

# 'WE ARE SHOWING BY EXAMPLE!'

*Here is a fascinating story about urban farming worth taking note of in our times of sickness and stressed-out lifestyles. Amazing Neeno and Peter S Singh (74 and 65 years, respectively) show us a timeless way to connect with Mother Earth by growing our own requirement of food for life. It's an example worth emulating for a better, happier Goa -- and India! These being Covid-19 times we at the Goan Observer would have loved to visit with him but alas, it was not to be. We appealed and Peter Singh agreed to write up his own success story like no other, needless to say first person stories have a charm in a class of their own and oftentimes make for far more interesting reading....and this one you don't want to miss.*

BY NEENO AND PETER S SINGH

**M**y wife Neeno and I, Peter S Singh, are using aquaponics and permaculture and also composting our kitchen and garden waste. The composting material is then used for doing our farming through aquaponic systems and we are able to live sustainable lifestyles by harvesting our own fish in tanks, vegetables, fruit, spices and all this for use in our own kitchen and home table.

The systems we work also show how zero waste can be achieved – no garbage is collected from our house with the exception of recyclable paper, plastic, bottles, other non-biodegradable litter.

We need to live sustainably and prevent the mounds of garbage generated in our cities. For our own and as well as our family's health we need to eat organically cultivated vegetables and fruit farmed in our own homes instead of the pesticide and other chemicals-filled food

coming from industrialized, commercial agriculture. This is what is ruining our commonly shared environment, earth and it is draining all the water resources of the area where agriculture is carried out.

In 2013 we decided to move to Goa from Delhi, as our children had grown up and gone their separate ways, one to New York and the other to Lucknow. Delhi was getting more and more polluted and my wife Neeno suffered constant bronchial problems due to the Delhi pollution. Mercifully, our son bought a house in Goa and we moved here to escape the pollution of Delhi.

Since we had got used to eating organic food wherever we were and found it difficult to find it in Goa we at first brought our provisions from our house in Delhi -- as we didn't want to eat the pesticide-laden food available in the market.

In Goa we have a small 180-metre villa and some space left over where we could grow our food and we tried to do

so in pots and containers! Then about five years ago we discovered aquaponics to grow our own food and got thoroughly hooked as a sustainable way to do some urban farming in limited space – to our delight we succeeded in harvesting substantial amounts of food when we used vertical spacing too instead of just growing plants in beds and containers.

In our aquaponics we kept fish in tanks and dropped feed for them tanks, and the fish waste in the water we was allowed to flow to a point where solid waste is extracted by a swirl filter, and this solid waste goes into our garden plants or into our composting. The water from the swirl filter which is full of ammonia from the fish waste, flows into a bio filter, where bacteria grows to convert the ammonia into nitrates and nitrites, which are then pumped up to plants growing without soil courtesy five different systems:

\* Deep water rafts for green vegetables



Urban farmers extraordinary Neeno and Peter S Singh are passionate about living a sustainable lifestyle and have taken a shine to growing their own food through aquaponics! They grow and harvest vegetables, fruit, salad greens as also rear fish in tanks... putting to good use every bit of space at their Dona Paula villa. Neeno confesses, "Some of our neighbors see us working so hard to grow our own food and think we're mad or killing time!"

\* Nutrient film technology whereby the plants are grown in pipes

\* Vertical towers using aeroponic techniques

\* Media beds for vegetables with large root systems

\* Dutch Bucket systems for growing larger plants and fruits

The plants in these systems take nutrients from the water coming from the fish tanks, the water gets cleaned and aerated and returns to the fish tank. So we have created a beautiful, totally sustainable infrastructure to keep ourselves stocked with a wide variety of organically farmed vegetables, fruit as well as the fish growing fat in the tanks set up for them.

## GREENHOUSES TOO

WE ALSO have a 200 sq ft greenhouse which can provide food for a family of four – vegetables, fish, with minimal use of water. In our villa in Goa we produce 120 kg of fish for the home annually and we have sea bass (chonak) and carp (rohu, katla) in fish tanks on the ground floor. We grow 3,000 vegetable plants and some fruit in the greenhouses on the ground floor and the

second floor, plus we have a terrace on the rooftop where fruit trees grow.

