



# Annapurna Times

## *New Tractor Gifted to Annapurna*

### Inside this issue:

*Pongam Tree Oil Powers Pump and Generator* 2

*Food Surplus, Farmer Suicides, and Starvation* 2

*Starting the Annual Rice Crop—Visuals* 2

*Sangeeta Gets Married* 3

*Area Under Production Increases* 3

*Ecological Accounting Data Collection Begins* 3

*Supporter Acknowledgements* 4

In August, thanks to a very generous contribution, Annapurna acquired a new, 40 horsepower Massey Ferguson tractor.

A new tractor was badly needed because the short period that we have in which to prepare the millet and rice fields each August, prior to the monsoon's arrival, limits the number of acres that can be cultivated with a single tractor. Annapurna, with 135 acres, had much more land than we could prepare with only one, fully functioning tractor. In addition, a new tractor was needed because our rain-fed millet and flooded rice crops each require differently configured tractors. Having a tractor dedicated to each crop saves a lot of precious time by eliminating the need to repeatedly

reconfigure a single tractor.

In addition, the contribution enables us to purchase accessories, such as a new cart equipped with a hydraulic jack for dumping the cart's contents, a sprayer for applying organic liquid fertilizers and plant protection, a seed drill, a set of cage wheels for puddling rice fields, and new ploughs.

We considered many brands of tractors, and finally selected the Massey Ferguson because of the remarkable fuel efficiency of its Simpson engine. While our 40 horsepower Mahindra tractor uses approximately 4.5 liters of diesel per hour, the Massey Ferguson uses only 2.5 liters of diesel per hour. This difference adds up to a substantial savings of energy and money over the lifetime of the tractor.



*The new Massey Ferguson with Tomas (sitting), Brooks, and Andre (left)*

After receiving the new tractor, Annapurna's 30 year old International Harvester tractor, which had to be push started, was transferred to the Farm Group. It is being maintained by Water Service, and is available to Auroville's farms for hauling and light cultivation work.

### Mission Statement:

- Within the context of producing food for the experimental, international township of Auroville, the stewards of Annapurna aim to discover, develop, demonstrate, and document methods of food production that are organic, regenerative, healthy, and humane. We emphasize the utilization of traditional techniques and the conservation of indigenous biodiversity.

## *Free Food Starts to Flow in Auroville*

Auroville has, since its inception, worked to build an internal economy which does not use money. Ideally, in Auroville the essentials for living; such as shelter, clothing, food, and medical care, would be provided to all Aurovilians, who would, in return, devote their energy and talents to the development and maintenance of the township.

While impressive progress has been achieved in decommo-

di-fying shelter, labour, and even medical care, food produced by the township's farms remains very much a commodity.

To begin to explore the challenge of decommo-difying food, in July Annapurna started supplying free foodgrains to Auroville's Solar Kitchen. The farm's expenses for producing such grains are covered by a grant provided by the Maroma Company.

This initiative was encouraged

by Paul and Laura, Maroma's executives, who feel that the time has come for us to turn our attention toward the very complex and stimulating task of decommo-difying food. Such an initiative demands that we develop new arrangements for adequately compensating both the farmer and the natural environment, while also motivating the farmer to be productive, efficient, and environmentally responsible.

## Pongam Tree Oil, a Substitute for Diesel Fuel



Pond pump powered by pongam oil

This summer Annapurna joined an experiment to evaluate the performance of pongam tree oil as a substitute for diesel fuel in irrigation pumps and electricity generators. The oil, which is extracted from the seeds of the *Pongamia pinnata* tree, can be produced and processed locally.

The experiment was started in Auroville by Manfred, a German engineer. In 1998, Manfred learned about a project being run by the Indian Institute of Science in Bangalore, and a non-governmental organization called Sustainable

Transformation of Rural Areas, to develop pongam oil as a source of both fuel and income for villages. The oil has the potential of becoming a better source of income for villagers than cashew nuts. He thought that Auroville would be a good place to test the oil, so Manfred went to Bangalore, met the organizers of the project, and returned to Auroville with 10 litres of pongam oil. This oil was used in a pump and a generator at Siddhartha farm, and in a diesel motorcycle. The performance was encouraging, so Manfred placed an order for

5,000 liters.

The oil is presently being used in many engines in Auroville. One of the next challenges in the project will be to establish pongam tree plantations. So far, germination of the seed has been difficult.

We are excited about this experiment because pongam oil could become a source of income as well as renewable energy for Annapurna farm.

## Food Surpluses, Farmer Suicides, and Starvation

### Editorial

Beyond a certain level of capital investment in agriculture and food processing, malnutrition must become pervasive.

-Ivan Illich

Ivan Illich, possibly the 20th Century's most perceptive critic of modern capitalism, observed, "a radical monopoly of commodities tends to remove entire populations from precisely those goals for which the production and general distribution of the product had been originally advocated." Illich clearly recognized that capitalism's dysfunctions and contradictions are manifested mercilessly in agriculture.

Today, in India, such contradictions threaten to bring down the ruling Government, which has been unable to resolve the embarrassing paradox of an unprecedented surplus of foodgrains, and an increasing number of deaths due to starvation throughout the country.

To make matters worse, although the Government has resorted to costly overprocurement of foodgrains, farmers are killing themselves because

bankruptcy leaves them few options.

If Illich was right, so long as the Government remains committed to liberalizing the agricultural economy, it is likely to find itself with very limited policy options, and an increasingly tragic legacy.

