

CATCH THEM YOUNG

*The Tamil Nadu Integrated Nutrition Project:
Taking nutrition and health services
to the villages*
Selina Chaubey

The World Bank
Washington, D.C.

Table of Contents

Introduction	3
Foreword	4
Authors Note	7
Chapter 1: A program that cares	8
Chapter 2: Nutrition, education, and health: an effective threesome	14
Chapter 3: Away in a hamlet	20
Chapter 4: Special groups	23
Chapter 5: Innovative outreach schemes	28
Chapter 6: People who make it work	32
Chapter 7: Modes of persuasion	38
Chapter 8: Outcomes	47
References	54

Introduction

Over the past two decades, the World Bank has taken the lead in lending for projects that support nutrition, health, population, reproductive health, and education programs in developing countries. Of the nutrition projects implemented around the world, the Tamil Nadu Integrated Nutrition Program in India has been one of the most successful. The project has contributed significantly to a reduction in malnutrition and infant mortality in the state and has generated popular participation. Various lessons emerge from this project that are worthy of wide dissemination, both because they are replicable and because they offer design changes that may be made in similar projects.

Nutrition projects are, by nature, multidisciplinary. A large number of people of varied backgrounds take part in their design and implementation, ranging from community workers to international experts in various fields. For this reason, a nontechnical presentation of project lessons may be more effective in reaching participants at various levels than a technical analysis. This report, with its narrative style of presentation, represents a new genre in development communications. It brings the project to life through storytelling and the use of images, and gives a close-up view of the ground while encompassing all aspects of implementation. Depicting project messages, input, outcome, and impact in this manner enhances their universal appeal and helps ensure that the results reach all stakeholders.

In the future, this kind of analysis and presentation could be used increasingly in areas in which it is important to bring out the human dimensions of development.

Foreword

For many people, nutrition conjures up an image of vitamin pills and canned peaches, and many hold the notion that neglect of nutrition does not have serious consequences (Berg 1973, 1987). Malnutrition does indeed lack the drama and visibility of a catastrophe such as a famine or a war, but it is a relentless killer that takes its toll world-wide, unobtrusively. Its chief targets are young children and their mothers. Malnutrition is implicated in more than half of all child deaths world-wide a proportion unmatched by any infectious disease since the Black Death. Vitamin and mineral deficiencies are estimated to cost some countries the equivalent of more than five percent of their gross national products in loss of life, disability, and reduced productivity. By this calculation, Bangladesh and India forfeited a total of \$18 billion in 1995 (UNICEF 1998).

In India, more than half of all children under five years old are severely or moderately malnourished. The comparable figure in sub-Saharan Africa is 30 percent. The situation in India is equally bad for women, many of whom are chronically undernourished and anemic. Almost one-third of all babies have a birth weight lower than normal. This level has remained constant for more than a decade. In the southern state of Tamil Nadu, which is the focus of this report, the average daily food intake was found to be among the lowest in India during the late 1970s. At that time, several nutrition programs were launched in the state at an annual cost of about US\$9 million. Still, malnutrition continued to be the leading or associated cause of 75 percent of deaths among children under three in the state (World Bank 1991, 1994).

Most of the programs were not tightly targeted. The Public Distribution System, for instance, increased families overall food security through subsidized staple foods but did not reduce malnutrition among very young children. The Nutritious Meals Program confined itself to feeding, to the exclusion of nutrition education or coordination with health services. In addition, it did not cover infants or pregnant women. The Integrated Child Development Services (ICDS) scheme, which began in 1975, brought a package of nutrition, health, and preschool services to children under six, but the extent of its operations was limited. Further, it lacked real community participation (Heaver 1989) and did not involve adolescent girls, a special group in need of nutrition education and care.

To overcome the shortcomings of these programs, the state government launched the Tamil Nadu Integrated Nutrition Project (TINP) in 1980 with a US\$32 million credit from the International Development Association (IDA), the World Bank's concessionary lending affiliate. The project set out to reduce severe and moderate malnutrition among children under four years old by half, to reduce infant mortality by 25 percent, to reduce Vitamin A deficiency in children under five from 27 percent to 5 percent, and to reduce anemia in pregnant and nursing women from 55 percent to 20 percent. Results were encouraging, and the project brought down severe malnutrition among children six months to five years old by half. But the impact on moderate malnutrition was less than desired. Some children failed to respond because of sickness, and a large number of those who graduated from feeding relapsed. Further, the project did not succeed in

reducing anemia among children and expectant and nursing mothers. Lack of effective collaboration between health and nutrition workers in the field was found to be the main cause for the project's short-comings in this regard.

The Second Tamil Nadu Nutrition Project (TINP II) began in 1991 to address these problems. It combined the best features of the first TINP and other programs, such as the ICDS. A key change was the addition of preschool education to the program. The idea was to provide nutrition, health, and preschool services to young children under one roof. Early stimulation and preschool education are recognized as key contributors to early childhood development. A strategic change was the focus on expectant mothers, who would receive a full range of antenatal services, including iron and food supplementation. In addition, *all* children with moderate malnutrition would receive food supplements, instead of only those who showed faltering growth. The project design stressed beneficiary participation, through groups for women and adolescent girls and special community organizations. The project also called for new approaches to reach outlying hamlets.

An outstanding feature of the program is the broad-based participation that it has been able to generate. Although TINP addresses the most vital aspect of human development, it does so through a colorful array of song, dance, and drama that reaches into the hearts of health workers and beneficiaries. This report is based on visits to the project office in Chennai, interviews with people connected with the project, and field trips to five districts of the state. Although these districts were selected in consultation with project authorities as representative of various program aspects, this report does not claim to be a comprehensive evaluation. Rather, it offers glimpses into the lives of people who give meaning to the Tamil Nadu Integrated Nutrition Program. The Bank-aided TINP II officially came to a close on December 31, 1997. But, at the writing of this report, program activities continue as part of the ICDS, with the help of funds from the state and central governments. These activities will soon become part of the Woman and Child Development Project to be implemented in Tamil Nadu and four other states of the country, with support from the World Bank. Richard Skolnik led the Bank's work in health, nutrition, and population in India throughout the period of TINP II implementation. He provided invaluable support to staff working on the project and help for this report and other efforts to disseminate lessons learned. Selina Chaubey, the author, and I would like to dedicate this report to the women and children of Tamil Nadu.

Anthony Measham

New Delhi, June 1998

Author's Note

I wish to thank officials of the Departments of Health and Social Welfare, Government of Tamil Nadu, for their cooperation. In particular, I appreciate the efforts of Mrs. Lakshmi Pranesh, Secretary, Social Welfare. I am deeply indebted to the TINP Project Coordinator, Mr. G. Ramakrishnan, and his Joint Coordinators for their support during the February 1998 mission. I also wish to express my gratitude to Shri G. Kumaravel, P. Mohan, and Madhiabhagan, who accompanied me on my visits and provided invaluable assistance. Ms. K. Shanthaganam made a special contribution with her help in Thiruvannamalai. The nutrition staff in all the districts lent valuable support. Dr. P. Subramaniyam, former TINP I Coordinator, provided encouragement and timely advice. Special thanks are due to Dr. Anthony Measham, who planned, inspired, and provided guidance for this exercise, and to Rebeca Robboy for helpful comments.

*Selina Chaubey
April 10, 1998*

Chapter 1

1. A program that cares

Datshayinis story

The air trembles in the heat of the midday sun. In the village of Navlog, vendors in tiny stores made of palm-leaf matting sell tender green coconuts on the dusty roadside. Further down the road, a huge clay statue stands guard over the village. Mace in hand, resplendent in yellow, red, and green, Lord Hanuman, valiant king of the monkey clan, watches over the inhabitants of Navlog village.

One of these residents is nine-year-old Datshayini. Every morning, she walks past the brightly colored deity on her way to school. The apple of her mothers eye, she is also the pride of the project staff at the Navlog community nutrition center.

The district project nutrition officer of Vellore, T. Saroja, can hardly believe that this is the same child she knew before. She had a pot belly, says Saroja, and legs so weak, she couldn't stand. In fact, we wondered if she would ever be able to walk. Today, she is a living example of what the project can do with its combined emphasis on nutrition and health.

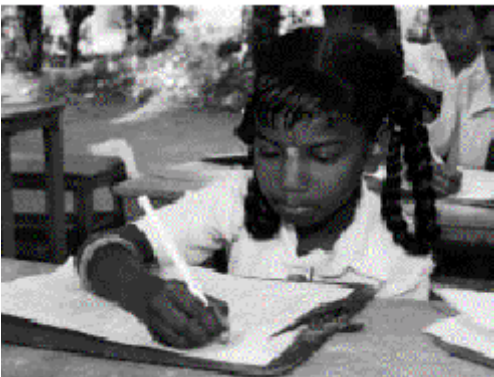


Datshayini is my tenth child, and my husband died soon after she was born, says Datshayinis mother. "There was not enough food in the house to eat. She used to fall sick frequently and cry all the time. I would have been in great trouble if the workers from the nutrition center had not come to me".

