

# Useful Knowledge Analysis Tools using AKT5 vers. 5.24

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February 2013

# System Tools > Knowledge Analysis > Single Kb > Hierarchic\_objects\_usage

This tool produces really neat output that can be transported as a table to Excel (you'll need to have Excel open in the background). It works best if you have well thought out object hierarchies that are well populated.

For example, it can show where tree species appear in the landscape (e.g. on boundaries, in crop fields, in forests, around the homesteads) and it can show which trees appear in which categories for different physical attributes (e.g. small leaves, big leaves, deep rooting, shallow rooting).

Develop good object hierarchies and this tool will produce great output!



Currently selected Kb : nbdc\_fogera

Output

Results for hierarchic\_objects\_usage/0 ( 27/6/2012 17:6:17 )

Multiple usage of the same object within different hierarchies.

OBJECTS	boundary_hedge_t	community_forest	cropland_single_	settlement_hedge
african_pencil_c		x	x	
african_wild_oli		x		
agam		x		
atat		x		
avalo		x		
avocado			x	
bambula			x	
boundary_hedge_t	x			
broad_leaved_cro			x	
bula_grar		x	x	
chivaha		x		
community_forest		x		
cropland_single_			x	
debene		x		
fruit_trees			x	
grar_species		x	x	
guava			x	
gumero_species		x		
hog_plum		x		
hop_bush		x		
key_grar		x	x	
large_leaved_cor			x	
lime			x	
local_gumero		x		
mango			x	
nech_grar		x	x	
papaya			x	
red_eucalyptus	x			x
river bean			x	

Print

File

Excel

Close

## **System Tools > Knowledge Analysis > Single Kb > Hierarchical\_objects\_diagram**

This tool produces output in the form of a AKT causal diagram which is created separately from the main knowledge base. When running the tool, you are asked to select an object used in the knowledge base object hierarchies. For example, if you want to see a diagram about african wild olive (example from the nbdc\_fogera KB), then you select this object and AKT generates a diagram that includes all statements that relate to this object and its superobjects (e.g. medicinal\_trees).

This is useful when you want to see if all the statements associated with an individual object are true, but also for producing output that can be used in a report.

