

Regional Conference on Managing *Prosopis juliflora* For better (agro-)pastoral livelihoods in the horn of Africa 01 -02 May, 2014 – Addis Ababa, Ethiopia Planting mesquite tree planting in Yemen (alghfaf,aalwel, aalsysaban) *Prosopis juliflora*

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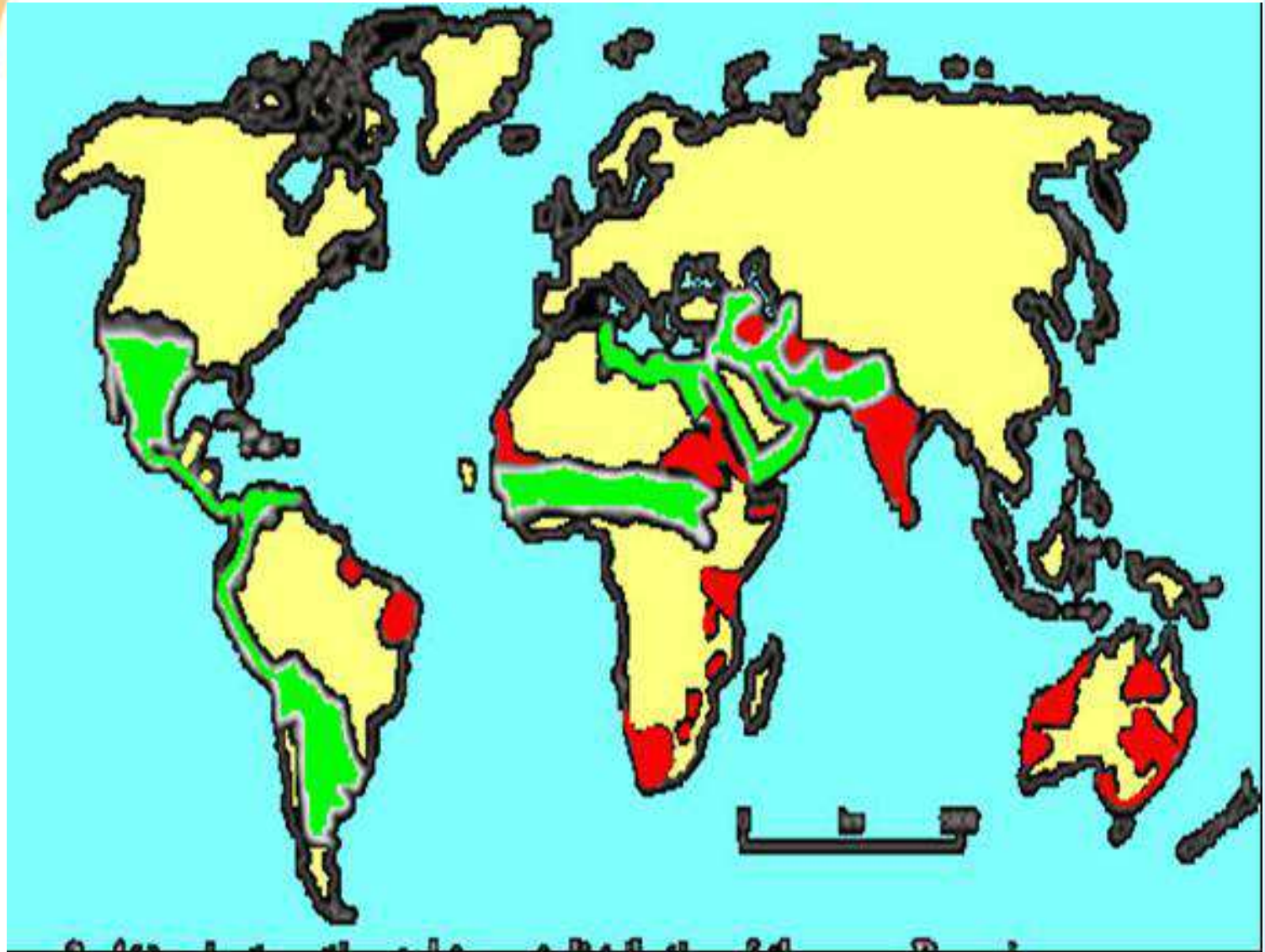


