



Control and utilization of *Prosopis juliflora*: Ideas into action

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Turning the 'garaanwa' tree in Somaliland into a new resource for all



Coverage by Hargeisa Cable TV (HCTV) reached audiences across the Somali-speaking world

More eyes were opened to the many uses of the *garaanwa* or 'devil tree' in Somaliland at a workshop with development agencies and government departments. Seen by most as a terrible weed deserving of complete eradication, this workshop took another step in showing its potential as a new source of fuel, fodder and even human food.

Introduced by development organizations in the 1970s and 1980s to control desertification, people knew not from where it came, and called it *garaanwa*, or the unknown tree. Not just drought tolerant, it proved so well adapted that it spread widely and rapidly. It is truly hated by people in rural areas, where it invades riverbanks, pastures and farm land, forming impenetrable thickets, killing off native vegetation. It blocks paths and roads, the stout thorns piercing hooves and feet alike, earning the name *geed jinni*, or devil tree. The call from the communities is: "Please help us get rid of this!"

But the workshop offered a better solution. In her opening address, the Minister of the Environment and Rural Development, Hon. Shukri Haji Ismail told the audience how *prosopis*, as it is known internationally, has many

uses. She supports its utilization as a way to also control its spread. Ms Sadia Ahmed of PENHA-Somaliland (the Pastoral and Environmental Network in the Horn of Africa) and co-organizers of the workshop, explained PENHA's work in promoting prosopis use over the past ten years. The commissioner of the National Environment Research and Disaster Preparedness Authority (NERAD), Mr Mohamed Muse Awale suggested integration into drought-coping mechanisms. Mr Abdikarim Adan Omer, Project Manager of the Somaliland Development Fund (SDF), drawing on insights from SDF advisor Dr Abdulla Gafar's experience in Sudan, outlined a way forward. Mapping the spread is a first step. Mr Ugo Leonardi of FAO shared results of their latest survey, and a preliminary estimate of some 550,000 hectares of prosopis in Somaliland.

PENHA served biscuits and bread made with prosopis flour. The minister and the 40-strong audience all appreciated the subtle flavour – also showing that it is not poisonous as some people think! On display were prosopis honey, pod syrup and flour to taste, flooring tiles, carvings and other crafts made from prosopis wood, animal feed, charcoal and a range of books, brochures and information leaflets.



Mr Pasiecznik and Hon. Shukri Haji Ismail, Minister of Environment and Rural Development, with prosopis flour and biscuits

Mr Nick Pasiecznik, advisor to PENHA, then took the stage. He shared his 28 years of experience working with prosopis around the world, describing the various uses and whole industries built on prosopis products, through a series of colourful pictures, from the USA, Peru, Argentina, Brazil, Kenya, Djibouti and India. A clear message – to control its spread, and at the same time make nutritious feed, the pods *must* be collected and milled. The protein is in the seed, and with every tonne of pods that are milled, two million seeds, or two million invasive trees of the future, are destroyed. Promoting conversion to charcoal will encourage clearance of land. Creating new charcoal and pod flour animal feed industries, can together not only stop the spread of prosopis, but will also provide much needed income and employment in rural areas.

'Ideas into action' was the theme of the discussions that followed. More awareness-raising at all levels was a common intervention, with one firm action being the setting up of demonstration farms. Attracting commercial interests was another. Robert Bowen of FAO suggested that prosopis control and utilization should be included in new development programmes. And a task force was proposed, so all interested parties could collectively help to make concrete actions happen, with PENHA collecting the names of eight organizations and agreeing to take this forward.

The workshop was the main event in the 'Prosopis roadshow', that started in Berbera on 27 May, and included lectures at Gollis University (29 May) and Burao University (31 May), community meetings in Beer (31 May), Beerato (1 June) and Dinqaal (3 June), and numerous informal seminars and visits along the way.

Main points from the workshop discussion

Strategy, policy and legislation

The Minister called on participants to be ‘ambassadors’ for prosopis utilization. She urged participants to form a committee, a task force in order to put forward concrete actions – “what we can do after today” – and to develop a strategy, a set of guidelines and a legal framework. She had in mind a policy and legislative agenda for prosopis control and utilization that could be backed by the ministry with popular support stimulated by awareness efforts. The Minister also noted that alternative energy would be the theme of events around World Environment Day (5 June 2016) and called on those present to participate and support the ministry. (A 30% discount on gas cylinders had been offered for that day only by a commercial supplier, hoping to replace environmentally destructive Acacia charcoal production. PENHA subsequently suggested legislation to make prosopis charcoal production tax-free.)

