

Bhat, N. S - Balakrishna Gowda - Ravishankar, M. - Sringeswara, A. N.



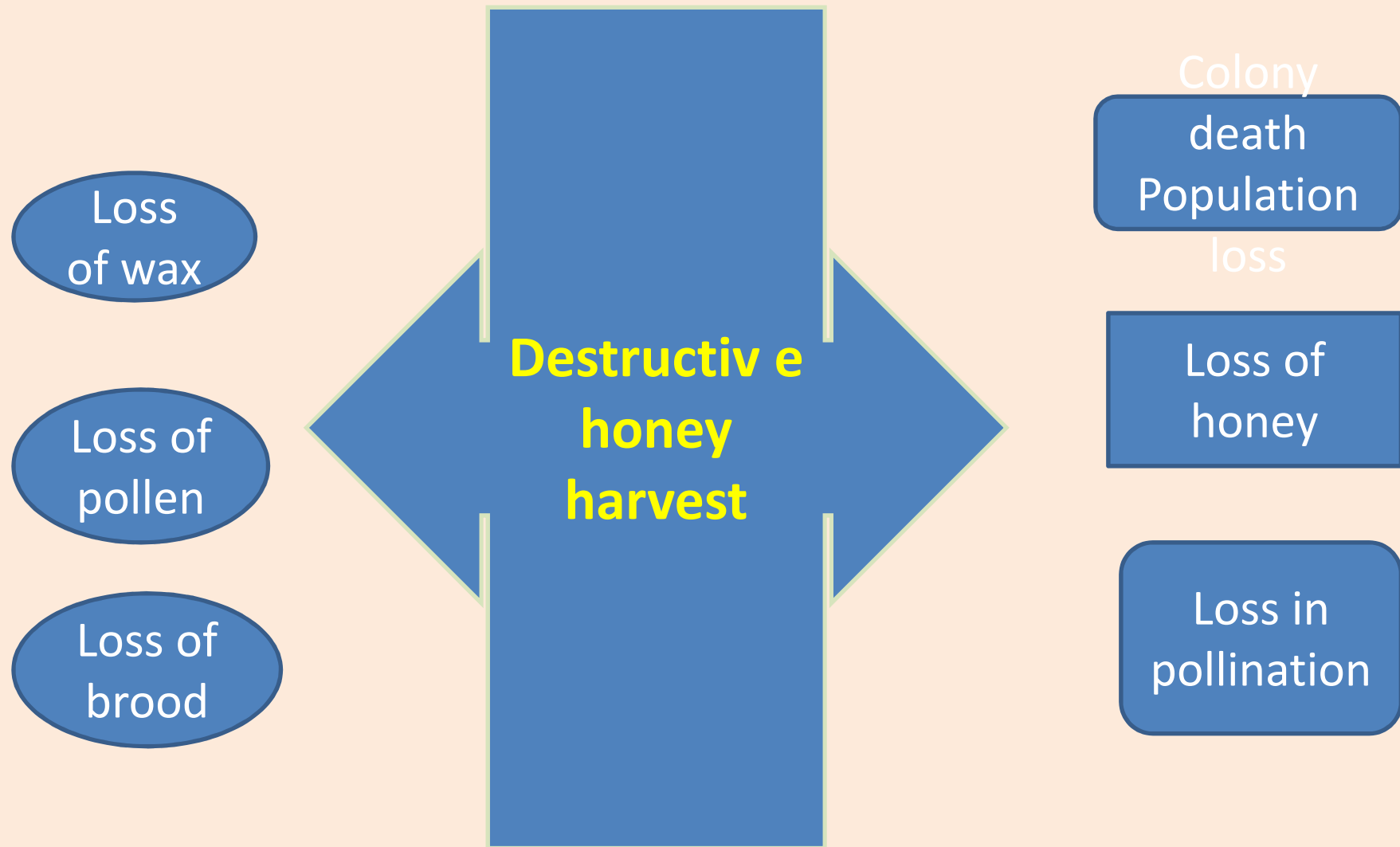
UNIVERSITY OF AGRICULTURAL SCIENCES
BANGALORE – INDIA

ICAR-NAIP on A Value Chain on Wild Honey Bee

