

CASE STUDY PIA 1: Natural Resources and Environment Management



3. Management of invasive species: Prosopis juliflora as source of feed and incomes in Afar

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| <p>INTRODUCTION</p> | <p>Since its introduction in Ethiopia in the late nineteen seventies, Prosopis has been continuously invading and encroaching rangeland, reducing mobility and availability of pastures, in poor and high potential pasturelands, increasing cost of crop production in agro-pastoral areas because of repeated clearance, etc. In the native countries, mechanical and chemical eradication methods have been tried, but they are all expensive and mostly ineffective. Now trials are made to combine management and control through economical use of Prosopis wood and non-wood products.</p>  |
| <p>LOCATION /GEOGRAPHIC COVERAGE</p> | <p>Afar Region is the most affected region of Ethiopia by Prosopis. It has been estimated that Prosopis has been expanding at a rate of 50 000 ha/year during the last 10 years in Afar.</p> |
| <p>STAKEHOLDERS AND PARTNERS</p> | <ul style="list-style-type: none"> - <u>Farm-Africa</u>: This template is based on Farm-Africa actions in Prosopis Management in Afar. - <u>USAID</u>: supporting Pastoral Livelihoods Initiative (PLI) under CARE Ethiopia Consortium - <u>Afar National Regional State Pastoral, Agriculture, and Rural Development Bureau</u>: involved in the production of a guideline on Prosopis management for the Afar Region. - <u>FAO</u>: supporting the development of the economic use of Prosopis to decrease its expansion and manage it as an appropriate and commercially viable management option. |
| <p>METHODOLOGICAL APPROACH</p> | <p><u>Pre-studies and establishment of the linkages:</u></p> <ul style="list-style-type: none"> - Visits of cooperative leaders and government partners staff to the enterprises and vice-versa - Contact with the processors and negotiations <p><u>From Prosopis to feed:</u></p> <ul style="list-style-type: none"> - Purchase of pods by the cooperatives at the rate of ETB 0.4 (0.5 to 1)/kg, according to the availability of pods. - Use of locally produced diesel to operate small hammer mills (10kg/hr) or |

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| | <p>grain mills with higher efficiency (400kg/hr) to meet the substantial local demand from livestock keepers.</p> <ul style="list-style-type: none"> - Sale of crushed pods at the rate of ETB 1.75/kg, in some case it could reach ETB 4/kg. <p><u>Dissemination of the practice:</u></p> <p>A demonstration site was established in the Sedhafage cooperative during 3 months to make the communities aware of the advantage of providing crushed pod in the proper level of supplementation to goats.</p> |
| VALIDATION | <p><u>Feasibility validation:</u></p> <ul style="list-style-type: none"> - The availability of pods (GL-CRSP PARIMA) <ul style="list-style-type: none"> o The yield could be 40-60 kg of dry pod per year per tree, over 31 tons of pods were collected in one season by the Sedhafage co-operative - The demand from feed processing plants (GL-CRSP PARIMA) <ul style="list-style-type: none"> o The demand exists by feed processing industries o and small-scale agro-industries located close to Prosopis - Financial feasibility study on cost of collection and transportation (GL-CRSP PARIMA) and crushing pods <ul style="list-style-type: none"> o The financial analysis of this study shows that the proposed idea of production in the Afar Region is a feasible venture. - Research on feeding the crushed pods to livestock: <ul style="list-style-type: none"> o Demonstration sites studies on 35 goats o Nutritive analysis from ILRI and EIAR <p><u>Validation through the results of the Sedhafage cooperative:</u></p> <ul style="list-style-type: none"> - The supplier obtained 15,500ETB - 10 000 kg of crush pods were sold to government institutions and locals - 17,000ETB of benefits for the cooperative (except electricity) - Farm Africa established two more cooperatives in Gewane/ meteka kebele/ and Amibara /Serkamo kebele. |
| IMPACT | <ul style="list-style-type: none"> - Control of further expansion - Positive response of the animal growth rate <ul style="list-style-type: none"> o Improvement of food security o Possibility of improvement of the value chain - Generation of new incomes for communities through the sale of pods - Generation of employment opportunities in the cooperatives |
| INNOVATION AND SUCCESS FACTORS | <p>Management of an abundant and cheap resource to respond to a real demand and through the empowerment of cooperatives.</p> |
| CONSTRAINTS | <p>Locally the volume handled by the small mills is too low to cover the demand (10kg/hours). There is also a lack of land use plans and assessment of the impact of the project on the growth of Prosopis.</p> |
| LESSONS LEARNED | <p>There is a potential to control Prosopis spread to farmlands and key pasturelands by promoting its use (charcoal, crushed pods, etc) in planned and regulated ways that provide economic incentives to local people.</p> |
| SUSTAINABILITY | <ul style="list-style-type: none"> - Economical sustainability: Possible links with MNB factories and with charcoal production - Environmental sustainability: The use improves the surface of accessible land. It is however important to plan the use to manage the availability of the |

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| | resource. |
| UP-SCALING | <p>The recommendations are:</p> <ul style="list-style-type: none"> - Appropriate forums and networking should be established to regularly share experience within the country and the Region. - Dissemination of lessons learned to involve the government and nongovernmental institutions. - Organizing training could be the best way to make communities chose how best to use it. Strong extension work encouraging people to become involved in Prosopis-related business. 15 - Introduction of management practices for trees in pasture and crop lands. Leaving certain trees in enclosed pasture lands and crop lands will have multiple benefits. Reduce clearance cost, soil improvement, continuous pod supply, etc <p>Some interesting research and trials are currently being held in Kenya, and possible links with payment for environmental services are being studied.</p> |
| CONTACT DETAILS | <p><u>Farm Africa</u>: Michelle Winthrop: michelle_winthrop@yahoo.co.uk <u>FAO Ethiopia</u>: Dr Lemma Gizachew: lemma.gizachew@gao.org</p> |
| URL OF THE PRACTICE | http://www.farmafrica.org/ethiopia/prosopis-management |
| RELATED WEB SITE(S) | http://www.farmafrica.org |
| RELATED RESOURCES THAT HAVE BEEN DEVELOPED | <p><u>T. M. Abedelnoor et al. 2009</u>: The use of alternative animal feeds to enhance food security and environmental protection in the Sudan (The case for Prosopis Juliflora) – PENHA/ARRC/MOST</p> <p><u>D. Admasu 2008</u>: Invasive Plants and Food Security: the case of Prosopis juliflora in the Afar region of Ethiopia prepared - FARM-Africa for IUCN</p> <p><u>F. Flintan 2008</u>: PROSOPIS CONTROL AND/OR UTILISATION ELMT/ELSE NRM</p> <p><u>G.G. Tegegn 2008</u>: Experiences on Prosopis Management Case of Afar Region- FARMAfrica</p> <p><u>2005</u>: Controlling the spread of Prosopis in Ethiopia by its utilization - DFID/HDRA/FRP</p> |
| <p>Case Studies Adapted from : Flora Baudron, Good Practices Building Resilience Experience from Ethiopia and IGAD countries, FAO-SFE, 2013</p> | |

