

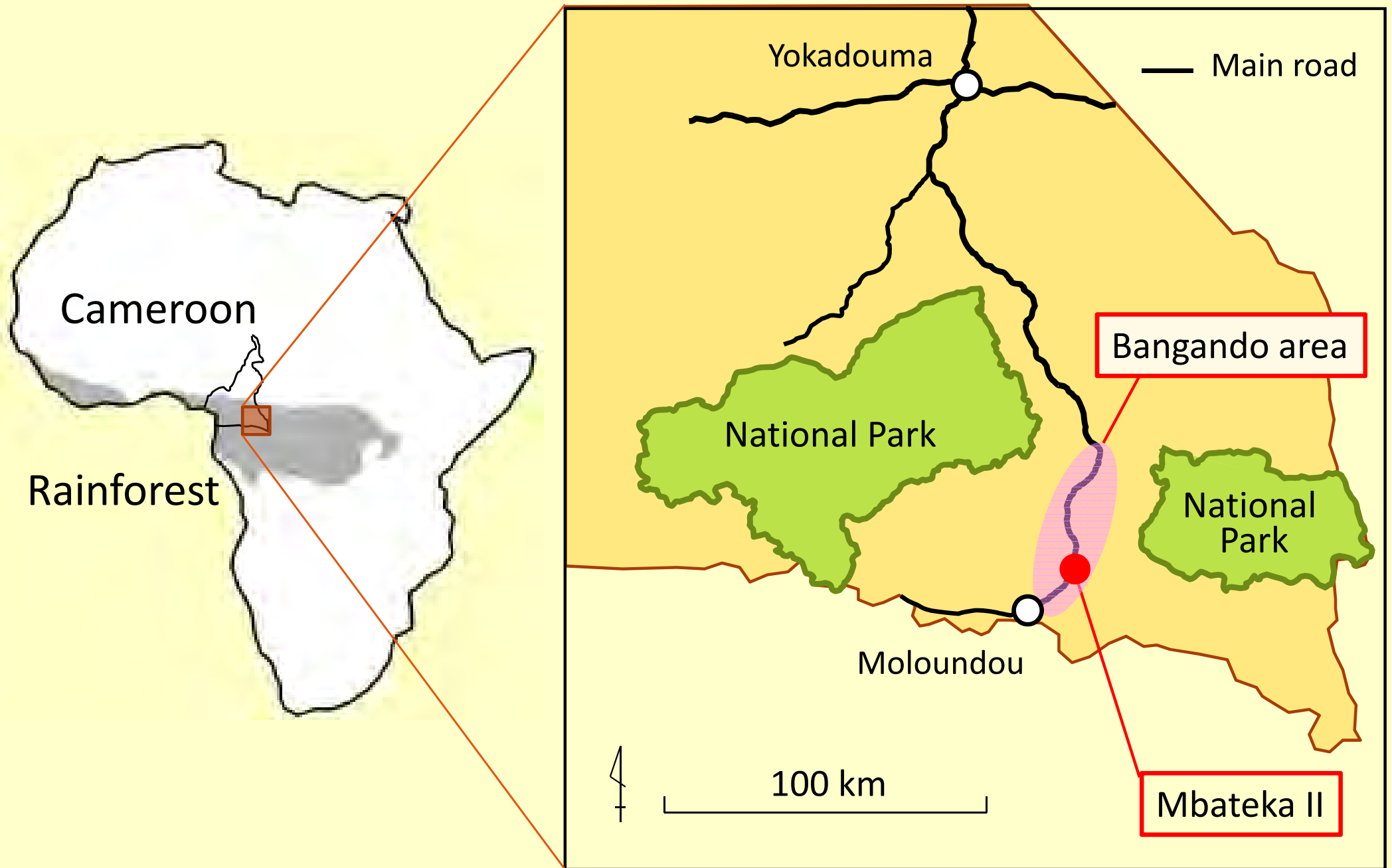
Abandonment of Cacao Agroforest:

Integrating commercial cacao farming into
traditional shifting cultivation in southeastern Cameroon