"She was a severely malnourished child and received supplementary food from our nutrition center," says the areas community nutrition instructress (CNI), Florence Quiri "Besides, at that time, a special rehabilitation center was set up here by a voluntary organization known as the Thirumallai Charity Trust. Our supervisor took the child to the rehabilitation center, where she was given nutritious meals everyday. Most important of all, our nutrition worker and village health nurse referred her to the block hospital at Walajah, because she used to be really sick."

Datshayini was found to be suffering from infantile tuberculosis. Along with medication for this disease, she was given drugs for de-worming and iron and folic acid tablets to reduce her anemia. Today, Datshayini is the highest scorer in her class at Priyadarshini Matriculation School, an English-medium school in the village. She is very active, learns fast, and is well-behaved, says her teacher, Vijayalakshmi.

While nutrition supervisor Vasugi informs her mother about an upcoming filariasis campaign, I sit with Datshayini on the porch of her house.



"Have they taught you any English at school?"

Yes, she nods her head. I will tell you a rhyme.

The cock is crowing;

The river is flowing...

The cows are grazing,

Their heads never raising

In the green meadow.

Datshayini recites the verse over and over again softly and, through the words that tumble out, I can hear her little heart beating.

Tenets of the program

Far away from Navlog, in the capital city of the state of Tamil Nadu, it is a busy February morning. Chennai city, Madras rechristened, is vibrant with traffic, billboards, and life-size images of film stars and politicians. It is a city with a future in software and automobiles, ready to flaunt the banners of big industry. All in all, Chennai is a world away from the tranquil climes of rural Tamil Nadu. Yet, here in Chennai is the nerve center of a program with an array of services designed to reach people in rural areas. With the help of its central office in Chennai and a huge network of officials and workers all over the state, the Tamil Nadu Integrated Nutrition Project (TINP) brings nutrition and health services to children and mothers in almost 20,000 villages. Datshayini of Navlog village is one of the many needy children in Tamil Nadu who have benefited from the program's services.

With the help of a credit of US\$32 million from the IDA, the World Bank's concessionary lending arm, TINP started out in 1981 in a few districts of Tamil Nadu as a nutrition and health program. Later, after a successful decade of implementation in which a huge infrastructure of nutrition and health centers was built in many parts of the state, the life of the program was extended. In its second incarnation as TINP II in 1990, the project received a credit of US\$72.8 million from IDA and extended its services to include preschool activities for young children. It also went beyond the pilot districts to cover most of rural Tamil Nadu.

TINP II objectives

The objectives of TINP II included:

- Reducing general malnutrition (grades III & IV) among children 6 to 36 months old by half in new project areas and by 25 percent in existing project areas.
- Increasing the number of children 6 to 36 months old in the normal and mildly malnourished (grade I) status by 50 percent in new project areas and 35 percent in existing project areas.
- Helping to bring down infant mortality rates from 84 to 55 per thousand and bringing down by half the number of newborns with low birth weights.

These objectives were to be achieved through food supplementation, health referral, and education.

The program makes available a threefold package of nutrition, education, and health services. As G. Ramakrishnan, the project's coordinator, says, "Malnutrition is not always caused by poverty alone. It is often ignorance that leads to false caring practices. Educating women is just as important as supplementary feeding, and neither of these two inputs can be sufficient without accompanying health referrals."

TINP has a simple philosophy. Children in various grades of malnutrition are identified with the help of monthly weighing and growth charts. Those found to be lacking in terms of weight-for-age are fed a nutrient-dense supplement until they graduate back to a normal growth trajectory. More importantly, the program tries to prevent the occurrence of malnutrition in the first place, by its focus on the health and nutrition of expectant and

nursing mothers. Expectant mothers are identified as early as possible and provided with nutrition and health care support. The idea is to prevent low birth weight and to minimize the incidence of infant mortality.

In fact, intervention even reaches adolescent girls. Says Dr. C. Gopalan, President of the Nutrition Foundation of India, "It is not as if anemia in our women sets in after they become pregnant. There is a great deal of anemia in children and especially in adolescent girls. It is no point waiting until they are married and conceive. The intrauterine damage to unborn babies of anemic mothers is a lasting one. Once the damage has taken place, the child develops on a different trajectory, and this is very hard to change, even with subsequent nutrition interventions".

TINP I started purely as a nutrition and health program; but the second project includes preschool activities for young children. TINP II has some other new features as well. While promoting breast feeding in the first few months of a baby's life, the program tries to detect malnutrition in young children at an early stage and manage it before further deterioration sets in. Earlier, supplementary feeding was given only when a child's weight showed a drop through two consecutive weightings. Now, every malnourished child who does not show a normal weight-for-age is given supplementary food; thus, the focus on mildly malnourished children has been enhanced.

How it all began

"It goes back to the early 1960s, when the state government decided to provide free lunch to all school children. But it was only after an extensive nutrition survey by Canter Incorporated of the U.S. and the founding of a state planning commission, that we decided to fine-tune the government's thinking about nutrition programs," says Dr. P. Subramaniam, former coordinator of TINP I.

In 1976, the World Bank agreed to support nutrition programs in India at the government's request. The Tamil Nadu government came up with an extensive proposal that included systems of production, distribution, and consumption. "The first proposal was like a Christmas tree. After discussions with nutrition experts, however, it was decided to narrow down the focus to the consumption side; namely, to provide nutrition supplementation and health support. It was also decided to focus on those who really needed help, unlike in a universal feeding program. The concept of growth monitoring to identify beneficiaries was, therefore, introduced in the project," says Subramaniam.

A program with a purpose

A green and brown floral curtain flutters faintly under the ceiling fan of an office room in LB Road, partially obscuring the view of distant coconut palms and asbestos-covered dwellings. This is the office of Dr. D. J. Augustin, the project's Joint Coordinator, Nutrition. An expert in health and nutrition-related issues, Augustin is a clinician-turned-government-official, who preaches a zeal for service that can best be described as missionary.

As a nutritionist, Augustin stresses the health care aspect of the program. "Malnutrition does not occur only due to a lack of food. Usually, there is an underlying infection and, unless proper medical care is taken, it is difficult to tackle these cases of malnutrition. The dangerous synergy between malnutrition and infection must be broken at an early stage. For this to happen, the health referral system has to be an excellent one. Besides, attitudinal changes need to be brought about so that complacency is not allowed to come in the way of treating disease in undernourished children," he says.

As part of this change, workers were advised to visit the homes of beneficiaries on festive occasions. In response, many blue-inlaid letters, neatly handwritten in Tamil, flooded the project office. "On New Year's Day, I went to the home of two grade III children in a village named Devanampalayam. I gave biscuits and chocolates to them and told the mothers I was there to save the children. Though I myself have gone to

these homes several times before, on that particular day I felt the difference," wrote the community nutrition supervisor of Pongalur.

"TINP should not be seen just as a feeding exercise. Building capacity among women for self-help is just as important. Training and community participation should, therefore, be at the forefront of activities. In fact, as a next step, we have tried to introduce the concept of community responsibility. Local leaders should henceforth also be involved in project management. Workers will then take on a catalytic role, advising mothers about healthpractices," says Augustin.

Chapter 2

Nutrition, education, and health: an effective threesome

Feeding on the spot

Vellore was just waking when we drove out of the town to the panchayat village of Chidambaranar Nagar. (A panchayat is an elected local council for village self-government.) The early morning was gray and overcast, but here and there the sun sent a streak of lustrous rays through a blanket of dusty clouds. A light breeze wafted the sounds of a morning prayer across distant paddy fields.



Outside a tiny rented room behind a bicycle tire store, a queue of about 30 people waited for their 8:30 a.m. spot feeding. Because a project nutrition center has not been built in this village, nutrition worker K. Themozi functions from this room, where she conducts feeding, weighing, and registering activities. Aided by a volunteer from the local women's working group, she feeds about 30 mothers and children, some inside the room and some in the narrow corridor that leads to the tire store.

"I like the *laddoos*," says two-year-old Balaji, "because they are sweet." The precooked food supplement, supplied to all nutrition centers in the form of flour, is mixed with hot water by nutrition workers and pressed into round shapes that look like a popular Indian sweet known as a *laddoo*. People of all ages seem to like its

taste.

"Many mothers would like it better if they could take the flour home and make their own porridge or *laddoos*," says community nutrition supervisor S. Murali. "But we insist on feeding beneficiaries at the center. Supplementary food taken home is generally shared with other family members. Here we make sure that a sick child or a high-risk mother eats it. We tell people that this room is not a feeding center. It is a mini-hospital where we help restore people to health."

Yogarani, a mother from the women's working group, helps the nutrition worker with group counseling sessions. She tells mothers about the importance of coming to the center on an empty stomach. "What we get here is not food for hunger, but a medicine for a disease, because malnutrition is a disease. Just like some medicines, it must be taken on an empty stomach; otherwise it will not be of much use."

The "Super Laddoo"

A lot hinges on the quality of food supplied in the program. It should be nutritious, but not viscous or bulky, to enable easy absorption by malnourished children with small appetites. The nutrient-dense flour supplied to all TINP centers by the Christy Fried Gram Industry near Salem is produced in keeping with these specifications.

