



# Annapurna Times

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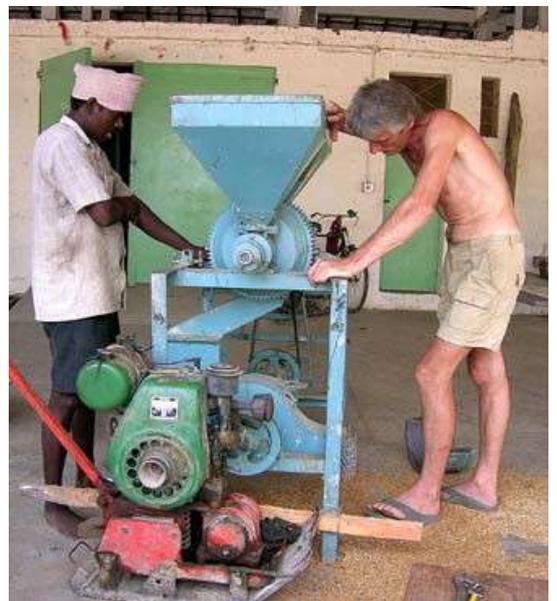
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This March Annapurna purchased machines for processing our primary fieldcrops; rice and millet. The farm purchased a centrifugal dehusker for dehusking rice, an asha mill for dehusking and polishing waragu, and a flour mill. All machines were purchased second hand near Theni.

For the past year, we had been investigating mechanization options for processing our grains. Brooks traveled to Coimbatore, Chennai and Madurai to gather information from machine manufacturers and dealers. He and Andre also took grain to mills to test the output from various machines.

After selecting the type of machines that suit our requirements, Andre and Kandavel, an employee of the farm, traveled to Theni, west of Madurai, to locate and purchase second hand machines. They spent a week there, visiting mills in nearby villages and also collecting information from workshops where such machines are fabricated. They purchased the asha, the rice dehusker and the flour mill. They had the machines refur-

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Andre (right) and Kandavelu examining the Krishna centrifugal dehusker

## Gir Bulls Join the Herd

### 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

After years of trying different breeds of dairy animals, Tomas concluded that he prefers to work with the Indian breed *Gir*. *Gir* cattle have fewer health problems than exotic breeds such as Jersey and Holstein. They suffer less during the heat of the summer. We also find them sweet natured and attractive.

In 2003 and 2004 we acquired two *Gir* bull calves from the Sri Aurobindo Ashram's Lake Estate farm which maintains *Gir* herds. Both are growing well and have begun to serve our cows.



Brama (left) and Atma

## *Ecological Accounting Project Terminated*

In December 2003 Brooks presented a paper, On-farm Ecological Accounting: Methods, Resources and Challenges, at the third conference of the Indian Society for Ecological Economics (INSEE) at the Indian Institute of Management in Kolkata.

In January 2004 Brooks terminated the five year old On-farm Ecological Accounting project. The project was terminated for several reasons.

Stichting de Zaaier, the project's primary sponsor since 2001, informed Brooks in the spring of 2003 that it would not fund the study beyond the summer of 2005. Within Auroville, the Sri Aurobindo International Institute for Education and Research rejected Brooks' request for sponsorship. In 2003 Brooks was collecting production related data from the farm's crops, designing a relational database to store and analyze such data, and compiling a biophysical reference manual for agricultural ecological accounting. Rather than adding fundraising to this list of activities, he decided that the study should be terminated after he delivered his paper at the upcoming INSEE conference.

At that point it was clear that the mechanization of grain processing at Annapurna would require somebody to spend a substantial amount of time to identify and acquire the appropriate equipment. Brooks decided that he should devote his time and energy to this challenge. In 2004 he also developed and commercialized new product lines -- rosella and tamarind syrups and cheese spreads, adding value to the farm's rosella, tamarind and milk crops.

Brooks discontinued the study also because it's primary premise -- that closely measured and tracked biophysical costs of crop production could be used to better inform food prices, -- began to appear unworkable, especially in a global marketplace. The complexity of such a task renders it unfeasible. The burden of data collection and recording is greater than most farmers can manage. The number of ecological accountants that such a system would have to employ at the farm level throughout the world would surely increase the price of food prohibitively.