## Starting the Annual Rice Crop--Visuals



Velu puddling rice plot and incorporating green manure



Ediyane levelling mud



Tomas sowing rice seeds



Nagayane pulling seedlings



Manjula (right), Kupamma, and Asotha transplanting rice seedlings

## Sangeeta Marries Katrayan

Some readers of the first issue of *Annapurna Times* indicated an interest in learning more about the people who work on the farm. In this issue, we report on a recent significant event for Sangeeta, from Vanur village.

On 2 September, Sangeeta married Katrayan at a marriage hall in the nearby village of Thirichitambalam. Sangeeta's groom was selected by her mother, Sangani, who has worked at Annapurna for 11 years. Katrayan works as a driver.

The dowry that was given by Sangani to the groom included a new moped. The moped and the expense of the marriage ceremony; hiring musicians, caterers and the hall, were a considerable expense for Sangani.

Sangeeta rejoined the crew at Annapurna 4 months ago, after working for 6 years in nearby factories. Before working in the factories, she worked at Annapurna for 4 years, from the time that she was perhaps 10 years old. 10 years ago, there was little provision for educat-

ing children in the villages around Annapurna. Sangeeta attended school for only three years before she started working. Presently, she attends night school where she has learned to read and write in Tamil, and do arithmetic.

Reflecting on Sangeeta's experience, we recognize that the educational opportunities for children in this area have improved since 1990. Today, most young children attend school, and education is now more generally recognized as essential for upward mobility.



Sangeeta and her mother, Sangani

## Area Under Grain Production Increases

The area devoted to rain-fed millet production increased from 15 to 30 acres this year at Annapurna. The area was increased in response to growing demand for such grains, particularly from the Solar Kitchen. Such an increase was made possible by the new tractor and the additional storage space for such grains in the godown.

In order to make more land available for food production, 8.5 acres of firewood planta-

tion was cut down and sold off, which provided some additional cash for godown construction.

In addition to grains, the area will be used to grow Indian sorrel, or rosella. Locally, in Tamil, the crop is called *pul-litchikeerai*. The rosella plant is used in many ways. The leaves can be crushed to make a sour chutney, or they can be cooked as a spinach. The fruit can be made into jam. And the dried flowers can be boiled to make

a syrup concentrate for juices. We grow rosella in combination with millets to recover some of the cost of raising a low-value millet crop.

The crops will be grown in rotation with leguminous green manures which add nutrients and organic matter to the fields.

Because ecosystem services are not fully 'captured' in commercial markets or adequately quantified in terms comparable with economic services and manufactured capital, they are often given too little weight in policy decisions. This neglect may ultimately compromise the sustainability of humans in the biosphere.

- Robert Costanza

## Ecological Accounting Data Collection Begins

In August we entered the second stage of our ecological accounting study by beginning data collection from selected plots of the millet and rice crops. Measurements being recorded include the energy, labour, money, water, and nutrients invested in the production of each crop. Records will also be made of outputs from each plot. Such data will be used to construct a framework for monitoring the ecological impact and economic costs of our production practices.

We have received very helpful advice on data collection and interpretation from Professor P.S. Ramakrishnan at JN University in Delhi, Dr. John Reganold at Washington State University, Dr. Pierre Curmi at the French Institute in Pondicherry, and Professor David Pimentel at Cornell University. Brooks is still searching for more Indian collaborators for the study.

In August we also purchased and installed in the farm's office a computer which will

store our data in a relational database program. Construction of the database will start after we have assembled a representative body of data to inform the program's structure.

In July, Brooks participated in a workshop in Bangalore on multidisciplinary methods for environmental problem solving, organized by the Indian Society for Ecological Economics. The workshop provided a very valuable opportunity for discussing the study with Indian scientists.



Brooks collecting soil samples for analysis

## Annapurna farm

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WE'RE ON THE WEB!  
[www.auroville.org](http://www.auroville.org)

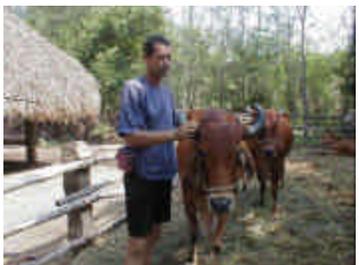
## Organic Matters!



*Chickens in cow corral*



*Chicken eating ticks and flies*



*Tomas with Lakshmi*



*Godown expansion underway*

## Supporter Acknowledgements

Without the help which we receive from friends in Auroville and abroad, Annapurna's development would not be possible. We would like to acknowledge the crucial assistance that we have received from the Gateway Trust, Maroma, Shawn and Diane Johnson, Luciano Gemo, Stichting de Zaaier, friends from Holland, Mark and Rosie Deats, the congregation of the First Presbyterian Church of New Haven, CT., Ursula, Suzanne MacDonald, Lynn Autry, the Foundation for World Education, the Jadetree Two Foundation, and the Leighty Foundation.

In August, Shawn and Diane Johnson, old college classmates of Brooks, were able to pro-

vide financial assistance to enable the farm to purchase several pieces of farming equipment. While this has been a tremendous opportunity for us to address identified needs, it is still important to expand our access to a secure source of water. Towards that end, we need to enlarge our water ponds, and would like to solicit your help to raise funds for this remaining project. We expect the pond digging to require about US\$10,000 to complete, and we have begun to actively raise funds to meet this goal. We have about 25% of the money already, and would like to make sure that we have the total funds prior to beginning the project next summer.

Shawn and Diane's response to our appeal for support was overwhelming. Their gift has accelerated the farm's development considerably. To Shawn and Diane, and to all of the farm's friends, we say a big

**Thank you!**