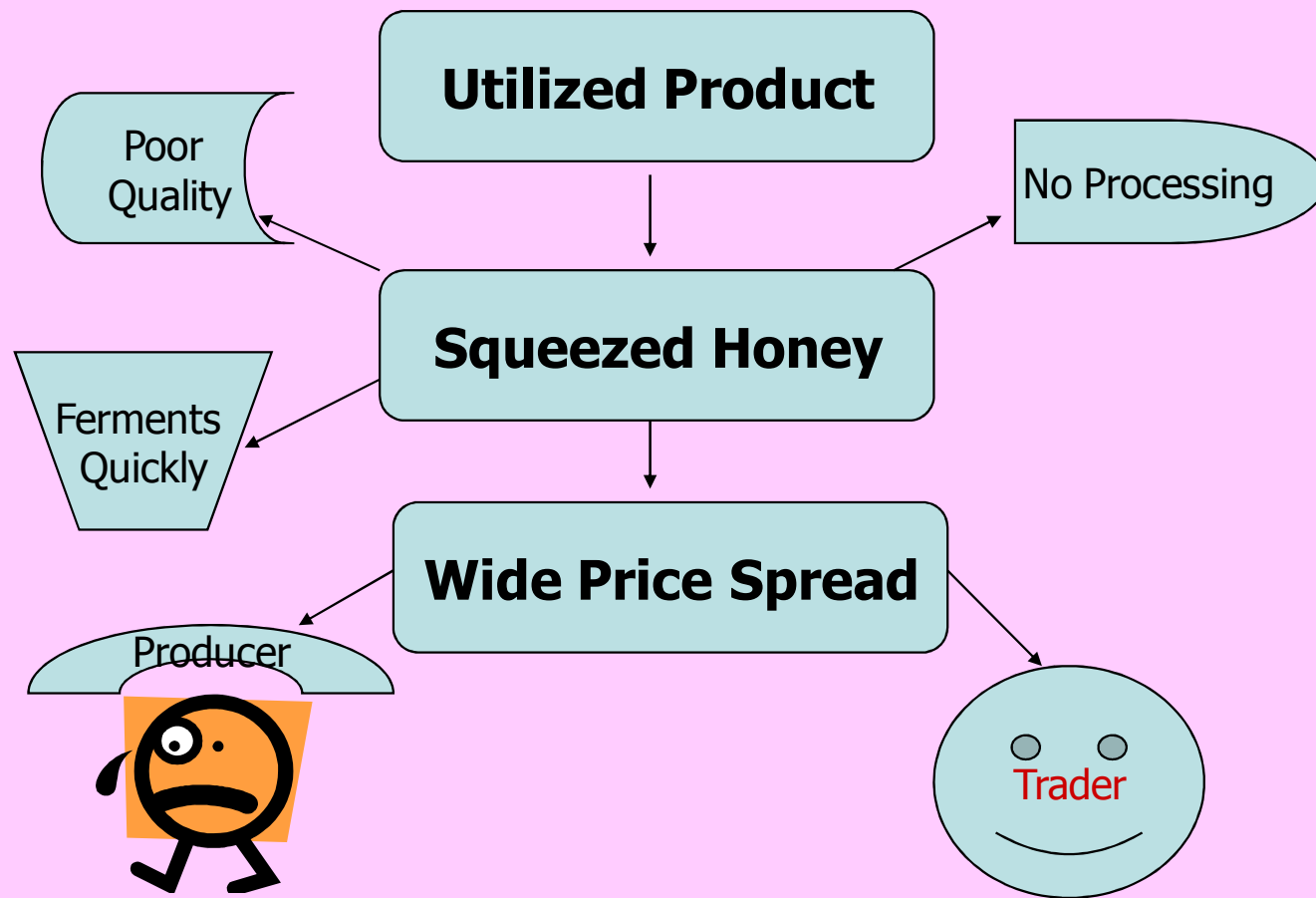




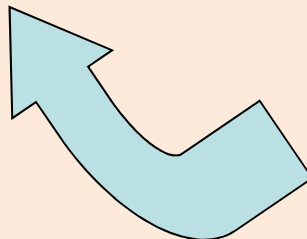
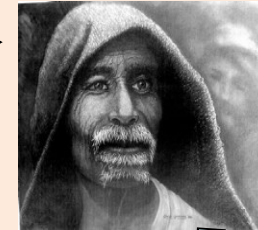
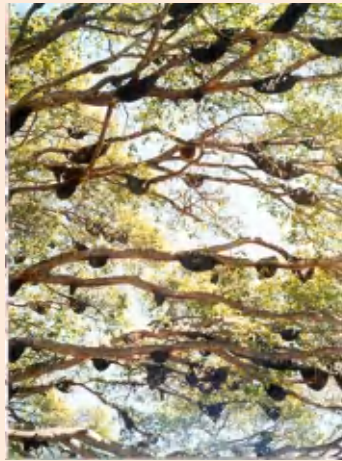
Older value chain