In addition, the study's premise appears politically improbable in light of the U.S. Government's agricultural, environmental, foreign and energy policies. To comply with the dictates of the food processing industry the government deprives consumers of information about their food's country of origin and the means of it's production. Consequently, consumers cannot distinguish between imported and domestic meat, or between genetically modified and non-genetically modified foods. The U.S. Government has obstructed efforts to label imported and genetically modified foods because such information could be used by consumers to make informed choices which would frustrate the attempts of large corporations to globalize and control the food system. When the U.S. Government prefers to kill thousands of people, and spend hundreds of billions of dollars to control and extract the last remaining fossil fuel reserves rather than invest such money in developing and promoting renewable energy technology, and that government gets

re-elected, we can conclude that ecological accounting is so far off the political and public radar that the theory and practice of economics are not going to be ecologically sensitized in our lifetime.

Finally, Brooks abandoned the project because he sensed dwindling commitment within Auroville to developing an ecologically informed food system. Auroville appears to be drifting closer to the conventional market system in which prices are essentially a compromise between producers' desperation and consumers' determination to maximize satisfaction and consumption by buying food as cheaply as possible.

Brooks is particularly indebted to Dr. Martin Bender, director of the Sunshine Farm at the Land Institute in Salina, Kansas, for the generous amount of guidance and support that Marty provided, particularly his patient explanation of energy accounting methods for human and animal labor. Brooks also received much-appreciated guidance and encouragement from Dr. P.S. Ramakrishnan at Jawaharlal Nehru University, Delhi, Dr. David Pimentel at Cornell University in Ithaca, NY, and Dr. Gary vanLoon at Queen's University, Kingston, Ontario.

Brooks is also grateful to those who supported the study; the Foundation for World Education, the Leighty Foundation and Stichting de Zaaier.

Through this experience, Brooks has gained a greater appreciation for David Ehrenfeld's remark, "I don't have much hope for a civilization so stupid that it demands a quantitative estimate of the value of it's own umbilical cord."

## *Grain Milling Equipment Purchased cont.*

*(Continued from page 1)*

bished in local workshops before shipping them to Annapurna.

The farm is presently shopping for grain cleaning and grading machinery, as well as a machine for polishing the rice.

We received considerable guidance and information from Dr. R. Viswanathan in the department of agricultural engineering at Tamil Nadu Agricultural University in Coimbatore, and also Dr. N. Venkatachalapathy, an agricultural engineer at the Paddy Processing Research Centre in Thanjavur. Both have very patiently and generously shared their knowledge about grain processing with us.



*Asha machine (rear) with diesel engine and flour mill in Annapurna's barn*

## Assessment Report Prescribes Market Discipline for Auroville's Farms

In 2003-04, a year-long assessment of Auroville's farms was conducted by Dave, John, Priya and Tomas, with funding from Stichting de Zaaier. In December 2004, the Auroville Farms Assessment report, written by Dave and John, was released. The report concluded that farming in Auroville is probably not viable. The report's authors assert that Auroville's agriculture is not viable because it is "a largely welfare system" plagued by "an overdependence on external funding, high prices, and relatively low outputs."

However, the authors maintain that "there is no reason why (economic viability) cannot be achieved," because "there exists considerable room for improvement of basic profitability." The authors assert that, "if (Auroville's farmers) can improve the environment this will allow for an increase in the organic production of food that is good for Aurovilians and paves the way for profitabil-

ity." They recommend that Auroville's farms should follow a policy of "moving closer to the market in terms of quantity, quality and realistic prices," and insist upon a "need (for farmers) to actively engage the market and give value for money."

The report identifies insufficient investment capital as a major factor hampering the development of Auroville's agriculture. They authors therefore recommend a shift from the present "welfare system to targeted start ups, with the ultimate aim of self-financing."

The assessment process was encumbered by a shortage of financial and biophysical data, but it has set in motion a process of record keeping, planning and evaluation that the Farm Group will build on.

