Food Plants International

Helping the hungry feed themselves well through being good stewards of God's amazing resources

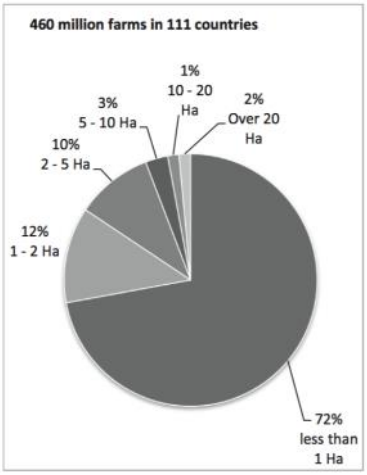
No. 62, June 2018

Plants for Arid Lands

To feed the world we need to rethink our methods

The world population is increasing rapidly and is now put at 7.6 billion. Our planet hasn't got any larger. So there is increasing pressure to produce food. One recent article on our 'Western' production system was bemoaning the fact that yield increases are increasingly hard to achieve. This is not surprising as we have narrowed the production system, pushed it to its limits, and then selected to produce bulk, creating a global crisis of obesity.

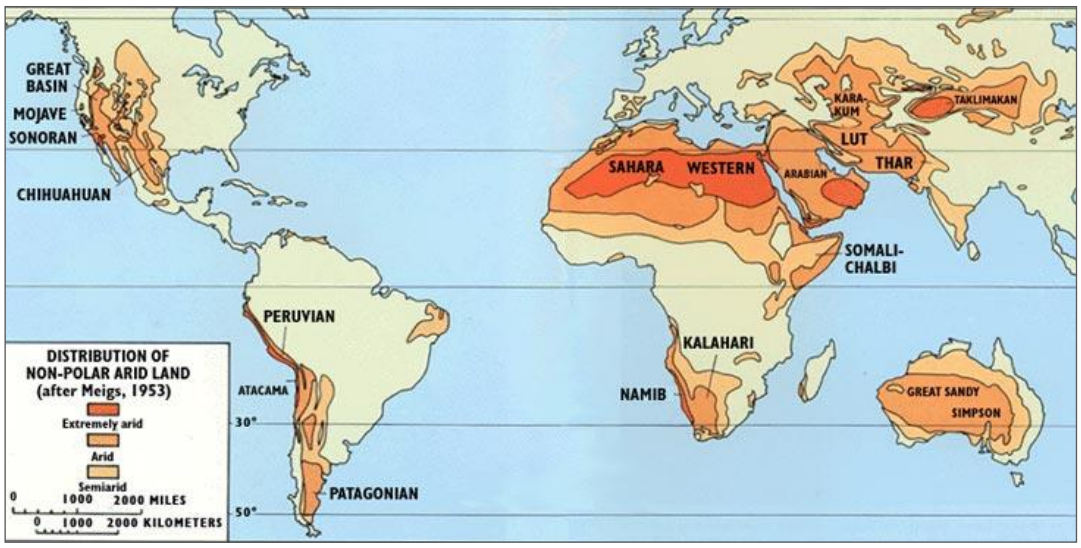
Thankfully, most major international reports are advocating the use of appropriate local plants grown using sustainable agro-ecological methods and highlighting their far superior nutritional value. There remains a tendency to still see the only hope for feeding the world being in highly technology and intensive production on large scale 'Western' or temperate zones feeding the world through export crops. But there is a more sound method.



Map from Lauder et al, World Development Vol. 87 2016

When we look at the world statistics, an average farm (72%) in the world today is less than one hectare and 92% of the world's farms are smallholder properties under 5 hectares.

Although most of the more difficult situations are in arid zones, there are many underutilized and neglected species that suit this region. Our Food Plants International database has just under 2,000 edible species that suit arid zones. 1,200 of these are in the tropics. If the dry season is long, it is possible to use simple solar dryers to store leafy greens and other plants for use during these times.



Map courtesy of U.S. Geography Survey

In some of the arid zones, firewood is at a premium. This can impinge on survival of trees and preservation of the soil. Again, simple adaptations of the cookers can significantly reduce firewood usage. A common fireplace cooking arrangement is made up of 3 large stones placed in a triangle. A cheap and easy to make (but more enclosed) cooker can reduce heat loss and therefore wood usage by up to 60%. Of the almost 2,000 edible species for arid zones, 600 species are trees and their loss for firewood can immediately impact food availability. And even with these tree species, 150 of the trees with edible parts that are suited to arid zones are legumes and their role in restoring nitrogen into the soil and producing higher protein edible portions is critical.

Carrying firewood

A cooking fire

Cooking on three stones

Elizabeth's kitchen

There still remains a mindset that believes irrigation is the answer to food production in arid areas. Water is such a scarce commodity in many regions that women can spend hours each day carrying sufficient water to meet basic domestic needs. A more practical approach is the rigorous use of plant mulch to protect the soil, reduce evaporation and restore nutrients. I have seen this practice increase yields of basic staple foods by 4 or 5 times. As well, simple grey water filtration devices can be constructed to purify washing water to grow leafy greens.

With thanks for your interest,

Bruce

Mulched field

Children in Nigeria pumping water

Raised garden bed filtering water

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