II. Some informal work (now lost) on item 2 b) was carried out by Bank consultants during the preparation of WCDP. Items 2 c)-f) were never systematically addressed.

It is not fully clear why sector work on the above issues was not carried out, but several possible reasons can be suggested. First, institutional development was not given high priority in TINP, and the need for analysis on items 2c)-f) seems not to have been identified. Second, TINP was being sold by the Bank as a success story; formal sector work looking at TINP's weaknesses might have undermined the Bank's attempts to sell its strengths. Third, the Social Welfare Ministry was keen to expand its nutrition program to national coverage as fast as possible, and had equally little incentive to initiate studies which might raise doubts among politicians, planners or financiers about whether it was appropriately designed. Fourth, the Bank wished to avoid any stand-off in its relationship with the central Government. Fifth, Bank staff may have been motivated by informal pressure to lend the large amount of money allocated for nutrition in India, as well as the belief that continuing project lending was essential to maintain 'a seat at the table' in strategy discussions. For some combination of these reasons, the Bank decided that it would be more productive to conduct its strategy dialogue with the Government on the basis of informal discussion, rather than formal analysis.

In the event, before the 1998 nutrition sector work was carried out, the Bank invested more than US\$400 million in TINP II and in two ICDS projects covering four states. The two ICDS projects made few strategy changes to the program, and were not positively evaluated. With the benefit of hindsight, it is open to question whether the Bank should have invested so much in nutrition in India, a) when there were serious issues about the cost-effectiveness of a number of the technical, management and capacity development strategies it was financing, and b) in the absence of a joint effort with the Indian Government to learn the positive and negative lessons from TINP I, and apply them to TINP II and ICDS.

V. CONCLUSIONS

Tamil Nadu's nutrition program is one of a very small number of community nutrition programs around the world which have made a significant impact on PEM on a large scale, and which have been sustained over a long period—from 1979 to 1998 with the original TINP strategy, and from 1999 to the present day with a mix of TINP and ICDS strategies. The lessons from how TINP was managed are therefore important for the design and implementation of programs in other countries, as well as India.

A. POSITIVE LESSONS

PEM reduction programs around the world have often performed poorly because they have failed to improve the way families care for their children. Some critics have concluded that it is impossibly difficult for nutrition programs to achieve quality growth monitoring and promotion—the main care-based intervention—on a large scale. TINP's most important overall lesson is that large scale growth promotion programs can work, if they are carefully designed and managed—and, if, as in the TINP case—investment in growth promotion is coupled with simultaneous improvement in the coverage and quality of primary health services.

The Bank has already highlighted some of TINP's positive lessons (World Bank 1990a and 1994). As with all development programs, it was important to build the commitment of key stake-holders, get the broad program strategies right, and appoint good managers, *at the sector level*. But an equally important positive lesson from TINP is the need for attention to *micro-level detail* as well, especially with regard to

- the planning of jobs, work routines and training curricula, and
- the processes for recruiting workers, involving communities, training, supervision and monitoring.

Appendix H sets out no less than 25 specific lessons from what TINP did in the above areas, in order to emphasize that the program's success was not due to a small number of 'magic bullets'. Good design and management involved getting a large number of things right at the same time; simply having a good sectoral strategy, or getting some field level systems right but not others, would not have been enough.

B. UNRESOLVED ISSUES

TINP did less well in sustaining commitment, in developing the capacity of OR, evaluation and other support services, in developing links between different nutrition-related programs, in empowering client communities, and in carrying out effective sector capacity and strategy analysis, than it did in the above

areas. TINP's management and capacity development failings have not been highlighted by most of the Government and Bank evaluations, yet this case study argues that they have equally important lessons for nutrition programs elsewhere.

Sustaining Commitment

Tamil Nadu's nutrition program has been sustained over more than twenty years, outlasting many other large scale community nutrition programs²⁰. This is a tribute to

- the solid institutional capacity for service delivery developed during TINP I;
- the decentralized approach to supervision and training, which ensures these functions continue, irrespective of what is happening at the level of program management; and
- the fact that local communities see the program as theirs, and wish to contribute to it and sustain it.

However, commitment to improving program quality and coverage of the poor has not been sustained. A low point was reached during the mid-1990s, from which the program partially recovered in the last two years of TINP II. But during the first half of the current project, WCDP, the focus on quality and coverage has again been lost. It is not clear whether commitment to quality improvement could have been maintained, in the light of deteriorating standards of governance in the State. But if institutions had been created to represent participating local governments and communities, and if these institutions had been informed about their entitlements under TINP II and WCDP, and given a formal role in program monitoring and management, then they might have been able to press for better support. Although TINP can fairly be described as a *community-based* program, its management has always been Government-dominated. This contrasts with *community-driven* programs, in which communities have the right to insist that procurement and disbursement delays or poor service quality should not be tolerated.