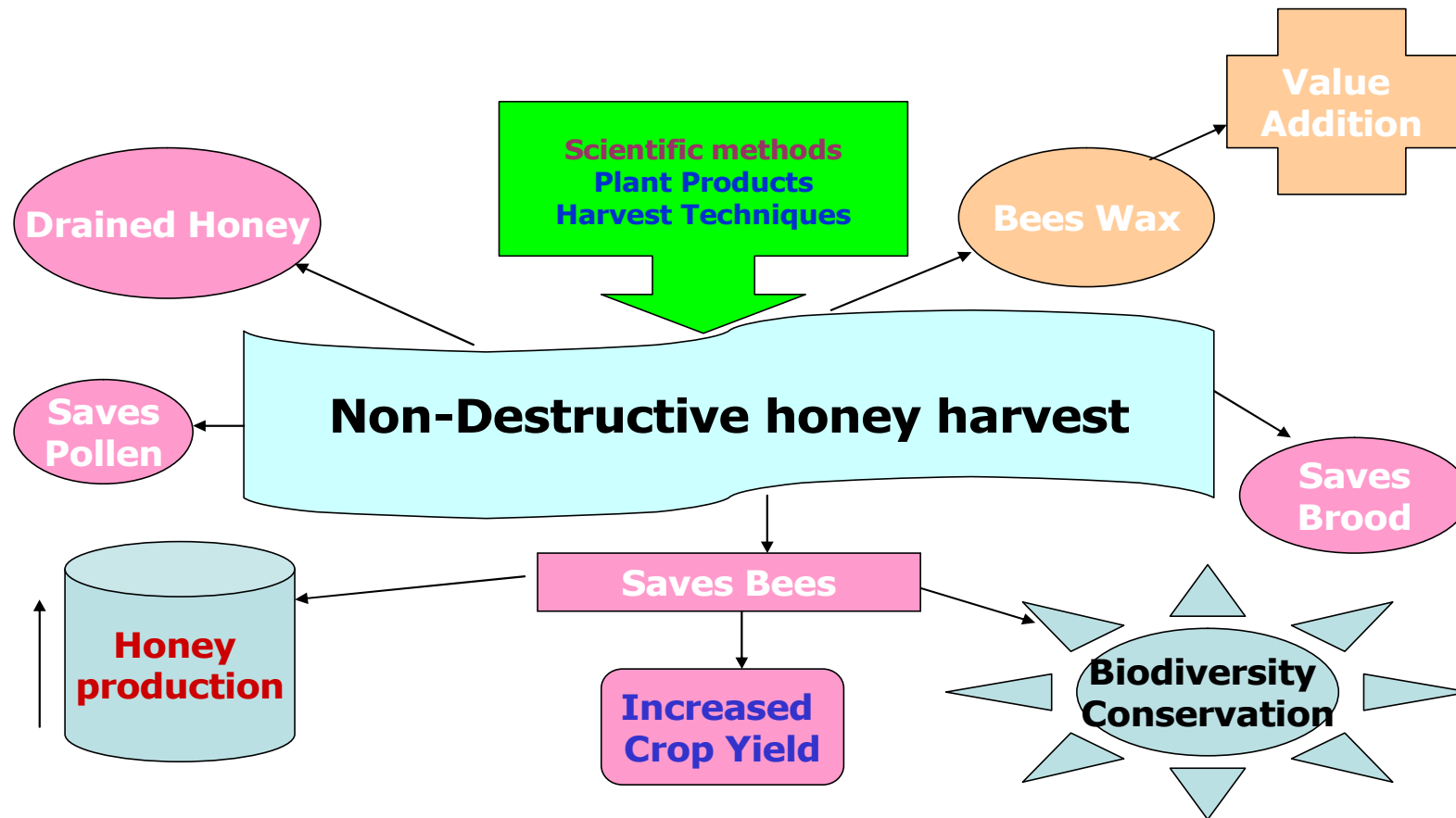
older Value Chain

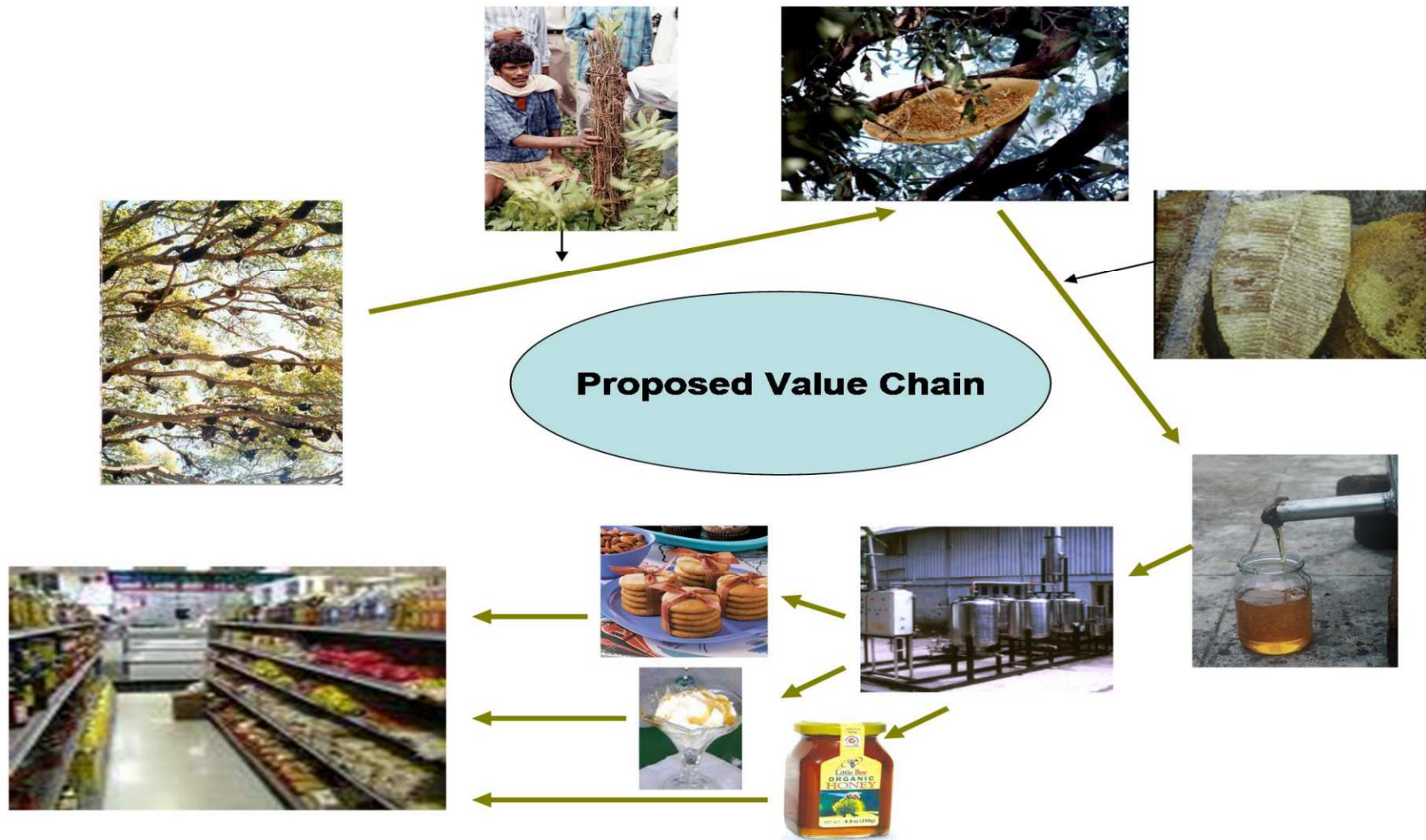


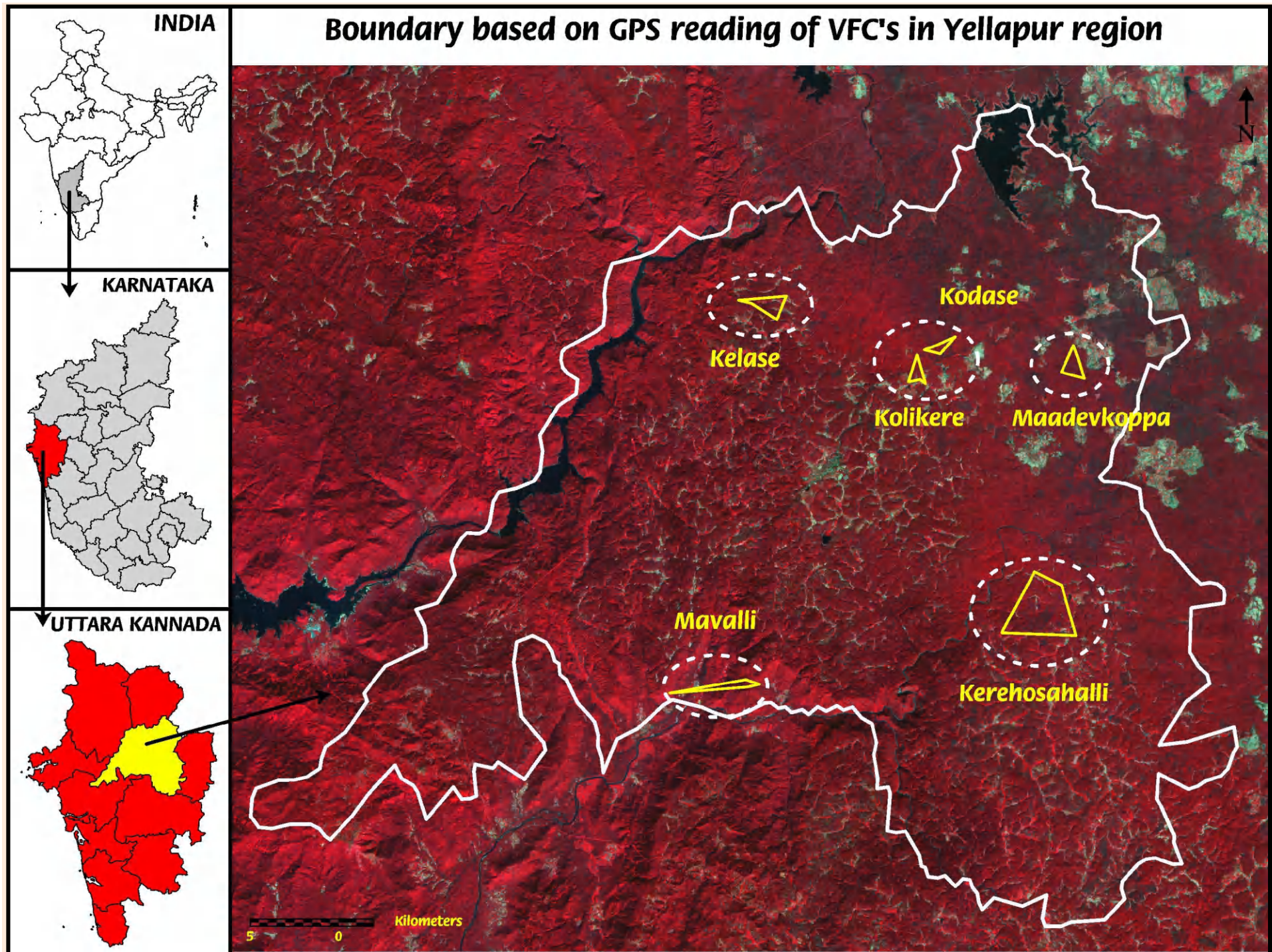
Older Value Chain



Proposed Value Chain







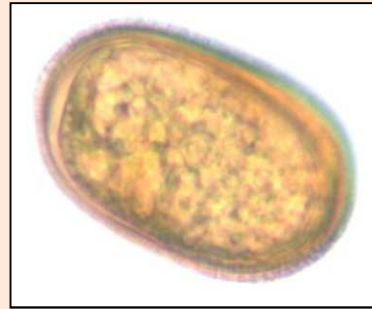
BEE FLORA

- A total of 86 bee flora recorded from study area, which provide nectar or pollen or both
- Pollen samples collected from the bee flora
- Permanent slides of pollen samples prepared as reference slides for the identification pollen source from the honey samples collected in the project area in different seasons