Made of roasted wheat, bengal gram, and powdered soy, the flour is sweetened and fortified with micronutrients. A vitamin pre-mix of iron and calcium is added during the last phase of the mixing process. Roasting the cereals reduces their moisture content to five percent, and the resultant food has a high ratio of protein and calories.

The factory tries to ensure hygienic manufacturing conditions. "Our workers are not allowed to enter the production area without face masks and gloves," says the factory's owner, Kumaraswamy. "Besides, medical staff is on site to monitor the health of our food handlers."

Quality monitoring takes place at two levels. The factory itself tests samples from every batch for microorganisms, ash, moisture, and protein ratio. Also, project authorities have the food regularly tested by sending samples from all the blocks to the Central Food Technology Research Institute, a national facility.

"We are quite happy with the fact that there is a regular supply of materials. The food packets reach all the centers on time. Also, the modern technology used in the factory ensures sanitary production and food-handling conditions," says the Salem district project nutrition officer, R. Saroja.

At present, all the flour needed in the project is supplied by this factory. The project has now set up a three-member expert committee to inspect weaning food factories all over the state and recommend options for competitive procurement. "There is no doubt," says Project Coordinator Ramakrishnan, "that over the years the quality of food has improved in our program. Now TINP has created quite a demand for this food. Still, there have been questions about monopoly supply. We have announced a fresh tender for competitive bidding. This will create transparency and further improve food quality through open market competition."

Mrs. Lakshmi Pranesh, Secretary of the state's Social Welfare Department, expresses the opinion that TINP has already supplied enough ready-made food. "The time is ripe to experiment with changes," she says. "Over the years, the program has taught women all about preparing their own amylase-rich food at home. Starting with districts like Kanyakumari and Coimbatore, which are doing well, the centralized supply of weaning food should be phased out. We could start by giving grains to mothers and study the impact in such areas. In the more backward districts, however, we might have to continue supplying the ready-made food for some more time."

Meanwhile, the popularity of the *laddoo* continues unabated, as epitomized in the title of a project motivation film, *The Super Laddoo*.

How they learn...

Parthivan, a popular Tamil film actor, smiles happily from a poster stuck on a *peepal* tree. "*Pokkalam*," reads the movie poster, "Halcyon Days."

At a fork in the road about 15 kilometers west of Vellore, a side road turns left off the highway, toward the village of Genganallour. Beside a winding road lined with palm trees is the village community nutrition center. A signboard by the door announces the birth weights of newborn babies, along with information about immunization and antenatal checkup days. Inside, the building is painted with colorful pictures of fruits, flowers, animals, and vegetables.

"We were lucky we got the help of community members in painting the center," says CNI Shanthi. "Children need a bright environment. They also need interesting activities so that they learn while they play. I try to ensure that all child welfare organizers in my block conduct systematic preschool activities, ranging from hat making to acting."

"This is a mango, a guava, and a papaya..." says four-year-old Divya as she hops past some colorful cards lying on the floor. Next, some flash cards are shown in pairs. "This is a lock," says three-year-old Prabhakaran. "And this is the key with which you open the lock," the children shout in unison.

"Of all activities, children enjoy nature walks the most," says helper Ambika. "When we come back to the center, they learn to classify the leaves, flowers, and stones they have collected according to their color, texture, and shape."

... and grow

At the age of six months, project child Malathi was severely malnourished. Today, she is a healthy ninth grader who takes active part in TINP processions and in conveying messages to mothers. Her case sheet at the nutrition center shows that she received all available project services as a young child, and there was a steady improvement in her growth curve, except on one occasion when she faltered and relapsed to grade II malnutrition. She left the feeding program as a mildly malnourished child. Later, she joined the children's working group at the center and has remained a member over the years.

S. P. Kannan, a former state legislator of Anaicut, and Chinnaraj, the village council president, take obvious pride in the growth of children like Malathi. The two leaders have helped the center by collecting community contributions and by mobilizing village citizens to take part in an AIDS awareness campaign. Says Kannan, "I personally feel there have been some attitude changes in this block because of this program. Earlier, mothers fed only milk to babies. Now they give them other foods as well, and they are also more aware about taking care of themselves. Besides, some superstitious beliefs have been abandoned, and there seems to be less discrimination between females and males now."

The sisters Anjana and Aishwarya of Walajah block, too, have grown with the project. As little girls, they helped inaugurate a nutrition center in their block. Nowadays, they often come to help weigh children at the center and sing songs to preschoolers.

Malgoa mangoes are very sweet

And very healthy, too.

Do you want to eat them?

Come let us share them,

The *malgoa* mangoes.

A high-risk mother

Fatima of Kollampuddur depends on the village health nurse to treat her for minor ailments during the nurse's routine visits to the village. Recently, Fatima was referred by local workers to the primary health center (PHC) at Narsinghapuram, because she was identified as a high-risk mother. The 22-year-old Fatima is expecting her first baby; however, her blood group does not match that of her husband. Fatima



is Rh-negative, and her husband is Rh-positive. The baby could inherit Rh-positive blood, which could mix with the mother's blood during childbirth, causing complications for the child. Fatima also has a family history of hypertension and is acutely anemic.

"I was not worried about my health since I was receiving supplementary food at the center. But the worker noticed the swelling in my feet and referred me to the center," says Fatima.

Built with project funds, the PHC is a new and well-equipped three-room unit with blood testing and other diagnostic facilities and a fairly good stock of medicines. Dr. Malathi Prakash tests Fatima for blood pressure, checks the swelling in her feet, and recommends iron and calcium tablets. The doctor also discusses with Fatima the possibility of administering an anti-D immunoglobulin injection to safeguard the next pregnancy. Fatima would have to buy this injection from the market, because it is not supplied free by the health center.

Fatima has come to the PHC with a referral slip from the local nutrition worker. Dr. Prakash keeps a copy of the slip for her records and returns the carbon copy with her recommendations to Fatima. The doctor's recommendations will be entered in the health register for mothers and children at the center. This will enable the nutrition workers to keep track of follow-up in Fatima's case.

Chapter 3

Away in a hamlet

Mari of the Gudugudupas

The breeze carried the mood of languid summer afternoons. Sunshine lay scattered on a cluster of mud huts and, in the drowsy heat, a group of people sat assembled under a thorny *mulveli* tree.

The huts in the hamlet of A. Pudur belong to the poorest of the poor, a tribe of wandering astrologers known as the Gudugudupas. Carrying a tiny instrument known as a *gudu-gudu*, the people of the hamlet go from house to house in nearby villages, singing about the fortunes of others. At the end of the day, they come home with rice or a little money.

In this cluster of huts, the TINP staff carries on its work in coordination with a

nongovernmental organization (NGO) known as the Shanthimalai Trust. Run with the help of private donations and funds from the German government, the trust has adopted 40 villages like A. Puddur in the Thiruvannamalai district, where it undertakes health, development, and education activities. Today, two workers from the voluntary organization are among the people assembled under the tree.

Nutrition worker G. Vasantha from the main village is trying to convince a tribal mother to register herself at the center and receive immunizations and other services. To strengthen her endeavor, the worker has enlisted the help of health workers from the trust, as well as the tribe's leader, Mari.

But Kadaichelvi, the mother of a 14-year-old girl, is reluctant to talk about her pregnancy. She says she feels embarrassed because she has a grown-up daughter. She also does not understand the reason for all the fuss, because nobody weighed her when her daughter was born.

"Usually the people of the tribe listen to me," says tribal leader Mari. "But in this case it will take some time, and we have to be patient. In the end, I am sure she will agree to do as these people say and go with them to the center."

The great-grandma of Nadaparai

Large sugarcane heaps are stacked neatly on the roadside beside lanky toddy palms and expansive tamarind trees near the village of Eriyur. From the nutrition center, a bumpy side road leads to the hamlet of Nadaparai, about a kilometer away from the main village. The hamlet is inhabited by workers from the stone quarry in the nearby hills.

Outside a hamlet home, on a mud porch freshly covered with a mixture of cow dung and clay, Chandra, a mother from the working group, heats water to prepare supplementary food. A large *pungai* tree reaches across the porch with a leafy branch to shelter the people who wait in line to receive the freshly made *laddoos*. The working group member has been allowed the use of this porch to feed people every morning. Once every two weeks, the nutrition worker of Eriyur comes to the hamlet to give the food powder to Chandra.

Great-grandmother Mariayyi is one of the people who wait in line for Chandra's *laddoos*. In her arms she cradles her great-granddaughter, a healthy two-month-old. "This baby will be able to do without the *laddoos*," says Mariayyi, "because her mother ate them for six months before the child was born and eats them even now."

Every morning Mariayyi walks seven children from Nadaparai to Eriyur to drop them at the center's *balwadi*. (A *balwadi* is a small, one-room building with a playground, where early childhood education and food are provided.) In the afternoon, she walks the distance to bring them back again. Isn't it hard for her to do this every day?