A second commitment-related issue is that the State's strong commitment to TINP I was never shared by the central Government, because TINP was implemented as a state rather than centrally sponsored project. The lesson is that, when assisting countries with federal systems of government, the Bank should be careful to maintain a dialogue with the central government, if it wishes to foster commitment to scaling up successful state-level interventions.

Professionalizing Operational Research and Evaluation

Like many other community nutrition programs around the world, TINP did not do enough to

- ensure the validity of impact evaluation, e.g. by matching control areas, and analyzing the extent and causes of secular trends
- evaluate process as well impact, e.g. the effectiveness of the processes used for improving nutrition-health cooperation in the field or for handling referrals
- ensure the usefulness of OR, by making sure that experimental designs were right, and that there were adequate arrangements for evaluating process and impact
- evaluate the relative cost-effectiveness of different strategies, e.g. of no food supplementation versus supplementing women versus supplementing children; the 'medical approach' to supplementation of children versus the 'social welfare' approach; or the TINP approach to training versus institution-based training.

The first of these problems has been highlighted in previous reviews of TINP. But the other three are of equal concern. Traditional impact evaluations tend to answer the question 'What happened?', rather than the equally important questions 'If it went wrong, why?', and 'What alternative strategies might have worked better?' Answering these other questions requires skills in documenting and analyzing

²⁰ For example, Tanzania's community nutrition program, as well known and successful as TINP in the 1980s, has since collapsed.

institutional change, and in cost and financial analysis, in addition to the statistical skills in which evaluators have traditionally been trained, in India and elsewhere.

Improving OR and evaluation will require both a new process to ensure that the right questions get asked, and a systematic OR and evaluation capacity development effort. Both would benefit from an international dimension. With regard to the first, the Bank, UNICEF and other key nutrition donors could assist by setting up a working group to determine key questions which need to be answered at the global level, and which of the programs they assist could help to answer them. With regard to the second, there is a need to systematically develop centers of excellence in OR and evaluation in India and other client countries, by providing them with long term technical assistance from centers of excellence elsewhere.

Mounting systematic capacity development programs in OR and evaluation would pose at least three challenges for the Bank. It would need to upgrade the skills of its own staff in these areas. It would need to think carefully about the appropriate vehicles for financing this kind of assistance, which takes place over a longer period than the life of a single project. And it would need to consider how the sometimes conflicting objectives of building capacity in the public sector, building capacity in the private sector, and promoting competition between public and private service providers can be reconciled.

Systematizing Capacity Development for Program Support

While the failure to develop OR and evaluation capacity was most striking, TINP would have benefited from more systematic attention to developing support service capacity in general. TINP I's institutional development efforts initially—and successfully—concentrated on the systems required for service delivery. When, at the end of the project, attention turned to developing support service capacity in the CTC, neither capacity development objectives nor an institutional development plan for the CTC were developed. This failure was repeated during the preparation and appraisal of both TINP II and WCDP. Nor was there any formal review of CTC's capacity either as part of the project evaluations or independently.

As the Bank's evaluation department has pointed out (World Bank, 1999), inadequate attention to institutional capacity development is common in the Bank's health nutrition and population portfolio. Doing better will require Governments and the Bank to

- develop 'best practice' case material and more systematic procedures for capacity development in nutrition; improve the skills of their staff in this area, budget more staff resources for capacity development during both project preparation and implementation; and
- make institutional development objectives a formal part of project objectives, so that capacity development plans get incorporated into project appraisal reports, and progress in implementing these plans is monitored and evaluated.

Linking Care, Health and Food Security Interventions

One of TINP's strengths was its focus on a few selected interventions in child care and maternal and child health, which made the program manageable. But TINP's emphasis on care and health came at the cost of attention to household food security, which was also a major problem. The Government financed food security-related programs, but failed to develop linkages between these programs and the nutrition programs. This case study has argued that, while still avoiding direct financing of hard-to-manage food security interventions, the nutrition programs could have done more to improve food security by identifying target clients for the food security programs.

The separate packaging of care/health-based and food security-based nutrition programs is not peculiar to India. If Governments and the Bank were to try to link food security and care-based programs so as to maximize their synergy, they would need to deal with management and capacity development issues such as

- developing links between policy-makers in different programs, building commitment to cooperation, and developing processes for cooperation at the sectoral level
- designing processes for cooperation in the field between the workers of different programs, e.g. for identifying priority clients for food security interventions, for facilitating their access to services, and for the joint monitoring of performance
- developing procedures for process and impact evaluation of an integrated care-health-food approach to PEM reduction.

