

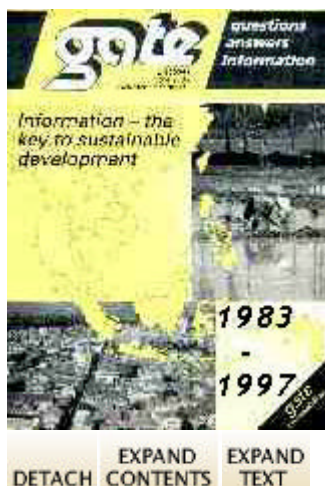
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Now the women of palri cook with biogas

by CORT

Palri is a medium-sized village in the Indian state of Uttar Pradesh. Most of the 1,000 families who live there are Jats, who are traditionally farmers. So agriculture is the principal occupation in the village. The land in this western part of the state is fertile, and the main crop in the area is sugar cane. Most of the villagers are quite prosperous, and most of the families have some members who are quite highly educated and work for the Government or in other jobs In Delhi and other big cities.

These people return to the village regularly for holidays or important festivals. The village has electricity and a matriculation-level school, its streets are brick-lined, and it has a good road link to the nearest city, Barout. In short, it may be described as a village with good connections to the outside world.

Everything started with local initiative

Two Janta-model biogas plants were installed in the village in late

1986. A youth leader with an M.Sc. in agriculture, who had been introduced to a whole range of appropriate rural technologies and who is always very keen to promote the socio-economic development of the village, thought of following up this programme. Consequently he discussed the project with the Secretary of CORT and AFPRO (Action for Food Production) experts. The idea was to organize a programme to train masons in the village to construct Deenbandhu biogas plants. AFPRO gave its consent and a three week training programme - coordinated by CORT - was scheduled for the month of January 1987.

The village youth leader identified a group of ten local masons from Palri and three other nearby villages. He also persuaded other inhabitants of the village to have biogas plants installed and to connect them to the latrines, so that besides the dung night-soil could also be used to generate gas; also, building toilets for this reason would help improve amenities for women, girls and sick people. (The usual practice in villages is to defecate in the fields which is hard on women, girls and the sick and aged.)

Training course and construction **of** the plants

In all, twelve biogas plants were built **in** twelve households **in** the village. Two plants have a capacity **of** 2 m³, two a capacity **of** 4 m³, while the other eight have a capacity **of** 8 m³. The different sizes **of** the plants correspond to the different numbers **of** people and animals **in** the various households. Four **of** the plants are connected to toilets; two **of** these are partially supplied with night soil, while for the other two the superstructure over the latrine seat has yet to be completed.

In the course **of** a visit to the village **in** mid-October 1987 (nine months after the installation **of** the plants) it was found that all the plants are **in** perfect working order and all are being used. The gas they generate is being used mainly for cooking and emergency lighting. Although one **of** the households has electricity, the family has installed biogas lighting fixtures (the electricity supply is not altogether reliable).

Reaction **of** beneficiaries

Eleven **of** the households **use** the gas mainly for cooking. The women were found to be very relaxed and happy while cooking. When asked about the benefits they derive from the biogas plants, they replied, "For us, biogas has become indispensable. Our day begins and ends with it. Previously we had to spend hours **in** smoke-filled kitchens. Tending a fire and keeping it burning meant that we had to be **in** the kitchen the whole time when we were cooking. Tending a fire **in** the rainy season used to be very hazardous because the wood or dung-cakes, after absorbing moisture from the air, produced too much smoke (the kitchens are usually very small compared to other rooms **in** the house, and are often poorly ventilated). Now all we have to do is strike a match and the fire is ready - without smoke, without our having to worry about gathering fuel or keeping it dry **in** the rainy season etc. Now our small children can also sit with us, whereas before they used to start crying, mainly on account **of** the heat and smoke **in** the kitchen. We no longer have to put up with the excessive heat from the chulha, as we used to. Now we can also attend to other household chores while the food is being cooked. Cooking has become so easy now, since the biogas plants were installed, that even our very young daughters have started to take an interest **in** it: the absence **of** smoke encourages them to come into the kitchen, and the biogas burner makes cooking so easy. We spend almost the same time cooking but we feel more relaxed now. **Of** course, the utensils are no longer blackened and so it takes us less time to clean them. Whenever we have guests now it is no problem at all to cook or make tea for them, regardless **of** the hour **of** the day or night."

When asked about the work and the technicalities involved **in** maintenance **of** the biogas plant, the women replied, "No, there's hardly any problem. Previously we also had to spend hours preparing dung cakes. We had to carry them and store them elsewhere as they dried out. That involved some danger, too, especially during the rainy season, because there are some poisonous reptiles and insects which take shelter **in** the stored dung cakes. All we have to do now is mix the dung with an equal amount **of** water and feed it into the plant daily. Previously, if there was a power failure at night we had to spend money on candles and kerosene. Now we need none **of** those things; we simply strike a match or ask our children to light the biogas lamp. And other things, like taking water out **of** the pipeline, are hardly any bother at all: once taught, small children can do it easily. We are indeed very fortunate to have biogas **in** our houses."

Each household was visited individually. As soon as the lady **of** the house became aware that we - the investigators - were from the organization that had been instrumental **in** installing the plants, she asked us not to go until we had had a cup **of** tea - prepared on the gas. Some **of** the women insisted that we should stay to dinner.

Use of slurry

The slurry has been used by five or six households on their fields, though only one **of** the farmers, who is more progressive, has used it systematically. He used it on one "big-ha" **of** land for his sugar cane crop, together with a quantity **of** urea and disulphate, which he had used previously. He claims that he is certain to get a 50 per cent bigger yield from this one "big-ha" **of** land. (Generally the sugar cane yield from one "big-ha" is 40 Qtls. and he said he was sure to get 60 Qtls. from his experimental field.) All the owners **of** biogas plants intend to **use** the slurry on their fields **in** the coming sowing season.