"No," says Mariayyi. "If I can walk my own grandchildren, why not the others? All our village children should be educated. In our time, we had to carry our children to the fields. Now they have a chance to learn something. So they must go to the *balwadi*."

Crossing a cultural barrier

One morning, while driving down the road from Kattuvelumpatti to Nadam in the Dindigul district, we saw a helper walking briskly down the road, a large vessel full of *laddoos* in her hand. Before turning off the main road, the *ayah* ("helper") handed over *laddoos* to some women who were drawing water from a hand pump by the roadside. A part of her morning's work was done at the center in the main village, but Lingeshwari still had a long way to go, to the hamlet of Kuttur.

In 1982, when the first effort was made to reach the hamlet, the people refused to accept *laddoos* made elsewhere, especially by workers of a different caste. It was only when *panchayat* member P. Naykar allowed the first *laddoos* to be given to his grand-daughter, Kokila, that other hamlet residents slowly relented and agreed to accept the supplementary food. Today, Kokila is herself the mother of an eight-month-old baby who receives *laddoos* from helper Lingeshwari. Even though Naykar died 13 years ago, two generations have benefited from his pioneering actions that helped the program take root in the hamlet.

Various strategies have been adopted to replicate Naykar's success and improve the program's outreach to remote hamlets. Apart from women's group volunteers, runners, and NGOs, preschool teachers assist in places where there are no regular TINP centers. "About 20 percent of the entire rural population in the state is not yet covered by a nutrition center. We are trying to reach more and more of these people through various hamlet coverage strategies," says Dr. Muthaiah, Project Joint Coordinator.

Chapter 4

Special groups

A meeting with a washerman. . .

A young neem tree casts tremulous shadows on the doorsteps of a home in the village of Vilvarani. A



dhobi (washerman) sits in the mottled shade, beside a heap of clothes, talking to the woman of the house. "I don't understand why my son needs to go to the nutrition center tomorrow to be weighed. He is quite healthy," says the woman, Guneshwari. "That is why it is important to make sure that he stays that way," explains the dhobi, who tells her that a drop in weight might occur and go unnoticed without regular growth monitoring.

Govindaswamy is a *dhobi* who does his job with a flair. He conveys messages with the same energy with which he washes clothes by the riverside. When TINP staff announced a one-day training workshop for *dhobis*, he was the first one in his village to volunteer to take the bus to the block office at Kalaspakkam and take part in the training. "We washermen have always been messengers," says Govindaswamy. "We pass information from village to village about births, deaths, and eligible matches. So I thought it would be nice to

pass on messages that could help everybody."

The project makes effective use of a *dhobi's* traditional access to the woman of the house. According to nutrition worker Indumathy, *dhobis* are always the first to know if a woman is expecting. "Even during a baby's delivery, their contact with families remains very close, because they wash all the clothes used at that time. Women, in turn, seem to listen to them and take their advice seriously, especially with regard to the health of babies," says Indumathy.

... and a priest

In the glare of early afternoon, a priest sits on a straw mat outside a hut in a small village of Arni block, with a flame of lighted camphor before him. Two-year-old Manju is to receive an amulet to protect her from the harmful effects of disease. The malnourished child is getting weaker because of repeated bouts of diarrhea. On the advice of her mother-in-law, the child's mother has called the village priest for help on this sultry afternoon.

On a steel plate with decorative edges, priest Sivaraj has arranged a sprig of *neem* leaves, a small heap of ash, a coconut, and a lemon. "Goddess Shakthi, with the power of many worlds, we invoke your blessings..."

At the end of the prayer, the priest, who has received training in spreading project messages, smears ash on the child's forehead, waves the *neem* leaves over her, and ties the black thread around her neck.

Deftly bursting a lemon on the ground with his right fist, he squeezes the juice and scatters it in all directions. "To ward off evil," he explains.

But the ceremony is not yet over. Clasp an oral rehydration salts (ORS) packet – a low-cost, life-saving remedy supplied by the project for treating diarrhea - in his hand, the priest touches it to his forehead repeatedly. "This little packet," he tells the child's mother, "has the power of four tender coconuts. So, if you want your child to get well soon, you must give her ORS, without fail."



Spiritual healing and ORS. How does Sivaraj make the connection?

"I have to start the super-natural process so that the child's mother and grandmother may believe my words. Because after all, they called me here today because they believe in the power of a talisman. But the real strength lies in these packets. I can only tell them this after the ceremony, when they are ready to receive the message...in fact, I distribute 20 packets a month in the village in this way."

At this moment, priestess Nagamma, who has accompanied Sivaraj, emerges from the shadow of a thatched shelter, rising with a fury that marks the supernatural. Flinging herself in the direction of the child, who is unafraid, she caresses her. "I am with you now, you understand; I am here to protect you."

Sivaraj gets up from his seat hastily. "Yes, we understand, O Goddess Shakti," he says, and places a lighted flame on her outstretched palms, as she falls back, exhausted.

A little startled by the violence of this spectacle, I look at the baby's mother. She is smiling calmly.

Does she believe in this or in the little packet in front of her?

"I believe in both," she says. "Of course, I myself do have confidence in ORS, but it is my mother-in-law who insists that we call the priest every time the baby is sick."

A parish by the hills

Not far from the Sirumalai hills is the banana village of Vallakaipatti. From here, a narrow road winds its way past lush green banana fields, toward a cluster of villages at the base of the hills. Far above the red earth, wispy clouds float lazily past coconut palms, drifting slowly in the pale blue sky toward the distant slopes.

In this tranquil setting in the villages of Kallupatti and A. Vellodu, Father Chinappan runs his parish. The brand-new church of Kallupatti, with its splendid pink and green roof, is just across the road from the village nutrition center. Father Chinappan often speaks about TINP messages from the pulpit after Sunday mass. "Father's words have a lot of credibility, coming as they do from the head of the church," says the district communications officer (DCO), Gnanashekharan.

"The church is not only a place of worship," says Father Chinappan. "It is also a place where people come together for information and advice. These nutrition messages are vital, because they concern the women and children of our community."

The Hindu *poojari*, Vellachami, has joined forces with the Catholic priest. "I am a community person, just like a police constable," says the *poojari*. "So people listen to me, more than they listen to their own relatives. But just to make sure that they actually do as I tell them to, I check things out for myself. Whether, for instance, before going to the fields, the women have fed their children with porridge or *laddoos*. This is important, just like the daily prayer to Goddess Bhagawati."

The rope makers of Othakadai

About 15 kilometers south of Dindigul on the Madurai road, the hills converge and the coconut plantations become dense and green. Here, in the village of Othakadai, in one of the inner lanes shaded by palm trees, women work around a machine with a wheel. Piled on the ground around them are heaps of straw-like coconut fiber. The fiber is fed into the machine and twisted into ropes of varying thicknesses.

Ten years ago, very few women were involved in the traditional art of rope making because it was considered a man's work. Part of the credit for organizing women into a self-help group that makes ropes goes to P. Vellamal, the local nutrition worker. With the help of the *panchayat* union, she was able to mobilize government funds from the District Rural Development Authority for this activity. About a year ago, each woman got a loan of Rs 5,000, half of which is a government subsidy.

"This loan revived the interest of our working group members in TINP activities. It also empowered them financially. They can now look after their children better by buying nutritious food for them and by supporting our preschool activities," says Vellamal.

The group has no marketing connection as yet. The husbands of the group members sell the ropes in nearby towns. "It is profitable work. Rope sales are good throughout the year, except during the rainy season. Most of us have paid back our loans, and we also have money left over for other things," says Nagamma, one member of the working group.

During the past two years, about 4,500 women's self-help groups have been formed all over Tamil Nadu by the project. These groups not only undertake various income generating activities, but also try to link project activities with other development programs. According to Dr. Muthiah, Project Joint Coordinator, a total sum of about Rs 135,000 has been collected as savings by TINP working groups in the state.

Chapter 5

Innovative outreach schemes

The color of song and dance

The nutrition center at Silvathur vibrates with sound. A tape deck blares out a melody from the hit film of the day, *Pokkalam* ("Halcyon Days"). Children's working group member Manju Bhargavi, a 10-year-old girl named after a Tamil movie star, dances vibrantly, a lot like her famous namesake. TINP messages are adapted to a lilting song from the film, a tune that is heard in children's group performances all over the state.

- Ching ching cha
- Like the flower of a lotus,
- The eyes are precious.
- Give to the children
- yellowish fruit
- And to mothers-to-be,
- A garland of care
- As bright as the flowers
- That grace her hair.
- Ching ching cha

People throng the center from the inside and out to watch the children sing, dance, and take part in a dress parade. Trained by workers to convey program messages in attractive capsules, children's groups often perform skits and plays in community nutrition centers and local schools. Mythological figures enhance audience interest.

"This is not a good nutrition center," says a child dressed up as Naradmuni, the celestial mischief maker. "You may be a good nutrition worker, but that child welfare organizer of yours, what does she do?" The dialogue provides the actors with an opportunity to explain the duties of various workers to the audience.