Moving Toward Community Empowerment

Though TINP did much to involve communities in implementation, and community support was a major factor in the program's success, TINP did not attempt to develop local communities' capacity to manage their local nutrition program. This should arguably have been a program objective, with development benefits in itself, as well as possible benefits in terms of reducing malnutrition. One consequence of the failure to empower as well as involve communities was that no community capacity to manage implementation was available to complement or substitute for central program management capacity, when the commitment and integrity of the state level Project Coordination Office declined during TINP II. Another was that there was no community voice to support or oppose the move from TINP strategies to ICDS strategies at the end of TINP II.

More recent Bank-assisted projects, such as the Bangladesh Integrated Nutrition Project—which is essentially a further development of TINP—are paying greater attention to building community level management capacity. But two major clusters of issues remain to be systematically addressed. The first, which is just beginning to be addressed, and is likely to require quite different responses in different country environments, relates to

- how far and how fast it is realistic to move in empowering communities to manage nutrition programs, in the context of a given level of local government development²¹; and
- what kind of training or technical assistance is most appropriate for community capacity development.

The second cluster of issues is more fundamental, and remains to be addressed. It relates to whether the goal of empowerment should be limited to increasing community capacity to manage nutrition programs, or whether it should also include empowering communities to decide on which nutrition interventions they want in the first place. Within the Bank, staff helping Governments to prepare *nutrition projects* generally proceed on the assumption that interventions should be determined by Governments and donors, after systematic consultation with client communities. But Bank staff helping to prepare *community development projects*, which can include nutrition interventions, proceed on the assumption that clients must determine the content of their own development programs. Yet, if a community development approach had been followed in TINP, it might have led to a complex program with multiple nutrition interventions, which would not have been successfully implemented.

Interest in Community Driven Development, based on communities defining their own development needs and interventions, is currently growing fast within the Bank, with support from its top management. One conclusion from the TINP experience is that there may be a trade-off between the benefits of a fast rate of malnutrition reduction, derived from concentrating on a few interventions determined by Government based on careful sector analysis and community consultation; and the capacity-building benefits of full community development, derived from empowering communities to determine their needs and plans. It would be valuable to open a dialogue, both in developing countries and in the donor community, between those who are currently advocating these two different approaches.

²¹ In the Bangladesh project, for example, community capacity to monitor the nutrition program is currently being developed, since the powers and responsibilities of local government in Bangladesh have yet to be defined.

Carrying Out Effective Sector Capacity and Strategy Analysis

Formal sector analysis is only one approach to developing strategies for management and capacity development; in different circumstances, other approaches, such as holding stakeholder workshops, consulting the academic community, hiring short term technical assistance or carrying out operational research, can be appropriate alternatives. Nevertheless, in the case of the Indian nutrition program, three factors—uncertainty about the effectiveness of several key program strategies, poor definition of strategies for institutional sustainability, and the amount of money being invested by the Bank—suggest that formal sector work should not have been delayed as long as it was. Certainly, when sector work was carried out, it should have covered key institutional issues, such as how to develop capacity in evaluation and how to promote community empowerment to ensure institutional sustainability, and not just the technical and financial policy issues to which the Bank's 1998 nutrition sector review was limited.

The Bank's evaluation of its nutrition, health and population project portfolio (World Bank, 1999) shows that institutional development issues have been generally neglected. In that context, it would be useful to develop a check-list of key institutional issues in nutrition at the sectoral level. Such a list could be used by Governments and the Bank as a starting-point for determining which issues need pursuing in particular country contexts. Beginning with the check-list, a system could be developed for reviewing each issue to determine a) the extent of the gap in knowledge, strategy or implementation, b) the gap's importance, in terms of the program's current cost-effectiveness and future sustainability, and hence the priority of filling it, and c) if a priority, the appropriate approach and resource requirements for filling it. A precondition for pursuing such an approach would be acknowledgement by managers in the Bank that institutional strategy issues are as important as the technical and financial issues in which most Bank staff are more expert, and on which most staff time is consequently spent.

VI. APPENDICES

A. IMPROVING NUTRITION: ISSUES IN MANAGEMENT AND CAPACITY DEVELOPMENT

EXECUTIVE SUMMARY

Most of the technologies needed to eliminate malnutrition as a public health problem now exist. The Bank has invested nearly US\$2 billion to diffuse these technologies through nutrition projects and programs, but with mixed results. The Bank has found that management problems, related to limited capacity to implement what is planned and budgeted, have held back improvements in nutrition. In most client countries, poor management presents a greater barrier to progress than the lack of good interventions, and as large a barrier as shortage of finance or lack of political commitment. In some countries, limited implementation capacity obliges the Bank to lend less than it would otherwise for nutrition, based on need.

The Bank has not yet defined the main issues in management and capacity development in nutrition nor has it developed methodologies for governments and project staff to identify and deal with these issues and systematically improve capacity. This issues paper is intended as a starting point for developing the Bank's professional capacity in nutrition management and institutional development. The nutrition community is invited to:

- Comment on or add to the issues set out in this paper.
- Suggest methodologies or conceptual frameworks that could be useful.
- Point out country or project cases from which lessons can be learned.
- Suggest projects in the planning stage that could be developed as “best-practice” cases for process documentation and dissemination.

