

Kolkata can be a lead model



THE US state department's *eJournal USA* (Vol 18, No.10), which focuses on Earth Day 2014, mentions that this year's theme is urban greening. This, the journal says, is an area where civic pride intersects environmentalism. It emphasises that leaders in environmentally-conscious municipalities, in their effort to reverse environmental degradation, address the issue "by preserving farmlands and green spaces and recycling trash".

Significantly, this theme very closely describes a Kolkata phenomenon; something that happens in the well-known green stretch east of the Eastern Metropolitan Bypass, popularly known as Dhapa and, historically, as Dhapa Square Mile. The Earth Day text referred to earlier rightly points out that local governments are well-suited to fix environmental problems, "They make their own distinctive policies and control budget. Approaches to sustainable environmental practices differ but leadership by mayors and dedicated resources are common characteristics of the municipalities making the greatest strides," it says.

All this has happened in Kolkata. In 1879, Bhabanath Sen, a Bengali *zamindar*, was allotted a 20-year lease for one square mile of land retained for the purpose of growing vegetables using garbage and wastewater. The initiative was taken by an Indian Civil Service officer who was in charge of the Calcutta Corporation in 1878 and knew about Sen's successful experiment in growing vegetable on trash, which he did in the *char* lands of Patna and Bankipur.

Interestingly, the Dhapa Square Mile was exempt from all kinds of taxes. In fact, at the time of undivided Bengal, three parcels of land were declared "crown grant", enjoying total exemption from all kinds of taxes. These were the lands belonging to the Kalighat temple, the Khashmahal property of the Nawab of Murshidabad and the Dhapa Square Mile.

The Dhapa greens provide the city 147 tonnes of vegetables every month. The average value of the produce is well known among researchers and was arrived at on the basis of research in 1983 and published in 1985 as a part of a project on the East Calcutta

Wetlands. Subsequently, another detailed survey was carried out in Dhapa from January through December 1985 pertaining to the distribution of garbage and sewage, cropping pattern, marketing and labour utilisation and such others. The results were published in 1986 in a report, "Growing Vegetables on Garbage: a village based experience of city waste recycling" (Institute of Wetland Management and Ecological Design).

The practice of garbage farming, it was found, dates back to the later part of the 19th century, when Bhabanath Sen earned the lease right to do this work. From 1879 to 1968, the distribution of garbage was helped by a parallel system of light railways in the area. Up to 1968, 110 wagons of garbage per day was distributed in the area. This railways system has been replaced since 1974 by tipper trucks and payloaders vehicles. Garbage was dumped in such a way as to leave waterbodies or *jbeels* between two filled up areas.

This unique system of disposal resulted in the development of alternate strips of garbage-filled lands and waterbodies containing sewage and can still be seen in this area. It was on these strips that the cultivation of vegetables started, with irrigation provided from adjacent waterbodies. At the time of the survey, there were 2,490 farm plots using garbage as an agricultural substrate. The average size of the plots ranged between 135-4,000 square metres.

The garbage was dumped directly on to the field. The common practice was to let it lie for 15 days to allow the heat to escape from it. After this, there was picking and sifting to remove pieces of metal, leather, rubber, stones, bricks and other bodies. This was followed by weeding, hoeing and levelling of the garbage and spreading it all over the field. The field was then prepared by ploughing and harrowing and alternate small ridges. Furrows are built throughout and seeds are sown on the ridges. The furrows are generally used for irrigation and also for inter-cropping.

Garbage farms over an area of about 800 acres produce, on an average, about 1,068 quintals of vegetables and about 15,000 cauliflowers

in a year. The major crops are cauliflower, ridge gourd and maize. Secondary crops grown by inter-cropping and the major crops, according to the season, are brinjal, bottle gourd, pumpkin, bitter gourd, yam, different kinds of spinach and drumsticks, amongst others.

Today, a lot of changes have taken place in the agricultural field of Dhapa, which are not apparent from outside. However, an improvisation and restoration project can restore past glory with a little effort. To start with, the water bodies will have to be restored to their earlier architecture. They are within Ramsar Site and also within the Wetland Map referred in the 1992 judgment of the late Justice Umesh Banerjee of Calcutta High Court, which disallows filling up of any of them without the permission of the court.

The restoration of *jbeels* will also include the work of re-establishing the internal linkages among the *jbeels* for the supply of wastewater flowing into Dhapa from the drainage canals flowing beside. The next task will be to reinstate the supply of garbage by corporation vehicles, particularly those carrying market garbage, which, invariably, are rich in organic waste. The outstanding symbiosis between the farmers and the pickers will have to be restored and improvised upon by adding facilities of safe drinking water and a first aid centre. It will be advisable to set up a crèche for the babies of mothers who work both as farmers and pickers.

In fact, a large number of women workers dominates the workforce population of Dhapa Square Mile and many of them belong to the tribal communities. It is important to mark the dominance of the tribal work force in Dhapa. The entire work of restoration-improvisation will rest upon a formal occupational right for the farmers, many of whom are third generation occupants and also belong to tribal communities, as mentioned. There is a back-up survey for this work, which was carried out under the initiative of the State Planning Board. The report published in 1986 includes the name of 2,490 occupants and farm plots spread over nine villages. The enumeration can be revised and entitlements can be bestowed on the basis of a similar survey.

Earth Day 2014 serves as an important reminder to the people of Kolkata that they possess a remarkable treasure trove of agricultural practice using city waste to grow vegetables for over 100 years. The ideas and innovations of Bhabanath Sen have been scientific, implementable and were far ahead of their time. He demonstrated what experts are suggesting today about the intersection of civic pride and environmentalism.

There is another significant factor that must be kept on top of these discussions: most of the recycling farmland has workers belonging to tribal communities living within a city domain. There are few, if any, such striking examples of urban tribals providing such a remarkable ecosystem service to the residents of a metropolitan city. This is not a heritage that the city can afford not to revive.

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Earth Day 2014 serves as an important reminder to the people of this city that they possess a remarkable treasure trove of agricultural practice using waste to grow vegetables for over 100 years, writes dhrubajyoti ghosh