Social themes are equally popular. "You refused to marry my daughter because she is afflicted with polio and limps a bit. Now that she has won money in a lottery, do you think I will ever give my daughter to you?"



Women's working groups are equally adept at song-and-dance presentations; particular favorites are *villupattu* performances. Sung with the help of a single-string instrument shaped like a bow, these performances often take the shape of question-and-answer sessions between a "guru" and her "disciples."

"Why, guru, do you think only Valli's heart was filled with joy when her baby was born? We were overjoyed, too. But why did she not give breast milk

to her baby? Was she not educated?"

"She was educated; that's how she knew about tin milk. But she thought her beauty was more important," says the guru, and sings about how Valli's friend taught her to care for the child and the importance of breast feeding.

"Let's go to that village and see for ourselves, O guru!" say the disciples.

The enterprising cable operator

Before dusk envelopes the village of Vannampatti, a girl with orange flowers in her hair knocks at the door of a creeper-clad dwelling at the end of the village. This is the home of village nutrition worker Prema. "I heard you on TV last night," says the girl. "I would like to attend the adolescent's group meeting you were talking about, but I would like to know more about it."

Through two satellite dishes perched atop her home, the nutrition worker is connected with 50 houses in her village. Her brother-in-law, a commercial cable TV operator, has set up a cable system that he operates from her living room. With the help of a mike connected to the cable, he announces forthcoming films to his customers all over the village. It occurred to the nutrition worker that she could use the same system to broadcast program messages to the many viewers who watched his films. Before weight-taking days, for instance, she could remind people to bring their children to the center.

Prema now uses the cable system frequently because it allows her the flexibility to tailor messages according to seasonal needs. For instance, she is able to give frequent ORS messages when cases of gastroenteritis come to her notice. Prema has noticed a marked increase in attendance on weighing days. She also receives more inquiries about available services now.

A vegetable garden in Dindigul

Although many nutrition centers have papaya and drumstick trees growing in their front yards, the vegetable garden in the village of Balakrishnapuram in Dindigul is special. Nurtured by little hands, the garden grows beans, guavas, coconuts, and teak trees. Many of the saplings were donated by a teacher of the local school; but all the gardening work is done by children with the help of the nutrition worker and the preschool teacher.

Jayapriya, a nine-year-old, says she enjoys watering plants and plucking beans.

"What are papayas good for?"

"For the eyes, but I like guavas best, and they are good for the health, too," says Jayapriya.

The vegetables and fruits grown here are often used in discussions to create nutrition awareness in the preschool and during group meetings.

Herbs as medicine

Mr. P. Swaminathan from POETS is not a writer. Aspecialist in herbal medicine, he works with an NGO known as the People's Organization, Education, and Training Society in the Gudiyattam block of Vellore district. This organization, which conducts integrated health and development programs, is especially interested in traditional health practices.

"We have no quarrel with allopathic medicine," says Swaminathan. "In fact, we see herbal medicine as an adjunct to modern medicine. What we are trying to do is to revitalize our own age-old system and give back to villagers a skill they once had. For instance, we have now trained villagers in the use of papaya seeds as a medication for de-worming."

Along with TINP staff, POETS has conducted training programs in villages; the organization's special targets are adolescent girls and schoolchildren. Sometimes, Swaminathan takes children to the fields to teach them how to identify plants of medicinal value. On narrow embankments, between fields of sugarcane and paddy, he often finds what he seeks: tiny white-flowered plants with serrated leaves, for instance, known as *karaisalankani*. The leaves and flowers of this iron-rich plant can be dried to yield a totally natural product that can be used in place of iron tablets. "We did a study in which we monitored hemoglobin levels in expectant mothers who used this plant. We found a remarkable increase within a span of 65 days," says Swaminathan.

A helping hand

Voluntary organizations support TINP in many ways. In the village of Ayyampalayam, for instance, the Shanthimalai Trust supports the program with manpower, audiovisual equipment, and a mobile health clinic. The trust's health worker helps the nutrition worker at the center and in the field. "She carries weighing scales for me, helps me register antenatal mothers, and educates the community. She even helps mothers locate misplaced health cards and motivates them to come to the center."

The trust's mobile clinic is a big boost to health outreach in the village. The village health nurse has a large area to look after, often 5,000 people in three or four villages, and cannot make frequent visits. The mobile clinic doctor helps beneficiaries with advice and medicines.

Sometimes the trust conducts puppet shows for villagers. A jazzy AIDS rap is a special hit with young people of the trust's vocational training unit. Messages whirl through the air from the flashy puppets. "One should have one wife and be loyal to her," sing the puppets, and the students laugh and clap along.

Chapter 6

People who make it work

The nutrition worker

Vallarmathi married at 16. She used to bring her baby to the nutrition center at Thokawadi when the child welfare organizer told her that the program was recruiting nutrition workers. It was a part-time job with an honorarium of Rs 600 a month, but Vallarmathi was interested also because it involved working within the community.

Her first challenge was to form a women's working group. People refused to join at first. Over time, after they saw Vallarmathi restore a severely malnourished child back to health, they became interested. Nowadays Vallarmathi is well-known in her community, and people come to her with early information about pregnancies. She enjoys her newfound status in the community, and this motivates her to do better work. "I used to be a nobody in this village, but now people come to me for help, especially when there is a sick child. And, of course, I am invited to all important functions," says Vallarmathi.

She seldom encounters resistance in the various tasks she has to perform, such as weighing, growth monitoring, feeding, and health referrals. She did, however, meet with resistance in the case of a mother who refused to have her second child weighed. "You don't give *laddoos* to my first child, so why should I let you weigh this boy?" asked the mother. The nutrition worker told her that she wanted to see if the boy needed the supplement and, finally, on the advice of her neighbor, the mother relented.

The working group leader

Senjhilakshmi was unanimously elected by the women of Thokawadi as their working group leader. In many ways, she forms a vital link between the worker and the community. Often, in group meetings, she demonstrates how amylase-rich food (ARF) can be prepared at home with wheat, *ragi*, groundnuts, *jaggery*, and *gingelly*. "The seeds have to be germinated and then roasted and ground. At this very moment, you will find many women in our village who have ARF powder at home which they themselves have made," says Senjhilakshmi. She also helps organize cultural functions and counsels mothers.

The village health nurse

The sun shone relentlessly on the sugarcane fields surrounding the village of Poolawari. In the heat of midafternoon, village health nurse Bhuvaneshwari made her way to the home of a newborn baby at the edge of the village. The baby's grandmother sat on the shiny red floor and watched dispassionately as the nurse administered an antituberculosis vaccine and polio drops to the girl. "Why are you wasting your time and medicine? This baby will not live, anyway," said the grandmother finally. "The child is a girl and, if we keep her, we will have to suffer all our lives."

The village health nurse often has to tackle this kind of discrimination against newborn girls, which can result in neglect of their health or, in its worst form, death. She works to convey timely messages about girls growing up to be responsible bread-winners to counter the age-old belief in boys as future providers and caregivers.

That evening, when the sun was setting and the child's father returned home from the fields, the village nurse came back to the house, accompanied by the nutrition worker. "Don't kill the child," they pleaded. "If you don't want her, we will take her to a creche. Who knows? Your next child may be a boy."

Today, the baby is a healthy nine-month-old girl who lives with her parents. Recently, the workers passed by her house, and the baby's mother came out to greet them. "My child is growing, thanks to you. You saved her life," she said.

The workers are not always successful. "Sometimes it is a birth and a death, entered a couple of days apart in the register, and nothing more is said about it," says Bhuvaneshwari. "But for us, it is a major defeat."

The community nutrition supervisor

The community nutrition supervisor (CNS) must work closely with her nutrition workers to improve their interpersonal communication skills and help out when any problem arises. "Encouraging my workers is more important than finding fault with them. I try to support them, especially in areas where they encounter resistance," says CNS Nellammal. "In Pavithram village, a mother was so embarrassed about



her weak child that she refused to have it weighed. My worker and I visited the woman's home and were able to meet the whole family. Finally, we managed to convince them to bring the child to the center. We found that the child's backbone was bent and referred her to the health center. Now, the child is slightly better."

A prime responsibility of a supervisor, who often looks after 15 or more centers, is joint supervision along with the sector health nurse. They make surprise visits to centers to check the quality of service delivery, including, for instance, whether food is properly prepared,

whether all eligible beneficiaries receive services, and whether severely malnourished children receive porridge along with ARF. In the center, the nutrition supervisor and the sector health nurse compare registers to ensure that all records of services have been entered properly.

How could the program be improved?

"The sector health nurse is not able to accompany me on routine visits to families and centers as often as she should, but she does come to check out cases of babies with low birth weights, high-risk mothers and infants, and cases of severe anemia," says CNS Nellammal.

The CNI on a moped

A community nutrition instructress (CNI) is responsible for an entire block, which covers a large geographical area and often as many as 80 centers. Unlike the majority of CNIs in the program, Kanaga is fortunate to have a moped, and she makes good use of her mobility. Instead of spending hours waiting for buses on village roads, she is able to use the time to check the work of supervisors and workers all over the block and give them on-the-spot training. Her greatest achievement, according to district officials, is mobilizing community resources for her centers. "My desire is to wipe out malnutrition from my block. I have not succeeded yet, but the numbers have come down considerably," says Kanaga.