The scope of this paper is limited to three priority areas: sectoral capacity analysis and strategy development; the management of multisectoral nutrition programs at country level; and the implementation of community nutrition programs for preschoolers and their parents (these usually include interventions for growth promotion and micronutrient supplementation). It does not attempt to deal with the implementation of school-based nutrition programs for older children; direct food or income-transfer schemes for the very poor and nutritionally vulnerable; food security and income-generation programs that have an indirect impact on nutrition; or food fortification.

A dozen sets of issues are detailed in the body of this paper. The first four relate to program management problems; the next five, to sector-level problems; and the last three, to development assistance management problems. The issues are:

Issue 1—Community Empowerment and Decentralization

Programs for growth monitoring and promotion and for micronutrient supplementation are acknowledged to work best when communities and local governments are involved in their design and management. Though part of the rhetoric, decentralization, community participation, and empowerment are seldom effectively implemented. Unresolved issues include finding ways to determine realistic decentralization and participation levels in different environments, and management structures and processes that best encourage them.

Issue 2—Staffing and Job Design

Volunteers delivering nutrition services at the community level often have insufficient time, skill, or incentives to do an effective job, and full-time paid staff members are often health workers overburdened with duties or clients. The issues in staffing and job design relate to the use of volunteers or paid workers or some combination; appropriate staff-client ratios; the number and type of tasks that can be handled; design of daily, weekly, and monthly work routines; and choice of performance incentives that best ensure quality and sustainability.

Issue 3—Supervision, Training, and Referral

Field nutrition workers, whether volunteers or government personnel, are seldom adequately trained and supervised, or supported by a strong referral system. The technical content of training is often well developed, but some questions have been inadequately explored. They include: what other types of training should field staff receive; which processes work best for pre- and in-service training; how can supervision be reoriented to be more supportive, while maintaining accountability for performance; and how can completion, proper diagnosis, and follow up on referrals be ensured.

Issue 4—Program Monitoring and Evaluation

Problems in program monitoring and evaluation include unwieldy systems that take up too much staff time and deliver data late or to the wrong users; and misdirected emphasis on performance statistics instead of service quality and client satisfaction. The challenges are: to design systems that serve the needs of clients as well as managers; and to collect enough quantitative and qualitative information without overwhelming field workers and processing systems. (The Bank's increasing and necessary insistence on improved monitoring and evaluation is overstressing many countries' capacity to deliver in this area.)

Issue 5—Sectoral Capacity Analysis and Strategy Development

The sectoral context affects what can be done at the program level. It includes: the capacity of the health and social welfare sectors through which many community nutrition programs are implemented; the general civil service environment, including the standard of governance and rules concerning pay, postings, and transfers; and the presence or absence of institutions or cultural traditions that can foster community participation and empowerment. The questions to study: how can sectoral capacity analysis be improved and what is the best way to prepare sectoral capacity-development strategies.

Issue 6—Understanding, Commitment, and Behavioral Change

Understanding and consensus on the causes of malnutrition and the seriousness of the problem are limited. For this and other reasons, commitment to implementing solutions is weak. The question to address is how should the process be managed so as to increase understanding and commitment and promote appropriate behavioral change among the many stakeholder groups involved in nutrition.

Issue 7—Managing the Nutrition “Sector”

Because nutrition cuts across sectors, managing the nutrition “sector” is problematic. The questions to address include: where should nutrition's home be located in government; and what are the best processes and incentives for coordinating and managing a country's overall efforts in nutrition within its specific management structure.

Issue 8—Managing Nutrition Program Support Organizations

Many line agencies implementing nutrition programs depend on specialist organizations for support in areas such as management training; information, education, and communication; research; and monitoring and evaluation. Issues common to the management of these support organizations include finding ways to: get the right balance between government, nongovernmental organizations (NGOs), and private sector

support; divide roles and responsibilities among organizations; promote competition while avoiding duplication; develop individual support institutions as centers of excellence that are responsive to program needs.

Issue 9—Tools for Institutional Analysis and Capacity Development

The Bank has no generally accepted tools for capacity analysis and development or for bringing about institutional change through nutrition projects. The question to address is which tools can be usefully imported and applied from experience in other sectors and different environments, from other development agencies, from academia, or from the consulting industry.

Issue 10—Building Technical Assistance Capacity

Both foreign assistance agencies and countries implementing nutrition programs suffer from capacity problems, including insufficient trained staff to provide effective assistance on technical aspects of nutrition or on management and capacity building. The question to address is how can the Bank strengthen its capacity in this area.