Water and
Environment Centre



**Musket tree
distribution
map in the
world:**

- ✓ **Green color** area of natural distribution areas for some musket tree kinds
- ✓ **Red color** for attack and entrance areas



1. General

- Mesquite tree acquired with great attention from the country, organizations and the projects that working in the forests domain and the desertification struggle,
- Mesquite tree has a big success in the fixation of the sandy dunes and in stopping its crawl and changes the areas to green forests.
- The great uses for mesquite tree and its adapting with the dry environments and success in the growth in the bad circumstances impose our interest to study this tree through going deeply in the study and its management adjusting in suitable view to avoid the country current problems, which is represented in its fast spreading in wadis stream and agricultural lands.
- Encouraging the inhabitants for the investment in the areas where mesquite trees is spread for decreasing the pressing on the forester resources. As that use from experience of others in the dealing with this tree and in especial home country and the neighbor countries .
- It distinguish with grown fast forming collected strong roots horizontal and vertical and in the production of woods fuel having high caloricity and strong woods uses in wooden furniture industry and the compressed wood plates and fruits contain high nutritious value for the habitants, animal and bees.



➤ **How mesquite tree entered to Yemen?**

- Introduces locally with “the mesquite” and “alsysabaan” or “alsowl” in its different growths areas.
- The first time registered in Yemen was near water tanks in Aden governorate in the beginning of nineteenth centuries, and then the lights is dominated on this plant in the last two decay from the twentieth centuries elapsed.
- The mesquite entered to Yemen official in year 1974 , when it was entered by one project of the worldwide Foods and Agricultural Organization (FAO) for the desertification struggler.
- the researches started on the study of natural and biological characteristics of the Mesquite tree, and the government begin to used it for fixing the moving sands and rehabilitation of arid desert
- This plant spread straight ahead in the Yemeni coastal and desert without exclusion for any area from Yemen governorates area (Al-hodiadah, Aden, Lahj, Abyan, Shabwah, and Hadramout) (low land).
- from the basic local studies the area which is cover for this plant could be estimated to be about (30,000 - 24,000) hectare, and One hectare be contained about 500 trees, and every tree can product about 20 kg from the kroon (fruits) annually.
- The number of trees RY governorates estimate to be about (1,250,000 - 1,500,000) trees now



The damages and problems of the musket trees:



Ser	Area in hectare	Region
1	620	Tehama – North region
2	550	Tehama – middle region
3	450	Tehama – south region



The damages and problems of the musket trees:



Advantages of Musket



Use of the tree in afforestation work:

9.2 Use of mesquite tree in land reclamation:

The table clarifies the nutritious percentage which fixes by this tree

(Source: P.K. Rama chondran Nair (Singh and Lal (1969))

K%M loogs%	P% Mg 1oog	N%	%C	الموقع	النوع
296	37	0.075	0.73	تحت الشجرة	Prosopis
294	31	0.027	0.25	الاراضي المفتوحة	Juliflora
12.20	3.82	0.045	0.37	0.30 Cm تحت الشجرة	Prosopis cineraria
7.52	1.52	0.038	0.25	الاراضي المفتوحة	
9.31	1.95	0.020	0.11	Cm 31- 60 تحت الشجرة	Prosopis civleraria
6.36	1.23	0.010	0.07	الاراضي المفتوحة	

The production of the wood, firewood and charcoal:





The production of honey and animals fodder:





The production of animals fodder and human food



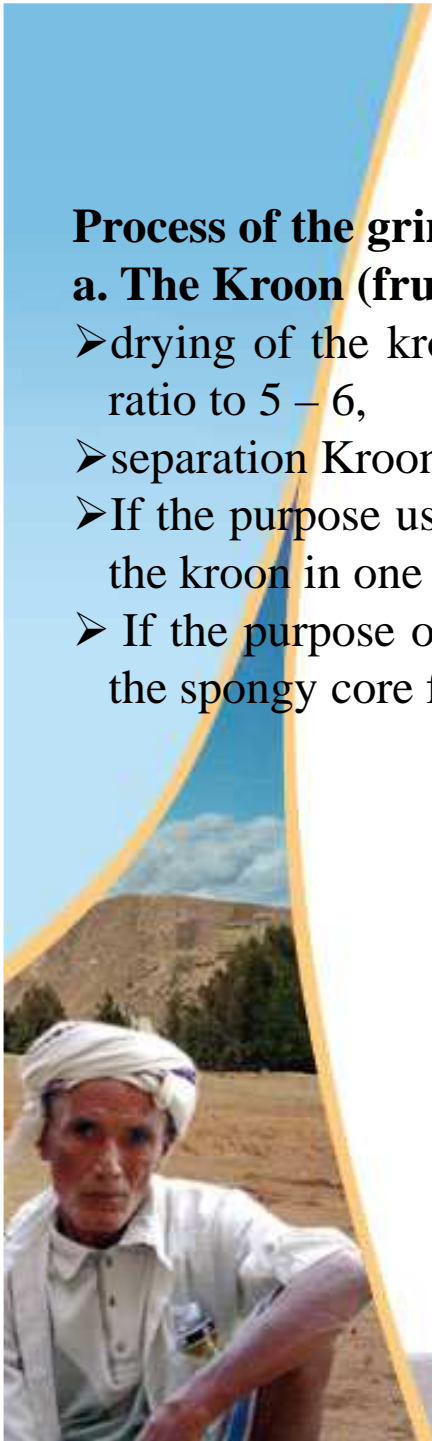
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Process of the grinding

a. The Kroon (fruits) grinding on the laboratory level

- drying of the kroon (mesquite fruits) before the grinding process to reach the humidity ratio to 5 – 6,
- separation Kroon parts then make the grinding process for each part.
- If the purpose use of the Kroon (mesquite fruits) for nutrition the animal, the grinding of the kroon in one process for producing rough flour (Coarse Flour).
- If the purpose of flours is for the human use, it is necessary to split the parts especially the spongy core for grinding it to get smooth and rough flour after the sieving process.



mesquite tree fruits (kroon) grinding

The proposes solutions:

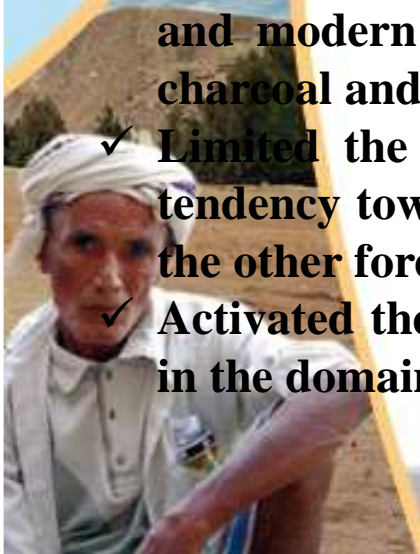
Through the opinions of the specialist, competent and farmers :

First: The musket tree considers as harmful tree and be necessary completely removed.

Second: Call for the tree management through the use of the flag and knowledge for investigation the big amount from its production without addition harms in the tree especially with temper through the following:

13.1 The integral management for the musket trees:

- ✓ **Making good management**
- ✓ **Making suitable plan for investment in the mesquite trees spreading areas, especially for Wadis main channel, Irrigation canals, near the agricultural lands and the forested areas in the sandy dunes and the winds buffers.**
- ✓ **Establishing the forester researches centers and forming the specialized administrations**
- ✓ **Encouraging the establishment of the suitable industries as using the suitable and modern technicalities for producing the wood and the firewood and the charcoal and saving the staff, capital money, technology and the markets.**
- ✓ **Limited the dissipations of the other forester products consumption and the tendency towards exploitation of this resource which will reduce the pressing on the other forester resources.**
- ✓ **Activated the participation of the local societies through the plan and execution in the domain of administration and exploitation of the musket trees,**