What problems does she face?

"In a few cases, men resist our interference and neglect their own families. Some women, too, refuse to have their children weighed, because they believe someone might cast an evil eye on the baby. But in

order to tackle attitudes effectively, we have to recognize that superstition coexists with scientific beliefs in our communities," says Kanaga.

The sprightly SI of Salem

The statistical inspector (SI) of Salem does not restrict himself to his assigned task of monitoring data. Although his prime responsibility is to consolidate information and convey it to the project office, Anand Prakash plays an active role in monitoring service delivery. He inspects the workings of the centers and recommends remedial action whenever he finds flaws. The CNI answers to him about follow-up actions.

"In our district, all three of us, the DPNO [district project nutrition officer], the DCO, and the SI, work closely as a team. Our SI helps us with all project aspects, such as training, health camps, and communication activities. He helps us increase our contact with village people, and we have found him to be an especially effective troubleshooter," says Salem DCO Marimuthu.

"I rush to the field whenever any dispute arises. This may be a minor altercation between family members about food substitution or a mishap caused by an overdose of iron folic acid tablets. My work does not end with numbers. What counts is the close interaction with people. In order for the program to be effective, we have to be social workers in every sense of the word," says the SI.

The DCO

The district communications officer (DCO) is responsible for the information, education, and communication (IEC) in the district. Bakiarajan of TV Mallai is a DCO who likes to involve special community groups in IEC activities. "TINP is a flexible program that allows you to be creative," he says. "As long as project objectives are reached, I can carry on innovative activities and involve various kinds of people in spreading project information. This is not the case in other government programs, where you often have to await permission for any new activity. Besides, this program gives me the scope to work with a very large number of intelligent and committed grass-roots workers."

The DCO has to deal with the beliefs and attitudes of people. "I tell my CNIs to talk repeatedly to people about baseless superstitions such as their avoidance of 'heat-producing' foods, such as papaya and sesame, and 'cold' foods, like radish and green leafy vegetables," he says. It is also his duty to conduct an educational diagnosis of the families of malnourished children to uncover gaps in a mother's awareness that may have allowed her children to remain malnourished. After obtaining information about the family's economic status and caring practices, he makes recommendations by filling out a case sheet. This is an adjunct to the detailed medical case sheet of every mother and child maintained in a register at the nutrition center. The diagnosis is carried out in the presence of workers and family members and, therefore, also serves as an on-the-spot training exercise.

The DPNO

The district project nutrition officer (DPNO) is the head of the program in the district and responsible for all its aspects. Says Saroja, DPNO of Vellore, "I represent the views of grass-roots workers at the state level and take experiences from my district, so that these can inform future program design". Her first priority when she joined in 1995 was to enhance preschool activities. Children needed more charts, creative toys, and play and science corners, and Saroja used the help of NGOs to mobilize community resources. She has also helped organize women's groups into a district federation. In this way, a forum has been created through which women can access government programs and take their village problems to block- and district-level officers.

Like other DPNOs, Saroja has carried out several special studies that enable her to find out exactly what is going on in the field and to make corrections whenever necessary. She also harnesses extensive NGO

support in her district. CODES, the Community Development Society of the Christian Medical College of Vellore, for instance, plays a special role by training girls in such occupations as welding.

The district collector and health officials

The program works best in districts in which the collector takes a special interest in TINP activities. P. W. C. Davidar of Vellore likes the program because of its focus on expectant mothers. "The earlier focus on mothers after they became pregnant was lopsided. I also like the fact that they are trying to inculcate in mothers the belief that they can do it themselves, by preparing nutritious foods at home. This matches the *namakaname* self-help approach in the state, which literally means 'we for ourselves.' As far as I am concerned, the program is especially useful in my own work, because I use the TINP base for various district campaigns and activities."

Sivasuryan, collector of Thiruvannamalai, reinforces this view. "We consider TINP workers our field staff for all mass awareness programs. After all, the health of people cannot be improved just by giving them tablets. They need the awareness, and that's where the project comes into the picture. Even in this dry district with low income levels, female education has improved slightly because of awareness campaigns. Activities under the TINP banner have, in fact, gained a lot of momentum in the recent past and must continue."

Senior district health officials coordinate the health aspects of the program. Dr. J. Ramadoss, Joint Director, Health, feels that TINP is now truly a part of their district's health program. "We work together. While our doctors review the work of TINP staff and motivate people to use nutrition services, nutrition workers are helpful with health activities. For example, they take blood smears for malaria in endemic areas. The difference is that our workers get a regular government salary," he says.

Chapter 7

Modes of persuasion

Tales that lure

All is fair in IEC. If the message is right, a bit of poetic license cannot hurt.

Abhirami and her friends are part of an adolescent working group in Anaicut block, Vellore. In the temple courtyard next to the nutrition center, in the shade of a large banyan tree, 17-year-old Abhirami tells her friends the story depicted on a set of TINP flash cards. The nutrition supervisor has trained her well, and Abhirami knows where to place the emphasis in the story.

Once upon a time, there was a king: Sundarapandiyan of Madurai. Treasures he had and chests full of gold. What he longed for was an heir, talented, bright, and beautiful. "But, sire," said Panaliraman, the king's minister, "the child will have to be healthy as well. And the best way to find out about health is weight-for-age."

A massive search was launched in the land. Of all talented children, the chosen one was set apart by his weight. The mothers in the court protested initially, but in the end got curious about all the weight taking. Panaliraman, seizing the opportunity, explained to them the concepts of growth monitoring and supplementary feeding and all about ante- and postnatal care.

"In the same way," says Abhirami, flipping over the last flash card, "one day when we girls have families of our own, we must look after our health and the health of our children. Maybe then, they too will be successful. They might even become doctors, or engineers, or advocates."

The adolescent working group members find the idea very appealing. For these teenage girls who work for Rs 300 a month at a nearby shoe factory, rearing children no longer seems an impossibility - as long as they obey the simple rules of child care and don't forget to take their own iron and vitamin pills.

What do they think the ideal age for marriage is?



"We think even 20 is too early," says Mallarveni, who has received training from the nutrition supervisor about the ill effects of early marriage. "But our parents have already started saying they won't wait too long."

Before the temple of Draupadi

The evening is warm and the mood is festive in the town of Thiruvannamalai. It is the night before the new moon, when 100,000 pilgrims circle Annamalai hill, holy abode of Lord Shiva. On this auspicious occasion, a play is staged in a nearby village.

People gather in the courtyard of the temple of Draupadi. With petals in their hands, they wait for the actors who will bring to life the story of the temple's deity. As the musicians begin to sing, the actors

arrive, their faces aglow with paint and mystery. For a few hours tonight, these men are no longer agricultural day laborers who work in nearby fields. Rather, they are emblems of a regal epic that unfolded itself on the plains of India a long time ago.

The buffoon, on the other hand, keeps alive a sense of reality. Dressed up as a woman with flowers in her hair and an attractive gait, he regales the audience. "Well, what do you know? The other day - and I'm telling you all this before Duryodhana, the great warrior, comes and pushes me off the stage - I was standing at a tea shop and drinking tea. Uneducated fellow, the tea shop man put too much decoction in my tea, and I got a bad stomach. But because of my great beauty, everybody was watching me, and I didn't know where to go. I would have been in great trouble indeed, if I hadn't found this nutrition center and the very kind food teacher. Well, she gave me this packet, you know, called an ORS packet, and it greatly helped me in my time of need."

The tale of the Mahabharata begins to unfold with the entry of Duryodhana. Children throw petals at his feet as he begins his dance of victory, elated at having won the alluring Draupadi as a prize from his cousins in a royal game of dice. Enter the buffoon as a sickly villager. "How come you are so strong, great Duryodhana? Your mother must have fed you well, with her own milk and with colostrum. Mine did not. She only gave me sugar water and donkey's milk."

Says the evil-tempered Duryodhana, pushing the mortal weakling off the stage, "Not only that, my man. She herself did not know what to eat. Since she was not sufficiently well fed, she gave birth to you, a deaf old fool, who is now facing the consequences of neglect in your young age."

As Dr. P. Subramaniyan, TINP I Coordinator, said in Chennai, "*Therukuthu*, or street plays, lend themselves ideally for IEC in the program. With the help of the comedian, these plays are able to communicate even intricate philosophical messages to rural audiences most effectively. Once I saw a play about the 16 kinds of hospitality that must be extended to a guest as per our ancient customs. Like the rest of the audience, I learned a lot that night.

On stage, Draupadi laments her fate and appeals to Krishna to come to her rescue. The children are amused, especially 12-year-old Vijayalakshmi in the front row. I ask her what she thinks of the performance. "I like the dresses and the story of Draupadi. But the dialogues with the buffoon are the nicest part, because they are funny. It's the first time I've seen them talking about the *Iaddoo* program in a drama like this."