Issue 11—Improving Donor Cooperation

Donors could also do more to coordinate their projects and procedures. Questions to address include: can the Bank and UNICEF, already partners in nutrition, work more closely with each other and with other agencies to make the most of their comparative advantage in different areas; can donors lighten the administrative load they put on countries' scarce aid management capacity by developing fewer projects, but ones which are based on co-financing mutually agreed nutrition and capacity-development strategies?

Issue 12—Improving Coordination Across Sectors

Donors as well as countries have difficulties coordinating their nutrition efforts across sectors. Questions to answer include: how can "indirect" nutrition programs be targeted to clients whose problems cannot be solved by direct nutrition programs alone; and how can nutrition be incorporated into the multisectoral approach to community-driven development.

Priorities suggested for a work program in management and capacity development in nutrition include:

- Preparing *case studies of successful nutrition projects and programs*, focusing on what they did right in management and capacity development, and which issues they left unresolved. This is a gap in the current nutrition literature, which focuses mainly on technical design and impact evaluation.
- Developing practical *procedures for sectoral institutional analysis and strategy development*. Joint development of such procedures with the donor community would be a useful first step toward building a donor partnership to address nutrition-management issues.
- Applying these procedures to *preparing some best-practice nutrition projects with strong emphasis on capacity development*, cofinanced by the Bank and UNICEF, and perhaps also by bilateral partners. These projects would be an opportunity to test new approaches to donor cooperation.
- Assigning individuals or *creating groups to focus on management and capacity-development issues in nutrition*, with a mandate to act as a clearing house for information; to contribute to the tasks suggested above; and to disseminate work program results to agency staff and developing-country partner institutions. In the case of the Bank, the size of the nutrition portfolio and the centrality of capacity-development problems to the portfolio's health call for the creation of a small core team to work on these issues.

- Facilitating the creation of an informal, *interagency experience-sharing network* on nutrition management and capacity development. Through the network, identifying individuals and institutions in developing countries with strengths in nutrition management and capacity development, who could become part of a broader, North-South network interested in these issues.

Source: Heaver (2002)

B. THE IMPACT OF TINP I

How Much of the Change is Attributable to TINP?

The observed nutritional improvements can be attributed to TINP only if the effects of other factors that might explain the improvements can be separated out. This is done in two stages, first comparing changes within the TINP districts with changes that occur in other (non-TINP) areas, and second, considering the differential impact of other programs operating within TINP areas—the one of interest here being the noon meal program.

Three bases of comparison with changes in malnutrition rates elsewhere are available. The *first* involves data from TINP and non-TINP districts in Tamil Nadu estimated by the National Nutrition Monitoring Bureau (NNMB). These data (computed from Shekar et al, 1993) indicate declines in the percent malnourished (more than 75% below the reference median W/A) in three non-TINP districts of 0.26 percent (Thanjavur), 0.79 percent (Nilgiris) and 1.12 percent (Kanyakumari)²². These can be compared with the figures given above for the three TINP strata. They can also be compared with NNMB data for TINP districts—1.96 percent for Madurai (Stratum One), 1.07 percent for Ramanathapuram (Stratum Two minus Pudukottai District) and 1.75, 1.61 and 0.83 percent for the three districts in Stratum Three (Tirunelveli, Chengalput and N. Arcot)²³. Both sets of numbers suggest that the improvements that occurred in TINP areas were several times greater than those occurring elsewhere.

Second, an interim NNMB survey in 1984 suggests that much of the decline in underweight prevalence in Tamil Nadu as a whole occurred after 1983 (with practically no change between 1977 and 1983)—precisely the time when the TINP was underway in several districts covered by the NNMB surveys. This, despite the fact that NNMB also reported a decline in average energy intake between 1979 and 1988/90.

Third, the Z-scores for the TINP strata can be compared with those derived from all-India data from other sources indicating that the percent of children more than two standard deviations below the reference mean has declined by roughly 0.7 percentage points per year in India as a whole over the last decade and by one percentage point a year in South East Asia during the last 15 years (ACC/SCN, 1992a and b). The figure for South East Asia is particularly striking because of the rapid rate of economic growth in this region during the last two decades and the presence there of several large scale nutrition and health programs.

A sizeable portion of the improvements in nutrition that have occurred throughout the world have resulted from increases in per capita incomes. Between 1982 and 1990, per capita GNP in constant prices increased by about 22 per cent in Tamil Nadu (Government of Tamil Nadu, 1991). Applying an elasticity

²² Caution must be exercised in the direct comparison of the data from this study and the NNMB data for two reasons. First, the two data sets are not identical, and data quality and sampling techniques vary between the two. Second, the estimation for TINP areas is based on the eight-year period between 1982 and 1990 while that for non-TINP districts is based on an eleven year period between 1979 and 1990. This caveat notwithstanding, in the absence of any other district-level data for non-TINP areas, we use these data as above for an external comparison of changes in under-weight prevalence.