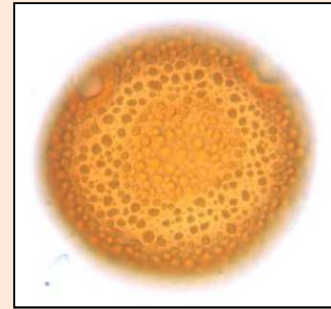
Acetolysis of pollen samples and subjected to DPX mount



Strobilanthes heyneana



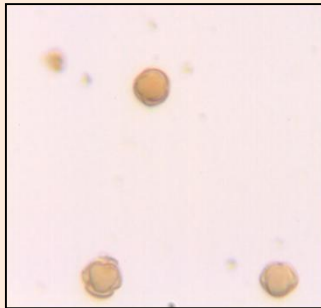
Butea monosperma



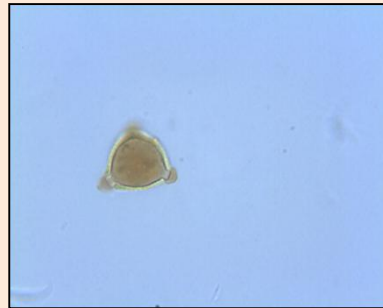
Alagium salvifolium



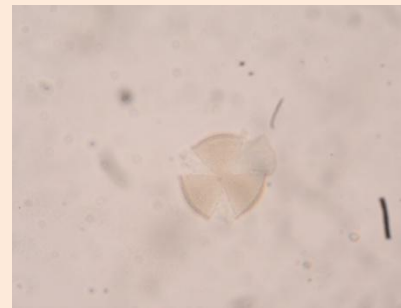
Gliricidia sepium



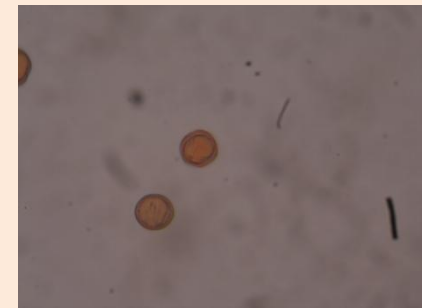
Olea dioica



Clausena dentata



Calicarpa tomentosa



Aporosa lindleyana