Cross-border issues and drought management

The NERAD commissioner emphasized the fact that prosopis is a cross-border issue, with seasonal livestock movements to and from neighbouring countries helping to spread the plant. Beyond this, regional cooperation makes sense in terms of lesson learning, harmonized legislation and commercial exploitation. Nick Pasiecznik noted the potential value of prosopis feed as a means of reducing drought-induced livestock losses and suggested that humanitarian agencies might be important customers for new commercial enterprises.

Mapping

In his presentation, Ugo Leonardi described their methodology based on identifying the unique spectral signature of prosopis, helped by prosopis remaining green in the dry season when most other tree species are without leaves. But, imaging techniques must be backed up photos of prosopis on the ground, with GPS coordinates. Development agencies with projects across the country can, therefore, contribute to the mapping effort with ‘ground-truthing’.

The need for inter-agency and inter-ministerial collaboration

The Transport Ministry was identified as an important partner, given the spread of prosopis pods in run-off water carried along roads, and the opportunity to uproot pioneer seedlings during road construction. Ashebir Bekele of FAO underlined the importance of forming a multi-agency task force in order to craft effective strategies that address the whole set of related issues, including land tenure. He described FAO’s current work on participatory approaches to land tenure policy, in collaboration with PENHA. Participatory resource mapping in some 40 locations revealed that prosopis is the number one invasive plant, and a significant issue in many communities. Ashebir noted the lack of local knowledge on control and processing, and argued that a current FAO project with district and national level stakeholder forums, would provide an opportunity to raise awareness and promote understanding of the issues and potential.

Sudanese experience and pastoral common property systems

Dr. Abdulla Gafar described the success, with very high levels of expenditure, of biological and chemical control in farming areas of Sudan, where high-value crops provided strong incentives for farmers to invest in clearing, and justified heavy outlays. But, he noted that the context of Somaliland is very different. Here, extensive livestock keeping and pastoral common property systems, which sometimes become open access systems when customary law breaks down, do not provide the same incentives. Livestock mobility facilitates the spread of prosopis, and less individualized land ownership reduces incentives to invest in control. These factors must be taken into account in developing workable strategies. Dr. Gafar mentioned the introduction, around the Haifa agricultural schemes, of heavy fines for farmers who fail to uproot seedlings. In Ethiopia’s Afar region, new legislation introduces similar penalties. In Somaliland, where government is much less powerful and local leaders often hold sway, the balance between carrot and stick might have to be different, and much more effort will have to go into winning hearts and minds, and persuading people of the worth of new controls and legislation.

Charcoal production

After noting opportunities for complementary activities around FAO's on-going spate irrigation projects, Robert Bowen of FAO asked about the potential to produce charcoal briquettes commercially. Mr. Pasiecznik explained that the small branches of prosopis bushes have little heartwood and are not ideal for this, even when efficient kilns are used. It is more cost effective to simply burn the small branches. There is local preference for Acacia charcoal, but use of prosopis can be encouraged if trees are managed and pruned, and, perhaps, by establishing and enforcing laws (and taxes) that favour prosopis use and discourage acacia use. Ugo Leonardi brought up the production of wood pellets or fuel blocks from chipped wood as alternatives for charcoal, giving examples of European commercial production. But, Nick Pasiecznik, after showing a sample of an acacia fuel block from Namibia, explained that production is unlikely to be cost effective – requiring more inputs for a given unit of output than alternative uses of prosopis. Why invest in a machine to chip and compress when you can simply burn the wood or make charcoal in pits?

Biological control

How important is the lack of a natural enemy? Several participants asked about the potential of biological control, using beetles that consume prosopis seeds. Ali Ismael of FAO mentioned the existence in Djibouti and elsewhere of pests that eat prosopis seeds. But, Nick Pasiecznik explained that these pests consume only a fraction of the seed. “Man is the only natural enemy of prosopis!”

Attaining equilibrium

One participant asked about the balance between utilization and control around the world, comparing the spread of prosopis and the degree of utilization. Mr. Pasiecznik explained that India is approaching an even balance between control and use, a stable situation where prosopis is extensive and utilized effectively, such as in electricity generation among other things, and which controls undesirable expansion in undesirable ways. In Argentina, prosopis is over-exploited and its availability is dwindling, and in northern Peru, people now fear the extinction of prosopis in some areas, such as has been the intensity of its utilization.

Conclusion

PENHA recorded all issues and points raised during the workshop and discussions, and agreed to take the next steps, by posting this summary online, and by organizing the first meeting of the new prosopis task force in the coming months as the first concrete outcome from this meeting.