The assessment report (1.1 MB) can be downloaded from the following link: <http://www.auroville.org/environment/agri.htm>

## Cow Urine Catchment System Installed in Dairy

During a visit to Annapurna farm last May, Dr. O.P. Rupela, a microbiologist at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), strongly advised us to make better use of cow urine. At the time, we were capturing the urine in coconut fiber which was added to the compost. Cow urine, he pointed out, can be used as a pest repellent as well as a fertilizer. His enthusiasm about the value of cow urine stimulated us to install a urine catchment system. Andre worked with a mason from July through August, installing a system of drains and a 2,000 liter storage tank in the dairy. The entire floor had to be chipped up so that a surface with greater slope could be

plastered by the mason. The cows patiently observed all of this activity from the corral which served as their makeshift home.

After installing the catchment system, we needed a mechanism to apply large quantities of diluted urine to our crops. Andre and Brooks went to Chennai and purchased a tractor mounted sprayer. This sprayer supplies two large nozzles, making it possible for the tractor driver to apply large quantities of diluted urine on a field.

Applications of cow urine to our pigeon pea (toor dal) crop repelled pests, but only temporarily, indicating a need to use urine in addition to other natural pest control methods in our production

system.

Dr. Rupela is presently advising us on a method of preparing Neem Seed Kernel Extract, a bio-pesticide that ICRISAT has been experimenting with and promoting. We would like to acknowledge our deep appreciation for Dr. Rupela's guidance in our search for organic pest control methods. We are additionally grateful for his assistance in arranging for supply of pigeon pea seeds from ICRISAT's collection. We commend ICRISAT's scientists for researching and popularizing strategies which strengthen farmers' self-reliance, and which encourage the utilization of India's tremendous biodiversity.

**Bits and watts – which here stand for units of information and energy, respectively – when packaged into any mass-produced commodity in amounts that pass a threshold, inevitably constitute impoverishing wealth. Such wealth is either too rare to be shared or it is destructive of the liberty and freedom of the weakest.**