Kagari SHIKATA & Hirokazu YASUOKA

Research Site



Satellite Image of Research Site



2 km

(Captured from Google Earth)

Peoples in Mbateka II (Feb. 2006)

Bangando:	303 people	(49 household)
Baka:	363 people	(68 household)
Others:	18 people	(4 household)



A Bangando harvesting plantain



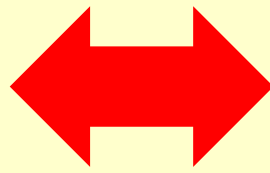
A Baka harvesting wild yam



Cacao Agroforest

General Perspective of Cacao Agroforest Studies

Shifting cultivation
Deforestation



Cacao agroforestry
Reforestation





Plantain banana



Cassava



Cocoyam



Maize



Groundnut



Cacao



Okra



Pepper



Avocado



Food crops field (*Pimba*)



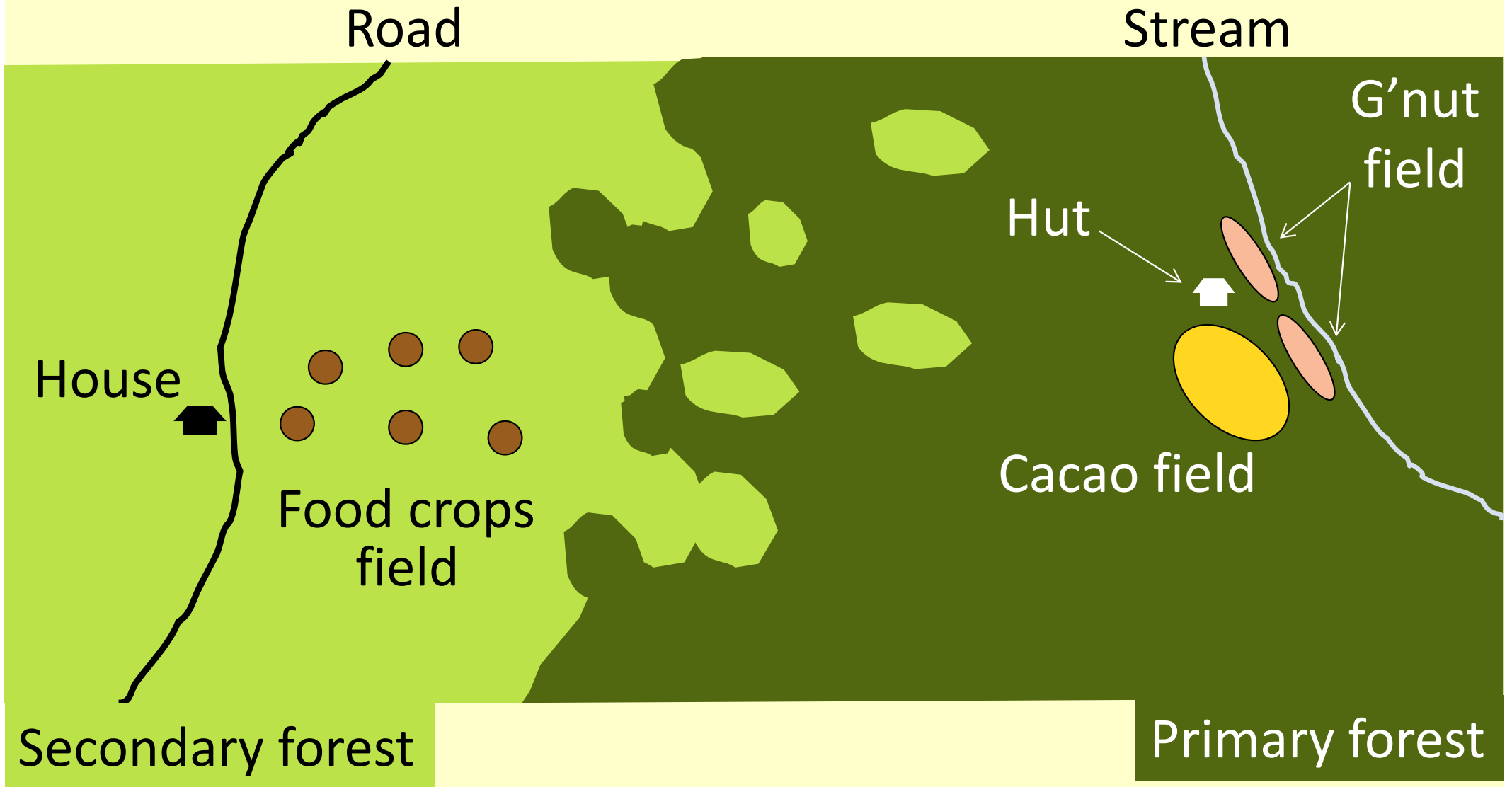
Cacao field (*Pimba cacao*)