The rest of the audience is deeply immersed in the play. Duryodhana manhandles the reluctant Draupadi, dragging her across the stage with a particularly violent gesture. For a gleaming instant, illusion becomes reality. A member of the group's own choir jumps off his bench and attacks the actor who plays Duryodhana, dragging him to the ground. "Leave her alone; let go of Goddess Draupadi," he cries and has to be carried away by the others.

"This is not part of the play," says *panchayat* President Govindaswamy, who has organized the performance, before he hurries off backstage.

Changing attitudes

Molding the minds of people, especially with such issues as discrimination against girls, is a major challenge to the project. "Female infanticide has been a problem in Salem district for a long time," says DCO N. Marimuthu. "It is perpetuated by the high demands for dowry in certain communities and the belief that only sons can protect people in their old age. It is a very sensitive issue, and persuasion is our only recourse."

In the semiurban colony of Elampillai, a play is staged by a professional troupe. An actor playing the father of a newborn girl staggers onto the stage, drunk. "I'm not interested in giving this child its first feed of sugar water. Why, it's just a girl! I recommend illicit liquor, three times a day."

The neighbor's wife gives the husband a disapproving look. "What the baby needs for her first feeding is not alcohol or sugar water, but colostrum," she says and goes on to sing a catchy tune about child care, the TINP way. Predictably, the girl grows up to help her parents, while her brother ends up as an unemployed drunkard.

DCO Marimuthu says that 146 such plays have been performed in Salem district to dispel notions that lead to discrimination against girls. "People like these performances a lot. They are usually put up with the help of funds collected locally. Professional troupes are an asset to the program. They write the script based on our messages, and we do not have to do much except correct the sequence of messages sometimes."

Singing their tune

Meet Paravai Muniyammal. Grandmother of four, small-scale cultivator, and, above all, zesty singer of folk songs. Standing in her living room, surrounded by black and white photographs and shelves full of steel utensils, Muniyammal sings. Her words are accompanied by eloquent gestures, and her voice carries the listeners far beyond the confines of the room, to the outlines of a village road at dusk.

My bullock cart drives slowly;

How will I ever reach my destination?

It is evening

and I have started late.

Will I find a place to stay?

Spotted by project staff as a popular singer, Muniyammal is used regularly to deliver project messages. "All you have to do is give me the prose content, and I can convert it into a song," says Muniyammal. "But to be at my best, I need audience reaction, a large number of people to respond to my songs. Then I can sing for hours, even beyond midnight."

Muniyammal sings only at temple festivals and for government programs like TINP. According to her, religious songs are very popular, and nowadays, songs about social themes, too. This one, for instance, sung in the *mangu* format, is a favorite:

Where are those days gone?

When...

People got up with the rising sun

And went to their fields.

Now...

They go to the tea shop

And read the paper,

Says Muniyammal



Of the village of Paravai.

Muniyammal is careful to intersperse project messages with other songs to retain the interest of the audience. The messages themselves are adapted to popular folk melodies for better reception and retention.

On a greenish hill by the name of

Courtalam,

There are five waterfalls.

Likewise, for a mother-to-be,

There are five things to remember.

Early registration, tetanus shots,

regular weighing, iron tablets,

And food and rest, too.

Training them together

The muted sunshine of early afternoon slips through the leaves of a large *badanarayan* tree to create flickering shadows on the mud compound of a high school in Vellaru village. Here in the compound, next to the public health center, a block training team educates nutrition and health workers.



The village of Vellaru is not far from the Maicheri block office in Salem district. Shifting the locale from the block office sometimes makes it easier for health staff to attend the joint training sessions along with nutrition workers. The block training staff is itself a joint team, comprising staff from all three departments: health, nutrition, and family welfare.

An impromptu classroom has been set up under the tree, complete with blackboard, chalk, flip charts, and training manuals. In sessions held in the block office, more equipment is used, including an audio package and sometimes a VCR that is shared among various blocks in the

districts.

Today, the stress is on the theory of joint supervision between nutrition and health workers. The block extension educator from the family welfare department advises workers to undertake joint visits frequently. Community health nurse S. Kankan speaks about identifying high-risk cases. For DPNO

Saroja, this session is an opportunity to educate workers about ethical issues. "False statistics, inflated results, and misuse of food amounts to letting down women and children and weakens the program," she says.

"Every time, we learn something new in these training sessions," says supervisor Vasugi, "and afterwards we feel motivated to work better as a team." The block training team itself received a 30-day period of joint instruction at the project's communication and training center in Chennai.

The training center in Chennai

Just outside the municipal limits of Chennai city is a village named Tharamani. A white signboard with a TINP logo points left to a dirt road that leads to a two-story building. A *pungai* tree sheds flimsy blossoms outside the building and, from far away, a balmy breeze carries fragments of a song from a film.

The Tharamani training center enables the program's trainers to be taught under one roof, instead of being sent to various institutions. The center is equipped with teaching aids, such as audiovisual equipment, and uses in-house instructors and experts from outside. The center is currently running a refresher course for block training teams.

As far as possible, training is based on needs and tries to correct flaws in implementation. "The Mid-Term Evaluation was an eyeopener for future training," says Amirthameenambal, Joint Coordinator, Training. "It pointed to a polarization and showed that mildly malnourished children were being neglected. This was a dangerous trend, since moderate malnutrition slipped easily into severe malnutrition, which is difficult to handle. So in our training sessions, we started to stress the frequency of growth monitoring and on ensuring systematic health referrals."

In the project, training takes place on two levels. District- and block-level officials receive instruction at Tharamani; they, in turn, train supervisors and grass-roots workers through block training teams. This system allows a two-way flow of information on an ongoing basis.

The IEC wing of the training center produces communication and training materials, including audio jingles, videocassettes, flash cards, and manuals for workers. *The Little Sparrow*, a TINP bimonthly newsletter, takes program information to workers and literate mothers in all centers. It includes poems and fables that workers can read to preschool children.

The field worker's training manual is a handy tool with simple text and several line drawings. These illustrations conjure up a slightly romanticized version of reality, worthy of emulation by workers and beneficiaries. The preschool manual, on the other hand, uses crisp pictures that child welfare organizers can use as a guide to conduct play activities with children.

"For the IEC, we have mobilized community contributions for cultural performances and used low-cost materials, such as banners prepared from empty food packets, waste cycle tires, and leaves," says Dr. Muthiah, Joint Coordinator.

Because of the high cost of broadcasting, audio jingles are not aired frequently. Sometimes, however, after the Tamil news on the radio, people all over the state can hear a jingle with program messages such as this song about breast feeding and the importance of colostrum, a mother's first milk, which provides vital nutrients:

For a baby

Healthy and problem free,

Feed the nectar of colostrum,

Ever clean and ever free.

A gift of nature

To mother and child.

We can't praise it enough,

This nectar of colostrum.

Feeding back information

The program has attempted to set up a high-quality information system for feedback and monitoring. Field data compiled at the block and district levels are sent to Chennai via modem, where the information is collated and analyzed. Key performance indicators are prepared and relayed back to the districts for comparison and corrective actions. For instance, the indicators for December 1997 showed that Salem had achieved a 79 percent early registration of pregnant women; but this figure for the coastal district of Nagipattinam was a mere 39 percent. This led the project office to recommend increased door-to-door visits by workers, backed by supervisory checks in Nagipattinam. Most evaluation work, however, is undertaken by outside agencies, although the management information system wing in Chennai has also conducted some special studies.

Chapter 8

Outcomes

The stories told here of the women, children, and families who are living healthier lives - and of the health and nutrition workers, government officials, NGOs, and community volunteers who made it happen - are a few of the countless examples of how TINP has made a difference.

Impact assessments of the project tell a similar story.

The project's achievements

Mr. Ramakrishnan, Project Coordinator of TINP, is pleased with the endline survey just completed by the National Institute of Nutrition (NIN) in Hyderabad for eight districts. "It looks like we have passed our TINP II final exams with flying colors and a 90 percent result. The survey indicates that, even in backward project areas such as Dharmapuri, all the outcome indicators, like immunization, weighing, and antenatal registration, are close to 90 percent. So surely we can call this a highly successful project."

The NIN survey shows that, in Dharmapuri, severe malnutrition among children under three years old has been reduced from a baseline figure of 4.9 percent to 1.5 percent. In Thiruvanamalai, another backward district, severe malnutrition among children under three has decreased from 5.3 percent to 3.3 percent. The immunization figure for Thiruvanamalai has reached 94.8 percent.

For Tamil Nadu as a whole, a clear reduction in severe malnutrition has been achieved. According to the terminal evaluation of the program (conducted in October 1997), severe malnutrition was reduced by 44 percent from 1992 to 1997. In the case of moderate malnutrition, improvement has not been as rapid or clear; however, the program does seem to have contributed to a sharp reduction in the infant mortality rate, which fell from 84 per 1,000 live births at the beginning of the project to 54 per 1,000 in 1996, well below the national average. The gender differential in terms of weight for age has narrowed as well.