-Ivan Illich 1977

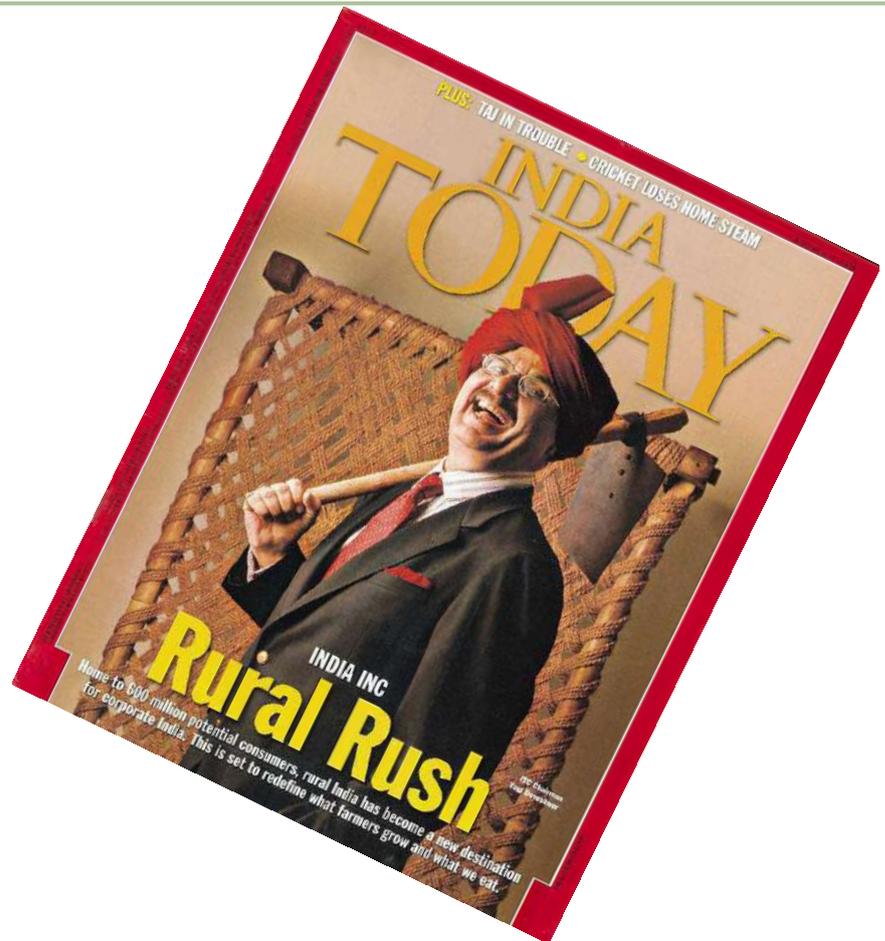


Mason Ayinaar resurfacing the dairy floor



Ayinaar finishing the urine catchment tank

## Rural Ruse: Agribusinesses Profess A Social Conscience



In December *India Today* magazine reported that several of India's largest corporations lately have discovered some of the things that large corporations elsewhere (eg. ADM, Cargill, RJR/Nabisco, etc . . .) have known for many decades. Among these discoveries;

1. rural people can be duped into buying industrially manufactured goods if such goods are advertised as being superior to traditional goods,
2. immense profit can be earned by buying cheap ingredients from farmers, processing such ingredients, and selling the processed product, preferably to foreign consumers,
3. selling agrichemicals is even easier than selling heroin because agrichemicals are legal and sometimes subsidized,
4. this exercise in enriching oneself and one's stockholders can be presented to the public as an act of philanthropy if one hires the proper public relations firm.

While these corporations' executives, described by *India Today* as "brave hearts", congratulate themselves in public for saving farmers from such unspeakable hardships as eating millets, and having to use cow manure as fertilizer, the same executives congratulate themselves before their shareholders for skyrocketing dividends.

How does the farmer fare in this rural penetration of capital? If the experience of farmers in the USA is any indication of how this will turn out, India's farmers will be better off if they stick to millets and manure.

Over the past century, millions of American farmers have been forced into bankruptcy by the cost-price squeeze, whereby the costs of industrially manufactured inputs are always spiraling up while the prices for farm produce are always falling. Those few farmers who survived the squeeze were bankrupted by the technology treadmill; the never-ending imperative to purchase the latest machines, seeds and chemicals in a self-defeating contest to produce more food more cheaply than all other farmers. Falling income and spiraling costs meant that few farmers could pay the interest, much less the principal, on their debt.

As anybody familiar with the plight of American farmers would have expected, India is experiencing an epidemic of farmer suicides. (See [http://www.ezilon.com/information/article\\_4667.shtml](http://www.ezilon.com/information/article_4667.shtml) for Cahal Milmo's report on farmer suicides.)

ITC, a tobacco company directed by Yogi Deveshwar (pictured on *India Today* cover), is leading the rural rush by setting up a computerized network of direct sourcing and sales outlets as well as rural shopping malls throughout India's countryside. ITC is the loudest to play up the supposed social service that it has undertaken. Perhaps it is screaming to dispel the incredulity of people who know that ITC earns 70% of it's profit by selling a fiercely addictive product that kills people. And now, in addition to tobacco, ITC is going to push agrichemicals. To accept this company's proclamation of social responsibility as wholehearted is to believe absolutely anything.

Brooks had a first hand look at the rural rush when he attended the Agrotech fair in Chandigarh, Punjab, in December. Having traveled a very great distance hoping to find tools and services that would help Annapurna to produce healthy food, Brooks

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was disappointed to encounter only goods that transform farmers into indebted mass producers of raw material for the food processing industry. Most of the products displayed were suitable only for large scale farms.

The fair featured components for confined feeding operations, including the indispensable growth hormones, commercial feeds and antibiotics, the latest and largest tractors, cold storage solutions, irrigation equipment, hybrid seeds and chemical fertilizers and pesticides. The fair was sponsored by the prime rural rushers; ITC, DCM Sriram, TATA, Reliance, Godrej, Hindustan Lever, Nestle and Mahindra, promoting their latest venture.