²³ NNMB-estimated underweight rates for each district are consistently higher than those estimated in this study. Two factors can explain this discrepancy. First, NNMB surveys cover the districts as a whole, while our data are limited to TINP participants only (though both regular and irregular participants are included). Though participation rates are estimated to be high, some of the discrepancy therefore reflects the differences between program participants and non-participants within the same districts. In that sense, the NNMB data reflect program effectiveness, while results from this study reflect on program efficacy. Second, NNMB surveys use small sample sizes, which detracts from the validity of their results. Seasonal variations may also be involved, but NNMB does not report on the month of measurement, thus precluding any judgements on that count.

for changes in malnutrition resulting from changes in income derived from the Second Report on World Nutrition (ACC/SCN, Vol II, pg 111, 1992b), one would expect a 0.66 percentage point annual decline in underweight prevalence in Tamil Nadu attributable to changes in per capita GNP during this period.

Roughly averaging the TINP figures together suggests the conclusion that somewhere between one fourth and one half of the decline in malnutrition in TINP areas is likely to have occurred in the absence of other nutrition programs in those areas. This leaves a sizeable, potential contribution due to TINP.

Could a significant portion of the decline in TINP areas be due to other programs, in particular the noon meal program (NMP), which was concurrent with TINP in several districts?²⁴ It seems unlikely. First, the NMP caters to children 2-14 years of age, overlapping with TINP in only the last of the latter's two and one half years of coverage. The earlier year and a half is the period in which the nutrition literature suggests supplementary feeding programs are likely to have their greatest effect. Second, this literature also suggests that the education/counselling aspects of these programs are at least as important as the provision of food per se; but the NMP provides only food. Third, the net addition to the diet of the participants is likely to be substantially less than the amount of food provided because they are likely to receive less food at home. Finally the regression equations presented in Tables A-10 and A-11 [not attached] suggest that, other things being equal, children from NMP blocks were worse off in all years than those from non-NMP blocks. This result might have occurred because, as indicated in the regression equations of Table 5.1 and 5.2 [not attached], participation in TINP was higher in non-NMP than in NMP blocks, at least in two of the three years investigated.

These conclusions are further strengthened by the fact that the W/A Z-scores are similar before and after 24 months of age, suggesting that the NMP does not confer any additional benefit to the 24-36 month age group (which is covered by both TINP and NMP. This is especially important in light of the fact that much of the growth faltering occurs before two years of age, and that after this age, the gap between the international norms and observed growth does not increase, so that once the weight deficit has set in (before two years), children after two years of age continue to grow at rates that are similar to the international norms. Once again this suggests that the potential benefits of any intervention may be concentrated in the under-two age group, and that efforts such as the NMP which starts at age two and the ICDS which starts at age three are unlikely to have had any significant impact on child growth.

Source: World Bank, 1994, pages 16-18

²⁴ Other nutrition-relevant programs in Tamil Nadu such as the ICDS did not overlap geographically with TINP-I.

C. INFORMATION DISPLAYED TO THE PUBLIC AT TINP CNCs

1. Population of area
2. Number of children 0-3
3. Number of children 0-3 weighed last month
4. Number of children enrolled for feeding
5. Number of children coming for feeding
6. Number with grade three and grade four malnutrition
7. Number graduated out of severe malnutrition
8. Number of children losing or with static weight
9. Number of children under special observation
10. Number of 9 coming into the feeding program
11. Number of children graduating from supplementary feeding last month
12. Number of children relapsing into supplementary feeding this month
13. Number of mothers receiving ante-natal care

Source: World Bank, 1990

D. KEY MONTHLY INDICATORS PREPARED BY THE TINP PROJECT COORDINATION OFFICE

1. a) Number of children 6-36 months/total population
b) Number of children 6-36 months newly entered the program/number of children 6-36 months
2. Number of children 6-36 months weighed/number of children 6-36 months
3. Number of children eligible for feeding/number of children weighed 6-36 months
4. a) Number of children 6-24 months in normal and first grade malnutrition/total number 6-24 months weighed
b) Number of children 25-36 months in normal and first grade malnutrition/total number 25-36 months weighed
c) Number of children 6-36 months in normal and first grade malnutrition/total number 6-36 months weighed
d) Number of children 6-24 months in grade 2 malnutrition/total number 6-24 months weighed
e) Number of children 25-36 months in grade 2 malnutrition/total number of 25-36 months weighed
f) Number of children 6-36 months in grade 2 malnutrition/total number of 6-36 months weighed
g) Number of children 6-24 months in grades 3 and 4 malnutrition/total number of 6-24 months weighed
h) Number of children 25-36 months in grades 3 and 4 malnutrition/total number of 25-36 months weighed
i) Number of children 6-36 months in grades 3 and 4 malnutrition/total number of 6-36 months weighed
5. Number of children receiving food supplement/number of children 6-36 months
6. Number of children receiving supplement in current month/number of children eligible for supplement in previous month
7. Number of children entering feeding for the first time/total number of children weighed
8. Number of children under feeding for >3 months/total number of children under feeding
9. Number of children under feeding for >6 months/total number of children under feeding
10. Number of children graduated in 90 days/number of children fed in last 3 months
11. Number of children graduated in 120 days/number of children fed in last 4 months
12. Number of children graduated in 150 days/number of children fed in last 5 months
13. Number of children graduated in 180 days/number of children fed in last 6 months
14. Total number of children graduated/total number of children in feeding minus number of children under feeding in first and second month