Social aspects

Two **of** the plants are run partly on night-soil. These plants are installed **in** the households **of** families who are influential **in** the village. Both are using the gas for cooking and emergency lighting. These households receive many guests and other villagers daily, as a part **of** the normal pattern **of rural** life. When asked about their own and other villagers' attitudes to these biogas plants they replied, "There are all kinds **of** people **in** the village and their mentalities naturally differ. There are some who even criticize the dung-fed plants and the food thus cooked on the gas, not to mention the night-soil. Such people refer to the food cooked on the gas as 'gobar ki Roti', 'gobar ki sabji', 'gobar ki chai' etc. (dung chapati, dung vegetable, dung tea). As for our womenfolk, they have no aversion to it. They are all educated and no member **of** our family has been stigmatized. "

Problems

Eleven **of** the twelve owners **of** biogas plants have no problems at all. Only one household has not yet learned how to cook with it and uses it only for lighting, as does another house which has no electricity supply. This particular household chose the wrong site for the plant: the house is located on the village outskirts, and only one or two people ever stay there, together with the cattle, while the rest **of** the family live **in** the village.

Originally it was also planned to connect all the plants to latrines; but some owners are unwilling to do this on account **of** their religious beliefs.

As regards energy conservation there are some problems and many more will crop up if the biogas programme catches on. One plant owner put it very simply: "**In** my household we used to dispose **of** the stalks **of** our field crops by burning them; but what can I do with them now?" Clearly, a means **of** utilizing this plentiful agricultural biomass will have to be devised - perhaps it can be used to make briquettes.

Great interest **in** biogas plants

As already mentioned, two Jantamodel plants were installed **in** two separate households **in** the same village shortly before the Deenbandhu plants. One **of** these households was visited and it was found that the user is totally dissatisfied with the plant. Admittedly, the wrong site was chosen for the plant and there are fewer cattle **in** this household. But now, having seen the Deenbandhu plants **in** operation **in** other households **in** the village, this user wants one as well. **In** addition, there are twenty other households **in** the same village interested **in** having biogas plants installed as soon as possible. There are many other families who are also interested but owing to shortage **of** space and financial constraints, as well as the fact that they have fewer cattle, they cannot have this facility.

In two nearby villages - respectively 1 km and 6 km from the study village - there are two households which have also had Deenbandhumodel biogas plants installed. The heads **of** these households happened to visit Palri, and after seeing the plants **in** operation and the benefits **of** biogas they contacted the trained masons and had the plants built. It is reported that "there are more families **in** those villages who are also interested now."

CORT has also utilized the services **of** one **of** the trained masons from the village, by seconding him to organize a programme on techniques **of** constructing the plant for two Bihar-based voluntary organizations - Shramjivi Unnayan and Nav Bharat Jagriti Kendra.

Apprenticeship **in** Ecological - Horticulture

The Agroecology Program/U. C. Extension offers a 6-month Apprenticeship **in** Ecological Horticulture, April 4 - September 30, 1988 at the Farm & Garden, Santa Cruz.

Emphasis is on hands-on learning with instruction **in** horticultural methods (sowing, cultivation, composting, propagation, irrigation); cultivar requirements (vegetables, herbs, flowers, fruits); and pest and disease identification and control. Application deadline is December 5, 1987.

For further information, please write:

Apprenticeship

Box A

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Abstract

In twelve households **in** the 1,000 household village **of** Palri, **in** the Indian state **of** Uttar Pradesh, Deenbandhu-model biogas plants have been installed and are **in use**. The original idea came from a young inhabitant **of** the village who has a degree **in** agriculture. On his initiative a three-week training course for biogas plant builders was held by CORT (Consortium on **Rural** Technology) and AFPRO (Action for Food Production). The biogas is used for cooking and lighting. Meanwhile, a further twenty households **in** the area are planning to have the same kind **of** biogas plant installed.

Resume

Dans 12 foyers du village de 1000 habitants de Palri dans l'Etat indien d'Uttar Pradesh, des installations de biogaz du type Deenbandhu sont en service. L'impulsion etait venue d'un jeune habitant du village, ingénieur agronome de par sa formation. Sur son initiative, le CORT (Consortium on **Rural** Technology) et l'AFPRO (Action for Food Production) créèrent un cours de 3 semaines destiné à former /es constructeurs d'installations de biogaz. Le biogaz est utilisé essentiellement pour la cuisine et pour l'éclairage. Les femmes des 12 foyers concernés sont très satisfaites du fait que cette installation leur facilite le travail quotidien à la cuisine. Entre temps, 20 autres foyers prévoient la construction d'une installation au biogaz.

Extracto

En 12 hogares de la aldea Palri, de 1.000 habitantes en el estado indio de Uttar Pradesh, se encuentran ya en funcionamiento plantas de biogas del tipo Deenbandhu. La iniciativa la tuvo un joven de la aldea, ingeniero agronomo, a cuya propuesta se realizaron cursos de instruccion, de tres semanas de duracion, para constructores de plantas de biogas, a cargo del CORT (Consortium on **Rural** Technolog) y del AFPRO (Action for Food Production). El biogas se utiliza principalmente

pare cocinear y pare el alumbrado. Sobre todo las mujeres de los doce hogares estan plenamente satisfechas de sus plantas de biogas, ya que les facilitan los trabajos de cocina diarios. Otros 20 hogares tienen prevista entretanto también la instalación de una planta de biogas.



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