All of this mentioned here is fed with nutrients from the fish tanks and vermin compost we make at home from our kitchen and garden waste. So our food and fish waste goes back into the growing of food for the family. We don't need to go to the market for lettuce, basil, parsley, celery, Swiss chard, spinach, mint, bok choy, kale, Chinese cabbage, cauliflower, beetroot, cabbage, radish, bhindi (ladies finger), beans, tomatoes, cucumbers, bottle gourd, sponge gourd, green onions, ginger, haldi – quite simply because we grow all this!

And we also grow fruit like strawberries, lemons, papaya, pomegranate, on our rooftop and other fruit like mango, banana, etc, in our garden watered by nutrient-rich water from the fish tanks. Truly, aquaponics is an excellent hobby for senior citizens like us as it does not require the kind of hard labour required in doing normal agriculture! Here in aquaponics you don't need to prepare soil, then do the planting, watering and so on. An entire system can be created so that you don't





**A BOUNTY TO TAKE DELIGHT IN...ORGANICALLY CULTIVATED HOME PRODUCE:** A harvest from aquaponics greenhouse on rooftop of Peter & Neeno's house. Cumcumber, chillies, lemons, baby bell peppers, crisp spinach, a few leeks which they tried growing for the first time and first beans of the season. No chemicals, no fertilizer, only homw grown vermicompost and water from the fish tanks. Happiness! Aquaponics farming is ideal for seniors getting bored or feeling sick at home!

WHAT IS AQUAPONICS?

ACCORDING to Wikipedia, "Aquaponics refers to any system that combines conventional aquaculture (raising equatic animals such as fish, snails, crayfish or prawns in tanks) with hydroponics (cultivating plants in water) in a symbiotic environment. In normal aquaculture, excretions from the animals being raised can accumulate in the water, increasing toxicity." Undoubtedly those who do aquaponics have to be conscious about this and take precautionary or supplementary measures to recycle excreta waste matter for routine farming purposes. Both hydroponics and aquaponics have clear benefits over soil-based gardening: lessened, adverse environment impacts, reduced consumption of resources, faster plant growth and higher yields. Many believe that aquaponics is a better option over hydroponics when choosing a soilless growing system.

need to bend and twist ourselves out of shape to shower lover and affection on plants. Aquaponics farming is very suitable for senior citizens' if they have a yen to do some farming!

Once you set up an aquaponics farming system it is easy to maintain and look after with a positive, proactive mind set interacting with the real food for life. You may set up various aquaponic systems ranging from counter top models, to models inside rooms, or balconies, terraces, roof tops, gardens and of course the usual farm spaces.

Yes, we provide training and design aquaponic systems for those seeking ways to grow their own their own food – and here we are, setting and showing the example in our home, how really easy it is once you have made up your mind to grow your own food.

OUR BACKGROUND

OTHERWISE what is our background? I grew up on a farm in the Punjab and in those days of old farming was



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▶ Pg 15

really all organic, we had no artificial fertilizers or pesticides. I had attended a boarding school in the hills and then it was on to Delhi University where I was eventually worked towards a PhD in mathematics. Somewhere along the way I realized that there is much more to life than researching mathematics and teaching mathematics!

When I got married in 1973 my wife and I moved back to our ancestral farm in Punjab and experimented with diversification in agriculture instead of mono cropping. We set up an orchard of peaches, plums, pears, and Kinnow to enjoy different fruits all the year round. At the boundaries we planted imber trees as a windbreak, which provided a source of income through sale of timber every few years, and interspersed the windbreak with tree flora trees and bushes to provide flowers for honeybees.

We also set up bee keeping with *Apis mellifera* on the farm by intercropping empty spaces in the orchard with seed crops like clover, pulses, oilseeds like mustard, sunflower, etc. We did this for the National Seed Corporation. This also in turn provided a source of nectar for the bees and we were able to

extract single source honey from the flowers!

We also extracted and marketed single source honey from clover, orange blossom, sunflowers, eucalyptus and mountain blossoms from the mountains of the Himalaya. Our unit was the first one to export single source honey to quality conscious markets in Germany and the USA and exported 2,000 tonnes of honey every year. We did research on beekeeping, in queen breeding and management and our organisation was the first such unit to be registered with the Department of Science & Technology, Government of India, for beekeeping, bee breeding, bee management.

We also trained and set up farmers in beekeeping with the Italian honeybee, and bred bee colonies that produced over 80 kg of honey annually. We got State award Praman Patra from the Punjab government on Independence Day in 1998 for beekeeping development in Punjab. You see we had set up an integrated unit that produced bee equipment, bred bees, provided training and bee colonies to farmers, packed honey for the domes-

tic market and also produced value added products using honey and Ayurveda herbs marketed in Delhi. We set up and expanded beekeeping all over the Punjab, giving employment to small farmers and increasing honey production from 300 tons to 3,000 tons in five years.