15. Number of cases of first relapse/number of cases graduated during last 6 months
16. Number of cases of second relapse/number of cases graduated during last 6 months
17. Number of total cases of relapse/number of cases graduated during last 6 months
18. Number of children absent for 5 days or more/number of children receiving food supplement
19. Number of pregnant women entering feeding in third trimester/number of pregnant women in third trimester
20. Number of pregnant and nursing women receiving supplement/number of pregnant women in third trimester and nursing women in first four months
21. Number of women absent for 5 days or more/number of women receiving food supplement
22. Number of children <3 years old given vitamin A/number of children <3 years
23. Number of children <3 years old dewormed/number of children <3 years
24. Number of diarrhea cases treated by CNW/number of children affected by diarrhea
25. Number of children affected by diarrhea/number of children 6-36 months
26. Number of diarrhea cases referred to MPH/number of cases treated by CNW
27. Number of drop-out cases/number of children under feeding during the quarter

Source: Shekar, 1991

E. TRIGGER POINTS FOR INTERVENTION BY THE TINPPROJECT COORDINATION OFFICE

Information Reported	Action Initiated
Quality of Project Inputs	Remedial action notices issued if percentage is < or > the following:
Coverage for weighing (6-36 months)	< 80%
Coverage for feeding (6-36 months)	< 20%
Coverage of pregnant/lactating (feeding)	< 10%
Number of pregnant/lactating entering feeding each month	< 1%
Vitamin A prophylaxis (last six months)	< 30%
Deworming drug (last month)	< 40%
Quality of Project Outputs	
Number of grades 3 and 4 (6-36 months)	> 10%
Number entering feeding per month	< 2%
Number fed > 3 months	> 40%
Number fed > 6 months	> 20%
Number graduated in 90 days	< 50%
Total number graduated	< 30%
Number of relapsed in last month/number graduated in last 6 months	> 3%

Source: Shekar, 1991

F. TINP FEATURES NOT FOUND IN ICDS

Community Involvement

1. Women's, children's and adolescent girls' working groups exist in every village
2. Women's groups are formed prior to the introduction of services
3. Women's groups have clearly defined roles in community preparation (including explaining the service package to which clients are entitled, and the idea of selective feeding) and in IEC
4. Community growth charts are displayed at each Community Nutrition Center (CNC)
5. Monitoring information is chalked up for the community to see at each CNC, and updated monthly

Service Delivery

6. Two worker model, with one worker focused only on 0-3 age group
7. Mothers keep their children's growth charts, and growth charts are used for education
8. The bubble chart is used, because it is easier to understand
9. Growth faltering as well as grade II and III children are supplemented
10. Supplementation is done early morning, when a) more mothers are available to bring their children, and b) there is less likelihood of the supplement substituting for a main meal
11. The supplement is a laddoo, not a meal, again reducing the likelihood of substitution
12. Feeding is on the spot. Take-home is discouraged because of sharing, and because it reduces mothers' participation at the CNC
13. Community Nutrition Workers (CNWs) systematically home visit those who don't come for weighing and feeding, and non-responders
14. A referral slip is used to track referral of grade IIIs and non-responders, and feed back diagnoses

Training and Supervision

15. There is one supervisor for every 12-15 CNWs
16. All CNW training, both pre-service and in-service, is carried out at the block level
17. There is a special worker, the Community Nutrition Instructress (CNI), in each block, who is in charge of training in that block, and who is simultaneously the block's technical supervisor
18. CNIs were trained at a Home Science college in the state, and are the linchpin for quality in TINP

Source: World Bank Aide-Memoire

G. TINP II OPERATIONAL RESEARCH STUDIES

Study	Impact
Child stunting in project and non-project districts	Helped developed IEC strategy for colostrum feeding and safe birth intervals
Formative research and strategy design for communications component	Used to modify existing IEC strategies and develop new ones for WCDP
Condition report on bar scales	Used in assessing scale requirements
Rapid assessment survey on the effectiveness of training on birth weight recording	Periodic training of CNWs improved their skill and attitude
Study on severely malnourished children in selected CNCs to observe if they belong to at-risk families and correlation to income and literacy	Study enabled the project to better combat malnutrition
Survey to assess effectiveness of functioning of one-worker model versus two-worker model and resident versus non-resident worker model	Study showed that resident worker and two worker model work better
Study on the extent of migration of ante-natal/post-natal mothers, by monitoring wing, TINP	No significant difference between actual number of ante-natal women and number registered. Migration was only 7%

