# Herald & Tribune - Op-Ed

By Frances Lamberts

The “Keeling curve” is named for the chemist who conducted daily air measurements for the U.S. Weather Service on a mountain in Hawaii. It shows the steadily and rapidly increasing carbon dioxide in the earth’s atmosphere. With concentration at 315 parts per million by volume in 1958 when the measurements began, it rose to 403.51 ppm on May 30 this year.

For 10,000 years while human civilizations grew and flourished, atmospheric carbon had been between 275 and 285 ppm. Keeling analyzed its rise since the 19th century as roughly matching the increase in fossil fuels burnt each year.

An interesting feature of the graph is its two data points each year. A high point represents the averaged carbon concentration during the winter months, the low point its concentration during the summer.

The low point or trough reflects the work of trees, primarily in the Northern Hemisphere, whose greening and photosynthesis seasonally withdraw carbon dioxide from the air, for food to store in their tissue. Trees and the oceans are the most important greenhouse-gas sequestration agents for the planet.

No surprise, then, that forest protection is among priority efforts in the global fight against climate change. The United Nations is leading two initiatives. One provides support to developing countries for maintaining forests in good condition, thus Reducing [their carbon] Emissions from Deforestation and Forest Degradation (REDD).

Another, Plant for the Planet, inspired by the work of Kenyan Nobel Peace Prize recipient Wangari Maathai, encourages communities, governments, businesses and people everywhere collectively to plant at least a billion indigenous (native) trees every year.

There are encouraging new, related efforts in urban centers. A survey last year by the American Council for an Energy Efficient Economy found major U.S. cities re-lining their streets with shade trees, to reduce the heat island effect, adapt to changing climate and its extreme-weather challenges, and improve the health and resiliency of city residents.

As Mayor of New York, Michael Bloomberg promised that city’s residents 20,000 extra trees a year.

A booklet by a Federal Conservation Agency in Germany thus describes a tree’s air-cleansing and other benefits, on a summer day:

Imagine a 100-year-old beech. With a likely height of 20 meters (65 feet) and a 12-meter crown, it has more than 600,000 leaves. These increase tenfold its green area, to 1,200 m². The leaves’ stomatal air cells create a total gas-exchange surface of 15,000 m², or the size of two soccer fields!

Filtering 36,000 cubic meters of air on a sunny day, the tree uses up 18 kilograms of carbon dioxide while also straining out dust particles, fungal spores, bacteria and many other, potentially harmful things.

Its leaves’ water evaporation cools the air and the oxygen they produce that day suffices for 10 people’s breathing need. It gives shade and shelter from winds, reduces noise pollution, its roots hold the soil in place, and for hosts of small creatures it is shelter, food, and home.

For healthy communities and climate stabilization, let’s befriend and plant more trees.