Three Types of Bangando Crop Field



Groundnut field (*Sobo*)

Location of Three Type of Fields

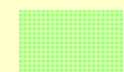


0 1 km

Crops observed in Each Type of Filed (2001)

Crops	Food crops field n=16	Cacao field n=13	G'nut filed n=6
Plantain	16	13	1
Cocoyam	15	13	3
Maize	15	13	6
Cassava	14	11	3
Pepper	3	4	2
Yam	2	3	1
Melon*	2	3	1
Okra	2	2	1
Cacao		13	
Groundnut		3	6
Nalta jute		2	1

* *Cucumeropsis mannii*

 >80%

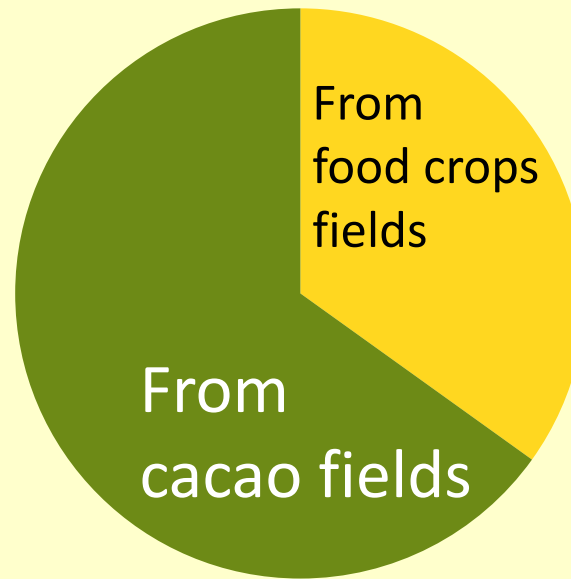
Percentage of Plantain Harvests from Each Type of Field

2001-2002
(8 months)



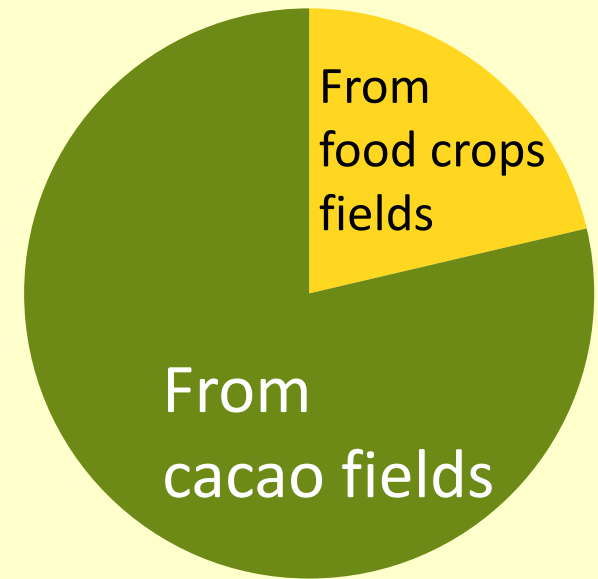
11.6 kg/day

2003
(3 months)



10.6 kg/day

2005-2006
(3 months)