Source: Summarized from World Bank, 1998: Table 6, pages 27/28

H. TINP: SPECIFIC PROGRAM DESIGN AND MANAGEMENT LESSONS

1. Thorough ‘sector analysis’ of malnutrition and its causes, and of the strengths and weaknesses of existing nutrition programs, helps identify effective program strategies. But it is also key to building understanding and commitment among stake-holders, whose support is needed both for the initial decision to invest, and during implementation.
2. The core program management team must not only be technically qualified, but must consist of individuals with access to policy-makers and program financiers, and who have a high degree of motivation and integrity.
3. Having a detailed Program Implementation Manual is a good way to ensure that managers and senior supervisors have a common understanding of the program. It is also important for briefing new managers, given the unavailability of turnover in most developing country environments.
4. Designing a program to focus on a selected number of key interventions increases the chances that they will be done well: both village level workers and state level managers can focus on a feasible set of tasks.
5. Targeting a limited number of priority clients who are at high nutritional risk also helps make community nutrition programs manageable, as well as cost-effective.
6. Choosing community workers who are residents of the village they serve is crucial, both in terms of their acceptability to clients, and in terms of their availability at the right time--usually early morning and late afternoon, when poor clients are most likely to be available.
7. Selecting workers who are poor but have well nourished children is an innovative and important recruitment criterion: such mothers have a head start in providing IEC, because they have already proved it is possible to bring up healthy children on a low income.
8. Designing clear monthly and weekly work routines helps workers to prioritize tasks and clients, ensures clients know where their workers will be and what services they have to offer, and makes supervision easier.
9. Paying community workers can increase their accountability for performance. Also, paid workers can be expected to work 6-8 hours a day, so that smaller numbers are needed than in volunteer-based programs.
10. Small honoraria can be a sufficient financial incentive for community nutrition workers since, if the program is successful, workers are also motivated by the appreciation they receive from the community.
11. Having a smaller number of paid community workers makes it cost-effective to give them substantial pre-service training, which ensures they can carry out growth promotion professionally.
12. Having a smaller number of paid community workers also makes it cost-effective to have a high ratio of supervisors to community workers, making it possible to give workers regular support.

13. Trainers and supervisors are most effective if they combine good academic qualifications with well designed, *non-theoretical*, project-specific training.
14. Pre-service training need not be carried out at training institutions; training in the field by workers' supervisors-to-be is an innovative and effective alternative.
15. Field-based in-service training by workers' supervisors during implementation is also an alternative to institution-based refresher training. Since trainer-supervisors have a continuing relationship with trainees, they know their weaknesses and can adapt both the quantity and content of training to each worker's needs.
16. Cooperation between health and nutrition workers can be fostered by:
 - clearly specifying the tasks of each set of workers
 - instituting joint training courses
 - emphasizing the commonality of their goals, and how cooperation can help both workers achieve their targets.
17. IEC strategies should focus as much on explaining the program to the community and mobilizing community support, as on persuading individual clients to change specific nutrition-related behaviors.
18. Forming support groups of women and adolescents who get special training in the program can be a good way of widening support in the community. Volunteers from the women's groups can also help paid workers deliver services.
19. Providing program food supplements only to those who need them on nutritional grounds, as opposed to all poor clients, not only reduces program costs, but increases community support for the program, since a broader range of families benefit from supplementation over time.
20. Providing program food supplements for short periods can be an important IEC tool; it shows mothers that feeding small, affordable, additional amounts of food can prevent or cure malnutrition.
21. Monitoring systems work best if they generate data for use by community workers and local communities, as well as for management.
22. Displaying key performance information on the outside walls of nutrition centers helps communities to see the benefits of the nutrition program, provides a performance incentive for workers, and makes supervision easier.
23. If the number of indicators is limited, and the monitoring system is well designed, it is possible for monitoring data to reach management within a month of collection, and for feedback to be given to workers the following month.
24. It can be useful to establish a system of trigger points for a few key indicators, which allows poor performing units to be automatically identified by computer, for special attention by supervisors down the line ('management by exception').
25. Regular validity tests of a sample of growth monitoring data, through check-weighings by the program monitoring unit, is useful both as a way of assessing training needs and in keeping the monitoring system honest.

Lessons from what TINP did *not* do in the above areas include the need to

1. limit the number of indicators, forms, registers and reports, so that record-keeping and reporting do not take up too much of workers' time
2. limit the number of performance indicators used by management to those which are immediately useful for improving performance. Indicators which are primarily useful for program redesign should be collected by researchers and evaluators, rather than through the program monitoring system.

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ISBN 1-932126-68-6