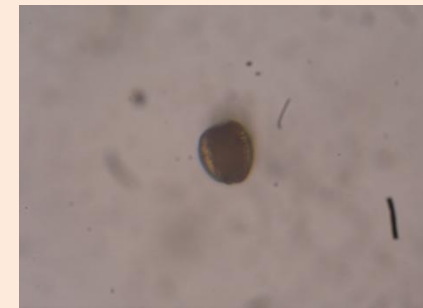
Calycopteris flribunda



Strobilanthes ixiocephala

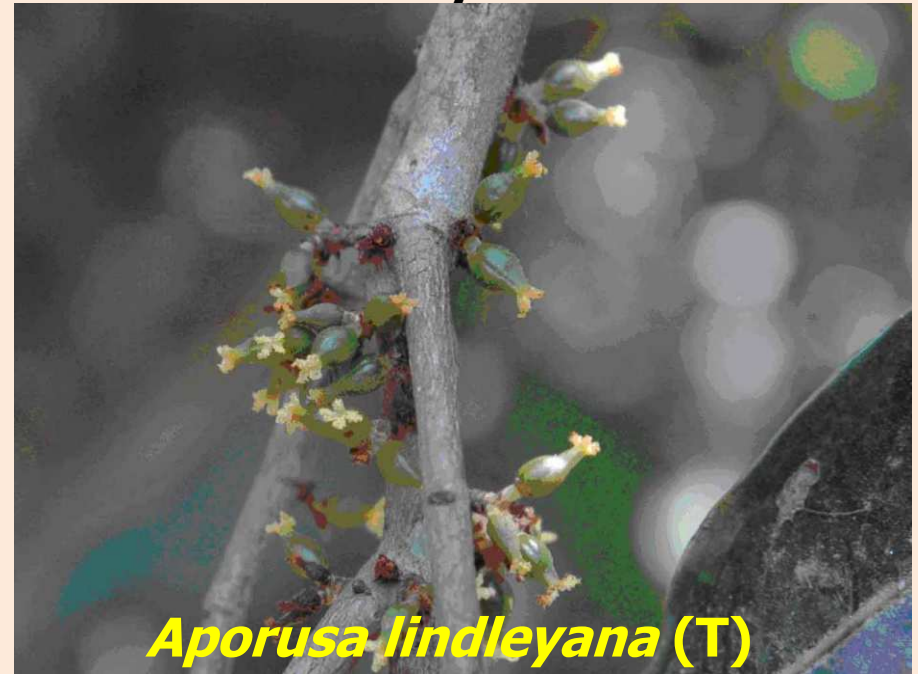


Strobilanthes ciliata

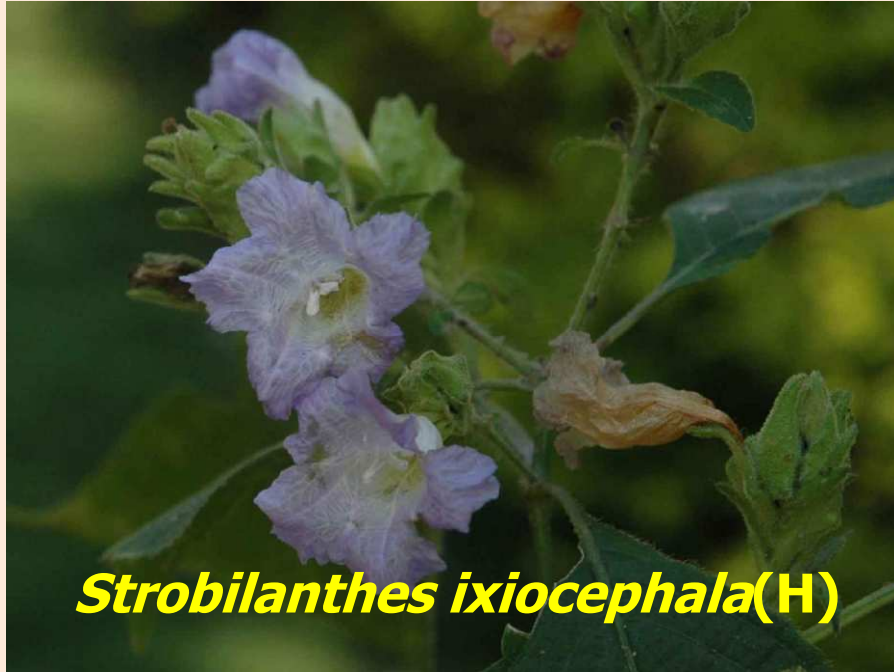


Careya arborea

Dominant Bee flora in December - January



Dominant Bee flora in January - February



Dominant Bee flora in March - April



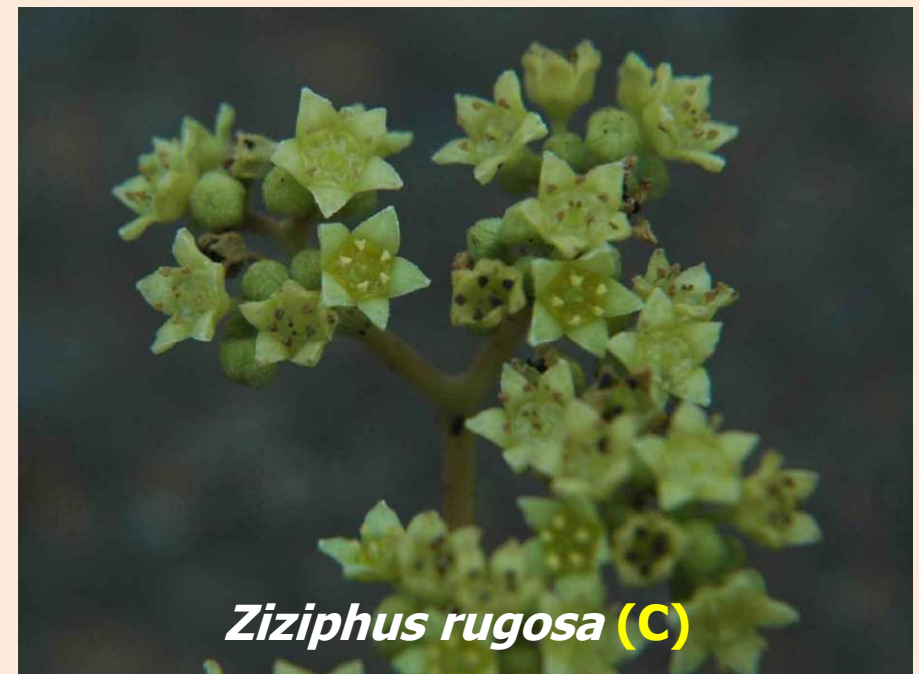
Syzygium caryophyllatum (T)