Diagram 1  all  causal  link

Add node

- 
- 
- 
- 

Add

- 

Delete

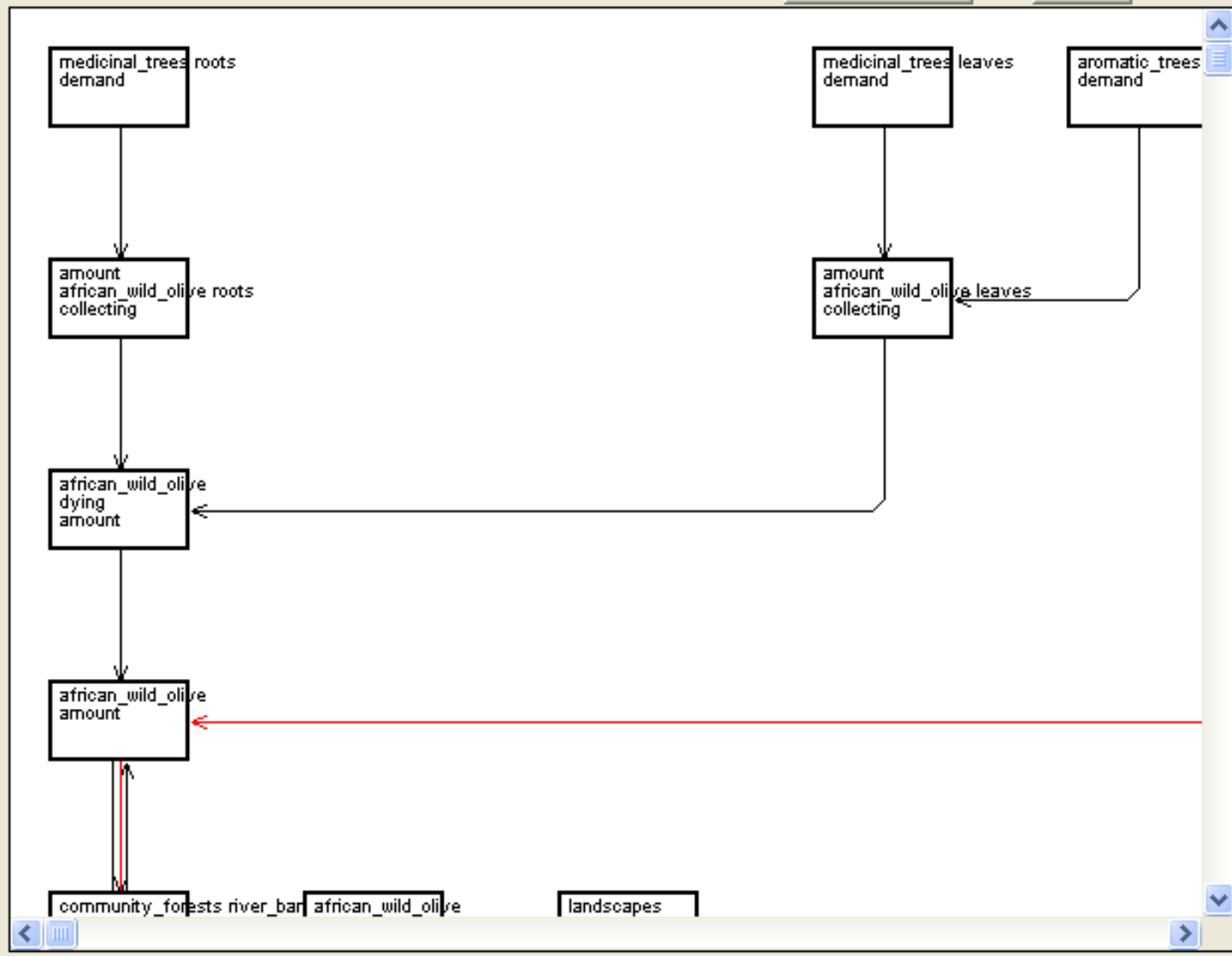
- 

Hide

- 

Show/Hide

- 



- 
- 
- 
- Label Mode
- 
- 
- 
- 
- 
- 
- 
- Causes/Effects
- 
- Select Diagram
-

## **System Tools > Knowledge Analysis > Single Kb > Object\_hierarchy\_report**

This tool produces tabulated output that can be transported to Excel. It shows the number of statements associated with the object hierarchies in the knowledge base, e.g. in the nbdc\_fogera knowledge base there's just 3 statements referring to 'cereal\_crops'.

You may want to run this tool to check whether your hierarchies are being used to their full potential and whether there needs to be more interviewing to add more detail to the knowledge base.



Currently selected Kb : nbdc\_fogera

Output

Results for object\_hierarchy\_report/1 ( 27/6/2012 20:46:24 )

PARAMETERS

Kb = nbdc\_fogera

Number of statements about all the objects within each hierarchy.

Object hierarchy	Number of statements
aromatic_trees	2
bird_disseminated_trees	11
boundary_hedge_trees	73
cereal_crops	3
charcoal_trees	4
community_forest_trees	35
compost_potential_trees	5
construction_wood_trees	71
crop_species_site1	2
crop_species_site2	6
crop_species_site3	6
cropland_deadfence_trees	23
cropland_single_trees	23
fibrous_rooted_trees	35
firewood_trees	67
fodder_trees	23
fruit_trees	2
grar_species	6
gumero_species	14
honey_potential_trees	70
irrigated_winter_crops	10
medicinal_trees	9
settlement_deadfence_trees	62
settlement_hedge_trees	62
tap_rooted_trees	70
timber_trees	8



Print

File

Excel

Close

## System Tools > Knowledge Analysis > Single Kb > Objects\_attributes\_table

This tool produced tabulated output that you can transport to Excel and then edit as you like. It is a really good tool for checking whether there are gaps in your research and to see where you need to ask more questions – particularly if you're interested in comparing attributes of different species.

The output shown on the next slide was produced from the `cafnet_guatemala` knowledge base; in this research an important area was comparing the qualities of different species' leaves because of their ability to add nutrients to the soil in coffee agroforest systems. The tool was run by looking at the object 'leaves' and then the attribute 'nutrient\_content', with the following options selected: 1) causal *and* attribute statements, and 2) detailed definitions. Then the output was transferred to Excel, which is shown on the following slide.