*India Today's* article, demonstrating the sycophantic spin that we've come to expect from the corporate controlled media, concludes that ITC's rural marketing initiative is "proving correct the oldest theory of economics - . . . that the self-interest of each agent, if monitored and aligned well, automatically translates into a common good".

Now we understand why Yogi is laughing.

## Rice Biophysical Accounts For Monsoon Season 2004-05

Tomas has been continuously improving his biophysical and financial accounting spreadsheets in recent years. The following data was collected by Tomas for the farm's rice crop planted in August 2004 and harvested in February 2005.

**Area cultivated:** 6.18 acres (24,727 m<sup>2</sup>)

**Rice yield per acre:** 1,514 kg (1,991.83 kg paddy per acre)

**Water irrigated per acre:** 3,941,692 liter (2,769 liter per kg of rice)

**Diesel used per acre:** 181.6 liter (details of diesel used for entire area of 6.18 acres: irrigation 850 liter, tractors 165.55 liter, powertiller 93.08 liter, winnower 13.75 liter)

**Rain in this period:** 948.5 mm

**Labour days per acre:** 124.4 (note, US rice production uses about 1.5 days labour/acre. Philippines 41 days labour/acre using chemicals (Rutger and Grant 1980), completely human labour based rice production in Philippines used 474.4 days/acre (Freeman 1955).)

**Diesel used for irrigation per litre of water irrigated:** 0.000035 liter (or .035 liter diesel/m<sup>3</sup> water)

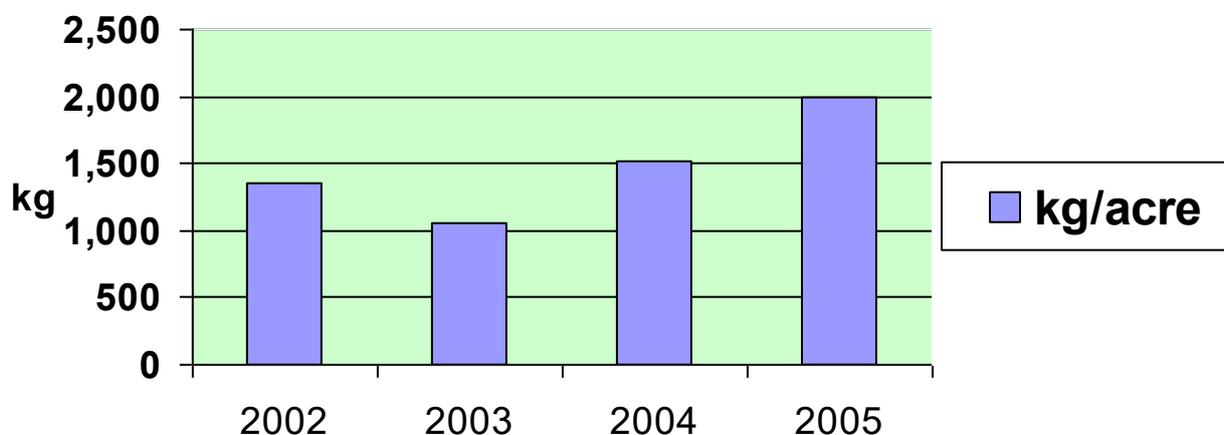
**Diesel used per kg of rice produced:** 0.12 liter

All of the water used for irrigation this season came from either the farm's rainwater catchment ponds, or from shallow wells. The borewell was not used for irrigation because heavy rains in May 2004 filled our ponds. The ponds were filled again by monsoon rains during the growing season. We were pleased to be able to produce this rice crop with water from renewable sources.

These figures cover the entire production process, starting with creating the seedling beds and ending with putting the bags of harvested, threshed and winnowed paddy into our store room.

We also harvested from our rice fields 5 trailer loads of rice straw which is used to feed cows in our dairy.

**Paddy yields at Annapurna farm**



Freeman, J.D. 1955. *Iban Agriculture*. London: Her Majesty's Stationer Office.

Rutger, J.N. and W.R. Grant. 1980 Energy use in rice production. In D. Pimentel ed. *Handbook of energy utilization in agriculture*, pp. 92-98. Boca Raton, FL: CRC Press.