Pterolobium hexapetalum (C)



Wendlandia thyrsoidea (S)



Ziziphus rugosa (C)

Dominant Bee flora in March - April



Dillenia indica (T)



Clausena dentata (T)



Trichelia conoroides (T)



Canthium dicoccum (T)

Important off-season flora

Rainy season



Strobilanthes heyneanus

Strobilanthes ciliata



***Strobilanthes ixiocephala* – Nov-Dec-Jan**



Floral calendar of bee flora in Yellapur region

Species / Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Syzygium caryophyllatum</i>			■	■								
<i>Trichelia conoroides</i>			■	■								
<i>Aporusa lindleyana</i>	■	■										■
<i>Olea dioica</i>		■	■	■								
<i>Ziziphus rugosa</i>			■	■	■							
<i>Careya arborea</i>			■	■	■							
<i>Calicarpa tomentosa</i>	■	■	■									
<i>Wendlandia thyrsoides</i>			■	■	■							
<i>Stobilanthes</i> sp.	■	■	■	■	■	■	■	■	■	■	■	■
<i>Butea monosperma</i>		■	■	■								
<i>Gliricidia sepium</i>	■	■	■									
<i>Adina cordifolia</i>							■	■	■			
<i>Canthium dicoccum</i>	■	■										■
<i>Garcinia gummi-gutta</i>	■	■										■
<i>Pterolobium hexapetalum</i>					■	■	■					
<i>Dillenia pentagyna</i>			■	■	■							
<i>Terminalia tomentosa</i>				■	■	■						
<i>Terminalia paniculata</i>					■	■	■					
<i>Dalbergia latifolia</i>					■	■	■					
<i>Strobilanthes heyneana</i>									■	■	■	

Major trees which host the Rock bee colonies in Yellapur region

[REDACTED]

Terminalia paniculata

[REDACTED]

[REDACTED]

[REDACTED]

Persea macrantha

Mangifera indica

[REDACTED]



Adina cordifolia



Terminalia tomentosa



Bombax malabarica



Ficus benghalensis



Terminalia bellirica



Terminalia paniculata



Persea macrantha



Mangifera indica

Colony frequency distribution

Colony frequency	2010
0-5	50
5-10	40
10-20	22
20-40	16
40-80	7
No. of trees with colony	135
Total colonies	1677

Frequency distribution of rock bee colonies in six transect studied

Colony frequency / Transect	T1	T2	T3	T4	T5	T6	Total
0-5	5	3	1	1	1	4	15
5-10	6	4	4	3	5	1	23
10-20	1	1	0	0	0	1	3
20-40	0	0	0	1	0	2	3
40-80	1	0	0	0	0	1	2
No. of trees with colony	13	8	5	6	6	9	47
Total colonies	125	65	38	55	42	149	474

Average number of trees with colonies per transect	7.83 ± 2.93
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Average number of colonies per transect	79.0 ± 46.56
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Estimated average yield per transect (kg)	480.5 ± 325.9
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Estimated total yield for all transects (kg)	2883
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Average number of colonies per tree	10.3 ± 10
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Average yield per colony (kg)	5.5 ± 2
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Honey gathering community of project area: Yellapur



Sustainable harvest of rock bee colonies

Chasing the bees
away using
jumbo smoker



Clearing the comb
ready for harvest
with plastic basin



Approaching the tree top



Harvesting of only honey
part keeping the rest
of the comb intact



Tree climbing using rope



Clean honey



Getting down from the tree

Partial removal of honey from the comb



Clean honey from the chapped honey part of the comb





Amomum maximum



Amomum aculeatum



Zingiber zerumbet

Honey bee silencing effect of certain plant extracts



Multiplication of Bee repellent plants in greenhouse condition



Selected plant extracts and fractions are being tested with Electroanantogram for their repellent activity





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