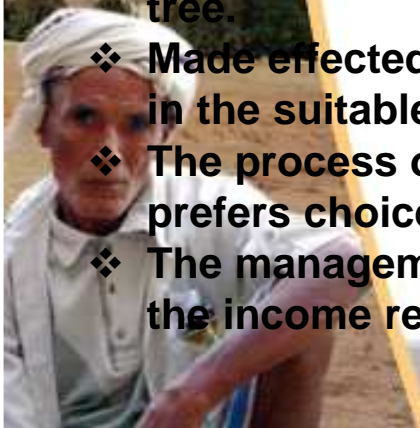
13.2 The Purposed solutions for mesquite problems and limitation for its random spreading:

- The removal of all mesquite trees which is grown in Wadis and wadis banks through removal campaigns for all musket trees by the trees extraction using the heavy equipment as the bulldozer.
- The removal of the trees and shrubs which is grows in randomization way in the agricultural lands (All small seedling should be removed in early stage through the manual removal).
 - ✓ if it was widespread in big number in dense form, **here soil grubbing should be made by using bulldozer, and using plowing machine with inverter big depth to abolish all small seedling which covers the land. and after that the montoring process occurs.**
 - ✓ Fimaking programs for the manual struggle for these trees when it is weak and small.
 - ✓ Encouraging the poor peoples and the families in the spreading areas for gathering and selling the mesquite fruits to the specialized authority or industries
 - ✓ Enters the plant fruits in the industrialization domain of the foddors (the animals nutrition and livestock).
 - ✓ the searching concentration for the benefit from the flour resultant from grinding of the mesquite fruits in the domestic nutritious industries (making Al-Keik and the cookies and biscuits)
 - ✓ This method will realize two goals; **the first is the raising the income level for those poor families, the second goal is the reduction of the harm resulting from spreading of the seeds.**
- Some researchers see that the solution for the problem of the musket tree will be through the control in its flowers process stage:
 - ✓ Big relationship between the trimming and the fruits increase or its nonexistence according to the execution time of the tree trimming.
 - ✓ The mesquite trees is flowerd twice in the year the first in latest of February month and the second in beginning of November month and every period arrives its florescence period to be three months.



Conclusions

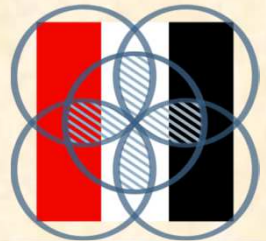
- ❖ The mesquite tree is considered from the important in the operations of afforestation in the dry and semi-dry areas.
- ❖ It can be exploited in the areas where the inhabitants need for the fire wood and charcoal resources.
- ❖ This tree is a good source for fodder of the animals and pastures honey bees in the very dry areas , by control ing the afforestation through the limitation of spreading of this tree in different areas.
- ❖ Making forested areas for investigation of the different benefits in continuity form by collaboration with the local societies.
- ❖ Asking for the assistance from countries where the mequite tree is already spread in it, as Southern and Middle and Northern America for the knowledge of the successful methods for control and removal.
- ❖ Activate the forester researches to produce a kind of this tree which is fruitless seeds and produce the plants.
- ❖ The work on the farmers awareness in the interest in the different agricultural processes from grubbing, trimming and weeding for preventing the spreading of this tree.
- ❖ Made effected treatment of animals waste which feed on the mesquite fruits (kroon) in the suitable scientific methods .
- ❖ The process of the elimination from all areas is very expensive and not useful and prefers choices are the investment in these areas.
- ❖ The management of these areas in sustainable form should be applied to improve the income resources for the inhabitants in the damage areas



Thank you for your
attentions



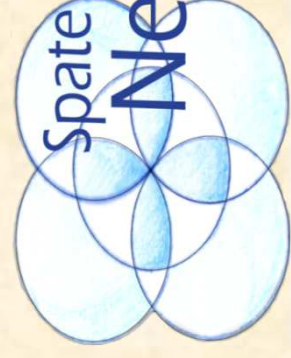
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