## Employee Profile: Ambika, Tangappapa, Shanti, Kasturi



In the summer of 2004, four women from the neighboring village of Sethurpet; Ambika, Tangappapa, Shanti and Kasturi were promoted to full time positions at Annapurna. They had frequently been employed by the farm to process grains by hand on a part-time contract basis since 1995. As the free food scheme increased the volume of grains that need to be processed, it became necessary to employ these women full time. They perform general farm work when grain processing is not needed. The women had appealed for full time employment for several years, and were delighted when it finally happened.

As economic pressures force

Annapurna to mechanize grain processing, these women may soon lose their full time positions. At the rate of nearly two dollars per day, their labour becomes unaffordable in a marketplace glutted by labour and food.

The economic dislocation and marginalization of such women is widespread as agricultural machinery, particularly combine harvesters, proliferates throughout the countryside. Although industrial job opportunities are increasing, industries cannot absorb the masses of people being dislocated from the agricultural sector by mechanization and agri-chemicals. Mechanization is also dislocating people from other sectors, such as

domestic work, road building, and construction. Ambika, Tangappapa, Shanti and Kasturi represent the last generation of women to (wo)manually process grains in this region.

Capitalist agriculture has been as disastrous for the people who work on farms as it has been for the environment. The imperative of producing the cheapest food at a profit ensures that farmers will exploit human and natural resources .

The economy, which cannot recognize the difference between asset liquidation and income generation, has paradoxically rendered the labour of these and millions of other women nearly worthless and unaffordable.

**The 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.**

-Ivan Illich 1981

## Sultana Enlarges The Pack

In February, Brooks traveled to Madurai to search for a dog to replace Coromandel who has reached retirement age. With the help of several friends, he located Sultana, a five month old Great Dane, in Thirumangalam. Brooks and Sultana returned to Annapurna on the Vaigai Express train.

Sultana has integrated nicely with the other dogs on the farm and taken up Coromandel's work.

Coromandel has made big plans for his retirement, featuring a great deal of long awaited rabbit hunting.



Brooks with Sultana

## *Maroma's Free Food Experiment Accelerates Farm Development And Boosts Food Production In Auroville*

Now in it's eighth year, the Maroma-funded free food experiment has helped to dramatically increase the amount of food that Annapurna farm grows and supplies to Auroville. (see chart below) Prior to 1997, when the scheme began, Annapurna was unable to afford the investments that were necessary to rapidly increase fieldcrop production. Furthermore, such investments made little sense so long as Annapurna's produce was consumed only by the few Aurovilians who preferred it and could afford it.

The free food experiment has increased Annapurna's food production and Auroville's consumption of such food by directly targeting investments and subsidies to specific objectives. Maroma's contributions to the farm were earmarked for increasing Annapurna's capacity to grow fieldcrops. Annapurna was also giv-

en a subsidy equivalent to the value of the produce that the farm freely supplied to Auroville's Solar Kitchen. This subsidy created dependable demand for Annapurna's rice while also making it possible for Solar Kitchen to serve Auroville-grown grain without raising the price of meals.

The free food experiment has achieved objectives that market forces prohibited for many years. While increasing the township's self-reliance in food production the experiment has equitably allocated such food by giving all Aurovilians who dine at Solar Kitchen the opportunity to consume Auroville-grown organic food on a regular basis.