Tool output - [objects\_attributes\_table/1]



Currently selected Kb : cafnet\_guatemala

Output

Results for objects\_attributes\_table/1 ( 27/6/2012 21:39:56 )

PARAMETERS

Kb = cafnet\_guatemala

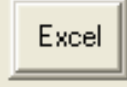
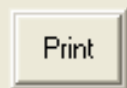
SELECTED OBJECTS :

- alguachocas
- durasnillo
- leaves

Attributes and their values for all selected objects (Causal and attribute statements).

Object	nutrient_content	Object definition	Statements
leaves	low	part(cedar_trees,lea	315
leaves	high	part(loquat,leaves)	57 , 196 , 235 , 589
leaves	bad	part(pine_trees,leav	63 , 64 , 65 , 85 ,
leaves	high	part(suquinay,leaves	82 , 84 , 157 , 406
leaves	medium	part(suquinay,leaves	82 , 84 , 157 , 406
leaves	high	part(trueno,leaves)	564
leaves	high	part(zapotón,leaves)	481

Finished objects\_attributes\_table/1 ( 27/6/2012 21:41:27 )



Attributes and their values for all selected objects (Causal and attribute statements).

Object	nutrient_content	Object definition	Statements
leaves	low	part(cedar_trees,leaves)	[315]
leaves		part(gliricidia,leaves)	[280,300,301]
leaves	high	part(loquat,leaves)	[57,196,235,589]
leaves	bad	part(pine_trees,leaves)	[63,64,65,85,118,226,324,359,372,438,543,573]
leaves	medium	part(suquinay,leaves)	[82,84,406,414]
leaves	high	part(trueno,leaves)	[564]
leaves	high	part(zapotón,leaves)	[481]

## **System Tools > Knowledge Analysis > Single Kb > Sources\_table**

This tool produces tabulated output that brings together all the details of the sources in the knowledge base, and the number of statements attached to each source.

The output can be easily transported to Excel and used in reports. It is also good to run the tool during development of a knowledge base to check that you're entering consistent details for sources (e.g. useful labels and values) and to check numbers of male/female informants if that is an important factor to consider.

Currently selected Kb : nbdc\_fogera

## Output

Results for sources\_table/0 ( 27/6/2012 21:55:27 )

## SOURCE TABLE

SOURCE		LABELS						No. of
Name	Location	Gender	Occupa	Age	Wealth	Study s	Stts	
Emahoy Belete	Woleten	female	Farmer	70	Medium		32	
Bosena Aebitewu	Tach Aebua	female	Farmer	40	Medium		72	
Abay Fentahun	Bila	male	Farmer	42	Rich	Dibasif	91	
Kese Ambawu Bizualem	Diba	male	Farmer	30	Rich	Dibasif	66	
Sitotawu Mekonen	Diba	male	Farmer	60	Poor	Dibasif	83	
Asres Asfawu	Tinish Terara	male	Farmer	40	Poor	Dibasif	74	
Gedef Asmamawu	Bila	male	Farmer	49	Medium	Dibasif	93	
Melkamu Getahun	Bila	male	Farmer	51	Medium	Dibasif	53	
Talema Adane	Tinish Terara	male	Farmer	41	Medium	Dibasif	86	
Talema Adane	Tinish Terara	male	Farmer	41	Medium	Dibasif	15	
Tsegawu Beza	Tach Aebua	male	Farmer	60	Medium	Tihua E	55	
Amilaku Addis	Tach Aebua	male	Farmer	38	Medium	Tihua E	85	
Tsegawu Beza	Tach Aebua	male	Farmer	60	Medium	Tihua E	19	
Cheru Mekonen	Lay Aebua	male	Farmer	38	Medium	Tihua E	88	
Bosena Aebitewu	Tach Aebua	female	Farmer	40	Medium	Tihua E	25	
Zenebe Marie	Titi Midir	male	Farmer	36	Rich	Tihua E	74	
Zenebe Marie	Titi Midir	male	Farmer	36	Rich	Tihua E	12	
Mamo Marie	Aba Carieta	male	Farmer	31	Poor	Tihua E	71	
Fasiga Tessema	Lomi Kole	female	Farmer	51	Poor	Tihua E	28	
Getnet Asnike	Tach Marza	male	Farmer	41	Medium	Tihua E	54	
Abebe Maru	Alemayehu Gebriael	male	Farmer	37	Medium	Tihua E	92	
Yibeital Mequanent	Woreta	male	Soil &			NA	18	
Minsganaw Adimas	Galaterara / Marter	male	Farmer	42	Medium	Alem Be	63	
Melkam Marie	Woleten	male	Farmer	39	Medium	Alem Be	63	
Melkam Marie	Woleten	male	Farmer	39	Medium	Alem Be	18	
Bilata Worku Tamrat	Siraba	male	Farmer	57	Rich	Alem Be	58	
Bilata Worku Tamrat	Siraba	male	Farmer	57	Rich	Alem Be	6	