There is evidence of a marked improvement in the number of women who received at least one antenatal checkup. According to the terminal evaluation, this number has increased from 39 percent in 1992-93 to 90 percent in 1997. More than half of all eligible women received at least four checkups. Tetanus toxoid immunization surpassed the target, reaching 99 percent. Food supplementation, however, fell short of the target.

Success in TINP II, according to the project coordinator, was not easy to come by. The period from 1993 to 1995 was extremely difficult for the program because of political interference, frequent transfers among district- and block-level officers, and large-scale irregularities in procurement. These factors affected the morale of workers, as well as

the quality of materials. “A sort of general apathy developed at all levels at the time, and our workers became a disoriented lot. In fact, it took a lot of effort to bring back the earlier enthusiasm for the project,” says Ramakrishnan.

The new team at the project office went about improving program quality systematically. A total review of project activities was undertaken. This included talking to mothers, opinion leaders, and fence-sitters about the problems they perceived and the ways in which project effectiveness could be improved. “In all, it took us 24 months; but in the end, we were able to improve the program and get workers back to their earlier pace of work and motivation,” says the project coordinator.

What were the reasons for the program’s subsequent success?

According to the project coordinator, a major contributor to the qualitative improvement is the increased coordination between the Departments of Health and Family Welfare. This cooperation was institutionalized when the health staff was made part of the program, thus defusing an earlier clash between the two departments. During TINP I, the Joint Coordinator, Health, remained within the Health Department; now this function is under the direct control of the project coordinator.

Another factor in the project’s success was the way in which local leaders were used in the program. Priests and practitioners of traditional medicine, mothers-in-law, and *panchayat* members were roped in because their words are often law in communities. Sensitizing such groups was a way of seeing that program messages would actually reach people and translate into mother- and child-care practices in their homes.

Finally, the project office tightened monitoring. The monthly review meetings held in Chennai, for instance, are a powerful tool through which the project office receives feedback and relays its suggestions to block- and village-level officials. “Some time ago, we issued instructions that spot feeding in the centers, rather than take-home food supplements, should be strictly ensured wherever possible. It is gratifying to note that these suggestions are often swiftly implemented,” says Ramakrishnan.

Gaps in the program

According to the project coordinator, the program has one major administrative flaw. The district project nutrition officers, who are in charge of TINP activities in every district, belong to the Social Welfare Department, and the coordinator does not have the authority to transfer them. The ideal situation would be to bring all district- and block-level staff under the project coordinator’s direct control. On the other hand, the DCOs, who are specialists and have been hired solely for the program, have no avenues of promotion. This lowers their motivation levels. For more efficient implementation, these two built-in weaknesses would have to be rectified.

Hanumantha Rao of the NIN, who was involved with the terminal evaluation of TINP II, says, “It is too early for me to give an exact assessment, since the evaluation is not yet complete. Though program coverage varies greatly from place to place, it does seem

that the project has achieved its objective of reducing severe malnutrition by half and that there has also been an improvement in moderate malnutrition.”

He feels, however, that monitoring and self-evaluation in the program should be stepped up. “If progress reports had been used more systematically, by analyzing and feeding back data to the field, the project could have achieved even better results. Surveillance must be built up in programs like this.”

Although the levels of severe malnutrition have improved over time, some problems still seem to persist. As shown in the following graph, malnutrition peaks in children 13 to 24 months old, coinciding with the weaning period. This indicates that children are still not being given enough nutritious foods during this period. In addition, the number of severely malnourished girls exceeds that of boys in all age groups.

The way ahead One indication of project sustainability is that, even though TINP II officially came to an end in December 1997, program activities continue under the ICDS umbrella. These activities will eventually become part of the Woman and Child Development Project, with costs to be shared by the government of India and the state government, along with support from the World Bank. More importantly, workers and beneficiaries have become sufficiently familiar with project principles and know-how to be able to carry on such activities beyond the life of the project.

Sometimes, accountability may also be an issue, especially with regard to food pilferage.

The answer lies in placing more responsibility in the hands of communities. “Communities should take charge, and workers should play an advisory role in the next project,” says Dr. Augustin, Joint Coordinator of the TINP project. According to former TINP executive E.V. Shantha, programs like TINP should build capacity in communities by placing project money in their hands and letting them manage activities. “The government should reduce its direct involvement from many program activities and increasingly share responsibilities with NGOs and community-based organizations. Future programs could be organized on the lines of social funds in Africa,” says Shantha.

What others say

Kamala has spent the better part of her life in the village of Pavithram in the Thiruvannamalai district. She has no daughters-in-law or grandchildren, so nobody in her family has been a program beneficiary. “After the nutrition center came to this village, I have seen healthier babies and also fewer children dying. Moreover, lately, children have started showing a lot of interest in the preschool part of the program,” says Kamala, “but I feel that preschool activities should be enhanced and made more challenging for brighter children.”

In the opinion of R. Rajaji, husband of *panchayat* president Anjali Devi, the difference between TINP and earlier programs is that now the health staff comes to people’s homes more frequently; earlier, people always had to go to public health centers. “Less than 10 infant deaths take place in the village in about two years, whereas a lot of

babies used to die earlier. And it has made a difference in the way children grow up,” he says, pointing to Manikandan, a four-year-old from the *balwadi*. “This boy used to roll in the mud, half clad, until his father, a poor basket maker, agreed to send him to the preschool. Now he knows the Tamil alphabet and some basic arithmetic, which he has learned through songs.”

“what would you say if the program were to be stopped?”

“Once the project is withdrawn, the children of this area will definitely become malnourished again. Most of the parents are so concerned with wage earning that they are not able to pay proper attention to their children. The guidance of the preschool and nutrition staff is extremely important for the upbringing of small children.”

A hundred yards down the road from the nutrition center, retired water tank operator V. N. Ranganathan sits at the tea shop drinking his daily glass of midmorning tea. His own grandchildren were part of the program eight years ago. Since then, no one in his family has received program services.

“The problem with the program in my village, as far as I can see, is that sometimes the children are fed very late, even after 10:00 in the morning. You cannot expect them to stay hungry until then. But otherwise, it is a good program. Most children here have received immunization and vitamin drops. They also have many nice cultural programs in the school. Of course, I cannot say much about other places, because I do not go out of my village these days.”

Does Ranganathan think that all children should be fed?

“If the child has a good weight, why should he go to the center for the *laddoos*? You cannot feed everyone, since resources are limited.”

What did he like in particular about the program?

“It is good that women are fed six months before and after their delivery. This way the baby is looked after even before it is born. So is the mother, at a time when she feeds her newborn and needs nutrition most, for herself and her baby. This is different from the ideas we had in our time. We started worrying about the child’s health when it was too late. But nowadays, they catch them young.”

References

Berg, Alan. 1973. *The Nutrition Factor*, The Brookings Institution.

Cooper, B. A., and L. Brunton. June 1970. “The Case for Folic Acid Supplements During Pregnancy.” *American Journal of Clinical Nutrition*.

Gopalan. 1962. “Effect of Nutrition on Pregnancy and Lactation.” *Bulletin of the WHO*.

Kallen, David. 1970. "Nutrition and Society." *Journal of the American Medical Association*.

Heaver, Richard. 1989. *Improving Family Planning, Health, and Nutrition in India: Experience from Some World Bank-Assisted Programs*. World Bank Discussion Papers 59.

UNICEF. 1998. *The State of the World's Children*.

Winick, Myron. 1969. "Malnutrition and Brain Development." *Journal of Pediatrics*.

World Bank. 1987. *Malnutrition: What Can Be Done?* World Bank, IBRD (International Bank for Reconstruction and Development).

World Bank. 1991. *Project Completion Report, Tamil Nadu Integrated Nutrition Project*.

World Bank. 1994. *Impact Evaluation Report, Tamil Nadu Integrated Nutrition Project*.

World Bank. 1998. *Implementation Completion Report, Second Tamil Nadu Integrated Nutrition Project*.

Notes

References

Berg, Alan. 1973. *The Nutrition Factor*, The Brookings Institution.

Cooper, B. A., and L. Brunton. June 1970. "The Case for Folic Acid Supplements During Pregnancy." *American Journal of Clinical Nutrition*.

Gopalan. 1962. "Effect of Nutrition on Pregnancy and Lactation." *Bulletin of the WHO*.

Kallen, David. 1970. "Nutrition and Society." *Journal of the American Medical Association*.

Heaver, Richard. 1989. *Improving Family Planning, Health, and Nutrition in India: Experience from Some World Bank-Assisted Programs*. World Bank Discussion Papers 59.

UNICEF. 1998. *The State of the World's Children*.

Winick, Myron. 1969. "Malnutrition and Brain Development." *Journal of Pediatrics*.

World Bank. 1987. *Malnutrition: What Can Be Done?* World Bank, IBRD (International Bank for Reconstruction and Development).

World Bank. 1991. *Project Completion Report, Tamil Nadu Integrated Nutrition Project*.

World Bank. 1994. *Impact Evaluation Report, Tamil Nadu Integrated Nutrition Project*.

World Bank. 1998. *Implementation Completion Report, Second Tamil Nadu Integrated Nutrition Project*.
Notes. **S**