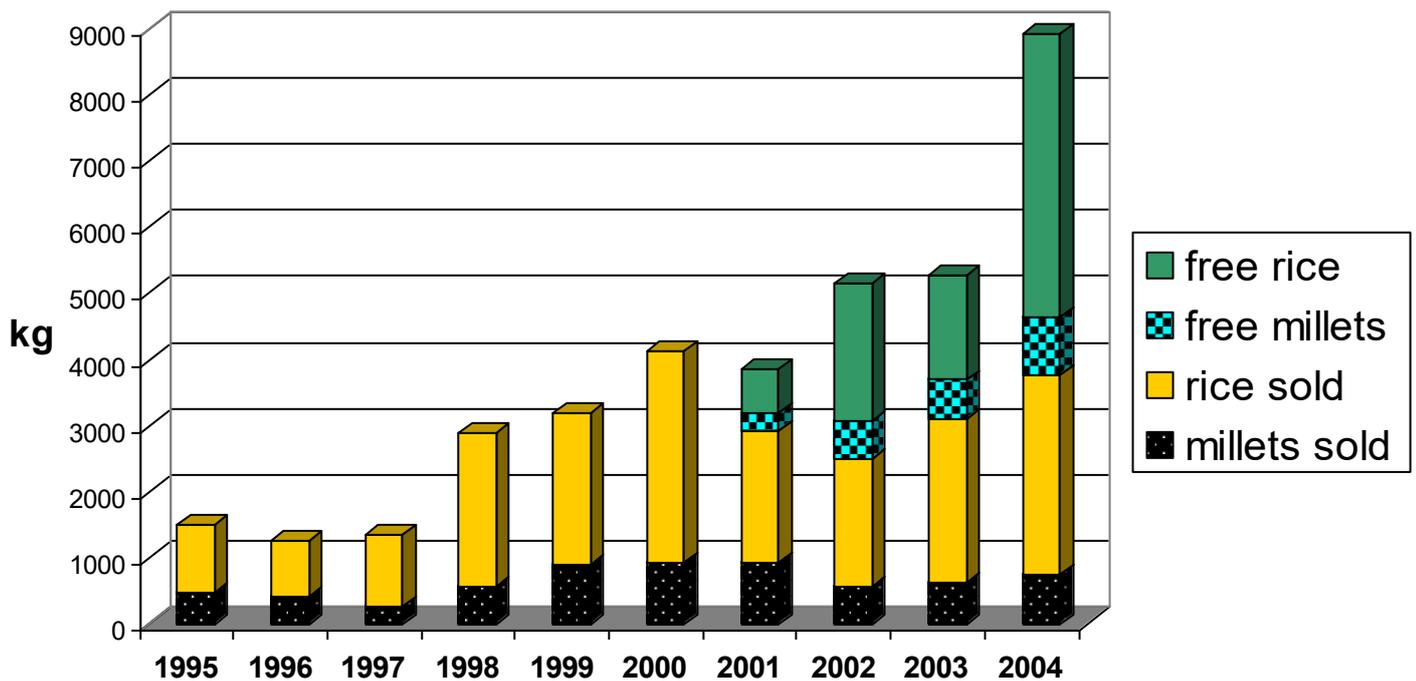
But the free food experiment has given us even more than this. The experiment has also given us food for thought by demonstrating that our community is

capable of achieving desirable outcomes that market forces will not deliver.

The Farm Group Assessment report (which is discussed on page 3) advocates the commercialization of Auroville's agriculture and the commodification of Auroville-grown food. Implementation of their agribusiness plan is likely to result in fewer Auroville farmers, less biodiversity on Auroville's remaining farms, a greater proportion of Auroville-grown food being processed and sold to affluent consumers in distant cities, and less affordable Auroville-grown food for Aurovilians.

For the residents of Auroville the choices are clear: agribusiness or agriculture, free market or free food.

**Annapurna fieldcrops to Auroville 1995 to 2004**



## Annapurna Farm

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*Ambika dehusks kudravalli (barnyard millet) on a traditional stone mill*

## Organic Matters!

Find this and previous issues of Annapurna Times on the www at:

[www.auroville.org/journals&media/annapurna/annapurna.htm](http://www.auroville.org/journals&media/annapurna/annapurna.htm)

## *Supporter Acknowledgements*

Friends around the world continue to help us to make very significant steps in our mission to make Annapurna an environmentally sustainable producer of foodgrains. Without such contributions our work would progress at a far slower pace, if at all.

We wish to thank Paul and Laura, Shawn and Diane Johnson, Luciano Gemo, Dutch friends, and the congregation of First Presbyterian Church of New Haven, Connecticut.



*Usha with our new puppy, Sultana, and Coromandel (right).*