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Excel

Close

## **System Tools > Knowledge Analysis > Single Kb > Species\_report**

This is a great tool for looking up everything that is held in the knowledge base about something, e.g. in the nbdc\_fogera knowledge base we can run the tool to pull up everything about red\_eucalyptus. It shows the definition, its synonyms, associated statements and the hierarchies it appears in.

Example output is shown on the next slide.



Currently selected Kb : nbdc\_fogera

## Output

Results for species\_report/0 ( 27/6/2012 21:50:9 )

Species definition for : red\_eucalyptus

Tree species commonly found in the study area, in a range of different contexts.

'red\_eucalyptus' is a member of the following hierarchies :

- boundary\_hedge\_trees
- construction\_wood\_trees
- firewood\_trees
- honey\_potential\_trees
- settlement\_deadfence\_trees
- settlement\_hedge\_trees
- tap\_rooted\_trees
- tree\_species\_sitel
- tree\_species\_site3
- waterlogging\_tolerant\_trees
- wooden\_farm\_equipment\_trees

'red\_eucalyptus' has the following synonyms :

- key\_bahir\_zaf
- Eucalyptus camaldulensis

'red\_eucalyptus' is used in the following attribute statements :

1: the sensitivity\_to\_termites of red\_eucalyptus is high if red\_eucalyptus age is below\_2\_y

'red\_eucalyptus' is used in the following causal statements :

- 10: collecting of red\_eucalyptus fallen\_leaves causes using\_as\_fuel red\_eucalyptus fallen\_1
- 113: red\_eucalyptus driving\_down\_farmlands\_soils causes formation\_of\_farmland\_soil\_surface
- 114: planting\_of\_red\_eucalyptus\_location\_is\_on\_farmlands causes red\_eucalyptus driving\_down
- 118: an\_increase\_in\_amount\_of\_farmers\_realising\_red\_eucalyptus\_potential\_disadvantages cau
- 131: the\_amount\_of\_red\_eucalyptus\_needing\_water\_is\_high causes the\_amount\_of\_vertical\_gro
- 132: vertical\_growth\_of\_red\_eucalyptus\_stems\_rate\_is\_fast causes the\_amount\_of\_red\_eucalyp
- 144: growth\_of\_red\_eucalyptus\_rate\_is\_fast causes the\_amount\_of\_red\_eucalyptus\_consuming\_so

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## **System Tools > Knowledge Analysis > Multiple Kbs > Source\_summary**

This is one of the few 'Multiple Kbs' tools that works well on a single Kb too. It shows you how many informants there are of each gender, location, and any other labels you've added to the source details box. This output is very useful when summarising your knowledge base sources for reports.

Currently selected Kb : nbdc\_fogera

## Output

Results for source\_summary/0 ( 27/6/2012 22:39:55 )

Number of sources that use the selected item in each knowledge base

gender	nbdc_fogera
female	5
male	30

Number of sources that use the selected item in each knowledge base

location	nbdc_fogera
Aba Garieta	1
Achesar	1
Alemayehu Gebriael	1
Bila	3
Diba	4
Galaterara / Marterara	1
Gorenderba	1
Korkuarit	2
Lay Aebua	1
Lomi Kole	1
Siraba	2
Tach Aebua	5
Tach Marza	1
Tinish Terara	3
Titi Midir	2
Wolelten	2
Woleten	3
Woreta	1

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