15.3 kg/day

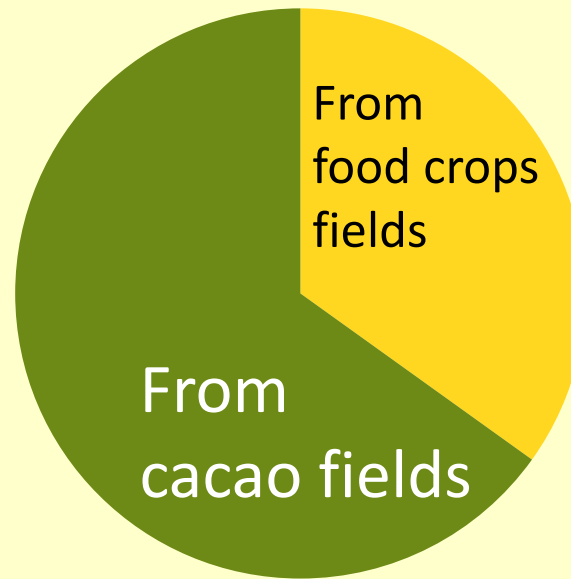
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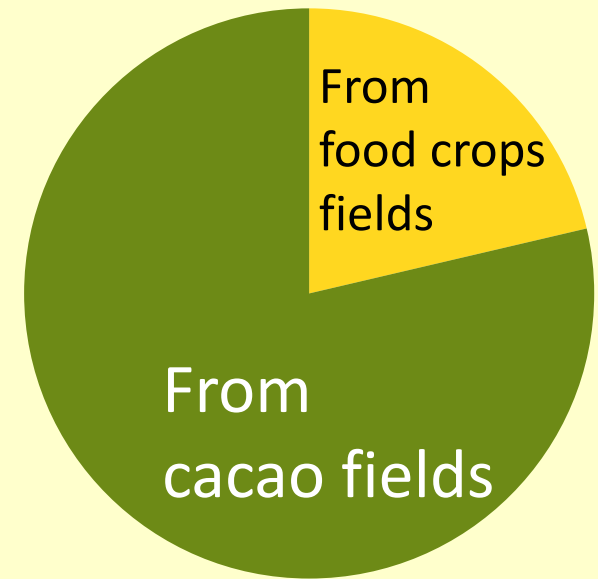
11.6 kg/day

2003
(3 months)



10.6 kg/day

2005-2006
(3 months)

