

Dealing with a dryland dilemma – where there are too many trees...

Impenetrable thickets of woody weeds cover many millions of hectares in dryland Africa and beyond. Paths, roads and rangeland become blocked, wells dry up, land is abandoned and even whole villages feel forced to move. And these vast affected areas certainly meet the IUCN definition of land degradation, as “a reduction or loss of the biological or economic productivity and complexity of land”. But invaded landscapes remain overlooked when targeting areas for restoration.

Dryland restoration efforts must acknowledge and actively promote the inclusive management and utilization of invasive trees and shrubs, and areas managed should be counted when monitoring achievements towards national restoration commitments.



Unmanaged prosopis cover at least two million hectares across Ethiopia, or >2% of the country. Two pastoralists look over part of the million hectares in Afar Regional State alone.



But land can be opened up through thinning, that yields poles, fuelwood and charcoal, and converted to agroforestry systems as here in As Ela, Djibouti.

‘Control by utilization’ is increasingly seen as the answer to invasive woody weeds, through new enterprises that can restore invaded land by applying traditional and improved management and utilization. And this has the potential to make significant steps and on a huge scale towards meeting the varied challenges of food, fuel and fodder security, rural unemployment, conflict, migration, land degradation, groundwater availability, climate change adaptation and mitigation.

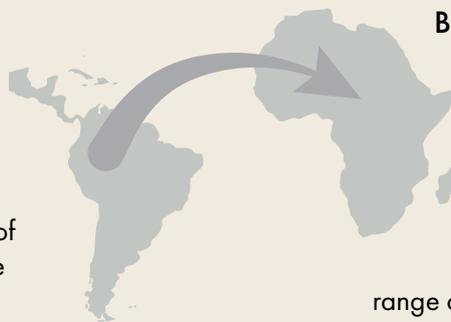
“What would you say if you were told that a million tonnes of wheat is produced every year in the Greater Horn of Africa, but is left to rot on the ground? And it is produced without any need for ploughing or sowing, no irrigation, no pesticides, and produces in drought years as well. Well, you would say “stop dreaming”. However, it is becoming increasingly clear that even the most conservative estimates for the production of ‘wild’ prosopis pods in the region, and that yield a flour that is nutritionally equivalent to wheat or maize flour, are at least in this order of magnitude... also producing at least ten million tonnes of biomass each year.”

Introduction to Pasiecznik et al., 2015. The Great Green Forest is here and expanding all on its own: A call for action. International Conference on Resilience, Research and Innovation, Djibouti, 26-28 October 2015.

What are these invasive woody weeds?

Prosopis juliflora is by far the dominant alien invasive tree in tropical drylands worldwide, covering some 10 million hectares in the Greater Horn and double that area across all of Africa [ETFRN 3.4]. Of the many native ‘encroacher bushes’, various *Acacia* species are most common, affecting millions of hectares in southern Africa and spreading in Kenya, Ethiopia and elsewhere [ETFRN (viii)]. But all figures are estimates based on observations and extrapolations, as there are few national level maps and no resource inventories.

Where native in the Americas, milled prosopis pods were once a staple food and are still eaten today, and are widely used in livestock rations. Prosopis wood is highly valued, including its use as a quality sawn timber for furniture and flooring, and trees and forests are sources of honey, tannin, medicines and more. Mature prosopis forests in the Americas tend to be well managed, or sometimes overexploited to the point of concern regarding possible local extinction.



But where introduced in Africa and elsewhere, prosopis remains almost entirely unmanaged, underutilized, and so it has spread unchecked. Pastoralists allow their animals to eat whole pods, unmilled and unmixed, and watch them get sick as they spread the seed far and wide. And charcoal making is limited by a range of unfavourable policy and organizational issues. Seeds were brought in from overseas, but the indigenous knowledge about management and use of tree products did not follow – until recently.

Turning perceived problems into valuable resources

Charcoal is the main money-earner from invasive trees. But a family can collect a tonne of prosopis pods in a good week and mill in another week – an easy source of nutritious flour where trees are widespread and there are few alternatives. Each tonne also contains two million seeds. Milling destroys the seeds that otherwise pass through animal guts intact, adds digestible protein to the flour, and reduces further spread as a weed.

Where native trees encroach on rangelands in East Africa and the Horn, the current practice is to manually clear using work teams, and reseeded can then restore pasture to its original condition. In southern Africa, ranchers clear invaded areas mechanically while producing ‘bush feed’ by milling whole branches of acacias and other native species.

Next steps

There is an urgent need to come together into a ‘great green wall of purpose’. Support must be coordinated to identify appropriate options with communities, improve local governance, train producer groups in appropriate technologies to become viable enterprises, and profitably convert invaded land into drought-proof agroforestry systems that meet local needs.



A women’s cooperative using a portable hammer mill to produce animal feed for sale, Burao, Somaliland. Women are also the main pod collectors.



Milling and mixing invasive *Combretum* and *Grewia* species before adding feed additives, Outjo, Namibia. Specially designed mills are made in South Africa.

Recommendations

1. Governments, the Great Green Wall, AFR100 and other initiatives must incorporate restoration of invaded drylands into their programming, and encourage the sharing of experiences.
2. Efforts should be made to comprehensively map the extent, spread and impacts of woody weeds at national and regional levels, to evaluate the scale of the opportunities and actions required.
3. Governments, donors and organizations need to support improved invaded land management and the processing and marketing of innovative wood, fodder, food and other non-wood products.
4. Governments must formalize, legitimize and regulate sustainable charcoal value chains, and those for food and livestock feed from prosopis pods, and fodder from acacia fruit, foliage and branches.

All comments and requests for further information much appreciated.
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