We were founder members of the National Beekeeping Developing Board and were resource persons for the Ministry of Agriculture and helped formulate policies for the development of beekeeping in India with the Italian honeybee *Apis mellifera*. We wrote two books on beekeeping and the honey industry in India which were published by APEDA and are part of their resource library.

We set up a dairy farm to provide compost for the orchard and also biogas for cooking in the farm. We were thus able to create a bio diverse system of agriculture wherein we were also able to do green manuring during the fallow months to regenerate the soil between crops. We had to move to Delhi in 1979 for our children's schooling but managed to keep our beekeeping going in Punjab and marketing honey in Delhi, eventually for export.

### DELHI TO GOA

IN DELHI we had a house with a large garden and we grew our own vegetables, some fruit and whatever we could not grow we sourced from an organic farm outside Delhi. We loved to eat organic and believe in living as sustainable a lifestyle as we can. It was in 2015 that we heard about aquaponics and started learning about it. We first set up a trial unit in our house in Delhi. Then when we shifted residence to Goa where we have been evolving ever since.

Acquiring more knowledge and experience doing urban aquaponics farming, experimenting with different and new systems to find which is the most efficient. We set up an aquaponics unit for our daughter in Lucknow which is primarily an experiment which can be escalated to a commercial aquaponics unit in urban farming. We are happy to be members of the Botanical Society of Goa and participate in its Home Garden Competition every year, winning first prize in 2016, 2017 and 2019.

## GO ROUND-UP

### 'GANDHIAN VALUES OF TRUSTEESHIP MOST RELEVANT TODAY'

— PROF PETER D'SOUZA

#### GO TEAM

GANDHIAN values of trusteeship rather than Western notions of philanthropy are more relevant in contemporary times which are marked by growing inequalities and marginalization due to the Covid crisis, said Prof Peter D'Souza, DD Kosambi Visiting Professor at Goa University, at a master class webinar organized by the Goa Business School on July 30 2020.

Highlighting the nature and types of philanthropic ideas from Western corporate houses ranging from Carnegie and Rockefeller to initiatives such as the Gates Foundation, Prof D'Souza pointed out that these often thrived on profit generation irrespective of the manner in which such enterprises affected social and ecological harmony. As a result, he said, philanthropy often divested itself from its moral obligations.

On the other hand the Gandhian ethos of trusteeship comes from common ownership and responsibility rooted in traditional Indian notions of dharma or duty and respon-



sibility. It is not surprising therefore, that the world has seen an increase in the number of billionaires as poverty and deprivation has become more endemic, he pointed out. Under the circumstance there is a need to revisit Gandhian values of trusteeship and make them a part of our modern corporate ethos.

The lecture was attended by students and faculty of various institutions across the country and was a precursor to a course on trusteeship and philanthropy soon to be offered by Prof D'Souza; Prof Koshy Tharakan (head, Department of Philosophy) moderated the event and Prof Nilesh Borde from Goa Business School proposed vote of thanks.

## DISFIGURING OR REFIGURING?

#### GO TEAM

SUNAPARANTA Goa Centre for the Arts has organized a webinar discussion on "Disfiguring or Refiguring? The Past and Future of Statues" on Zoom on Aug 5, 2020, at 5 pm IST. (Registration required: [bit.ly/3hM1E4F](https://bit.ly/3hM1E4F)). This is Episode XI of Sunaparanta's Listen In series and this time the discussion will feature Thadeus Dowad (art historian and assistant professor at Northwestern University).

The session is in the context of activists across the West tearing down or defacing public monuments in the name of racial justice. Works of art once memorializing historical figures known for their active role in preserv-

ing slavery and other forms of racial violence have transformed overnight into sites of protest and destruction. Are such cultural, historical artefacts permanent reminders of exploitation and marginalization of non-White people in Western societies?

Featuring in the webinar is Thadeus Dowad, PhD candidate in the History of Art Department at University of California, Berkeley and currently a Paul Mellon Fellow at the Center for Advanced Study in the Visual Arts (CASVA) in Washington, DC; he is also a visiting fellow at the Institut National d'Histoire de l'art (INHA) in Paris. He is a scholar of both European and Ottoman art of the 18th and 19th centuries. Don't forget to register!

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