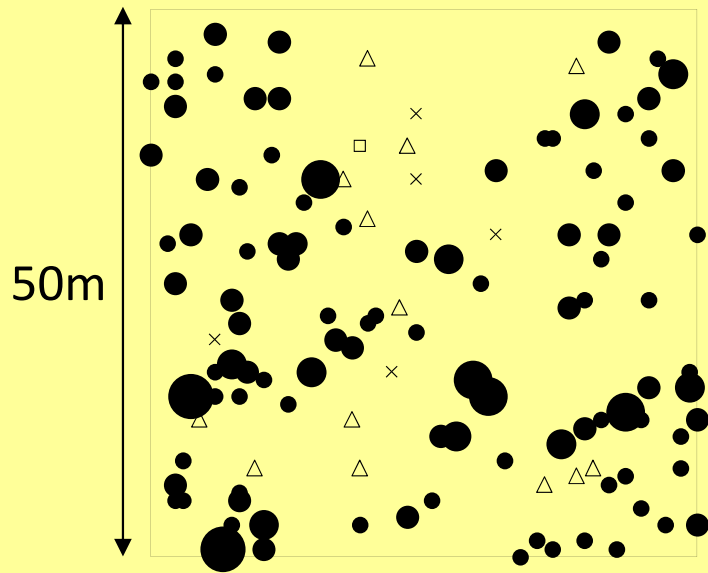


15.3 kg/day

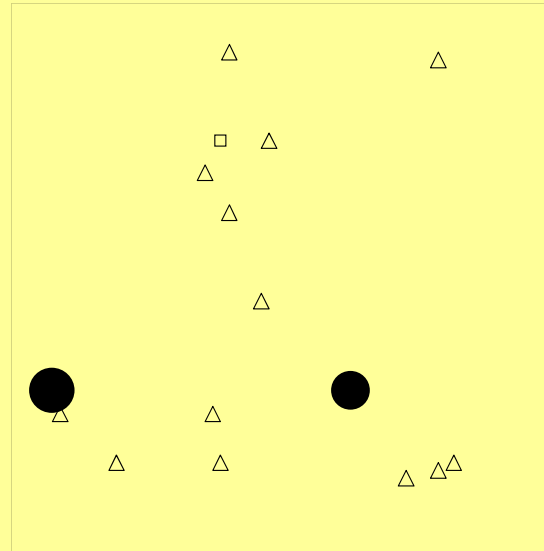
- (1) Early stage of cacao fields produce a lot of plantains.
- (2) Cacao price has risen since 2002.

Creation of **food crops** field

△ Plantain, □ Cocoyam, × Papaya



110 trees; BA: 2.9 m²



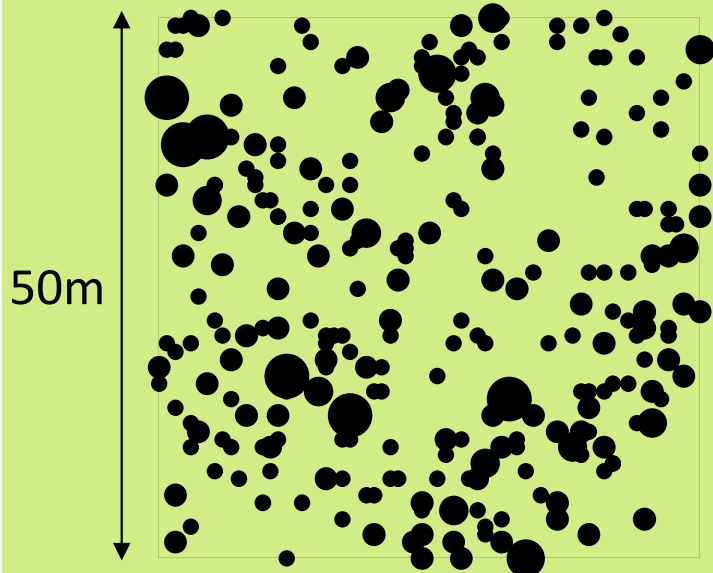
2 trees; BA: 1.0 m²



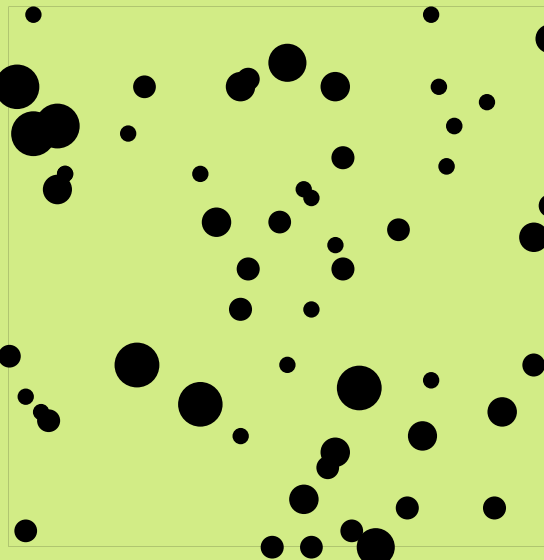
After clearing

Creation of **cacao** field

DBH(cm) ● 2.5-10 ● 10-30 ● 30-50 ● 50-80 ● 80-



268 trees, BA: 7.7 m²



57 trees, BA: 6.2 m²



After clearing

Succession of **food crops** field



3 months later



1 year later



3-5 years later

Succession of **cacao** field



3 months later



2-3 years later



5 years later

Succession of **food crops** field

10 years
later



Secondary forest
Dominated by
Musanga cecropioides
(parasol trees)

Succession of **cacao** field

10 years
later



Cacao agroforest

Succession of **food crops** field

10 years
later



Clear again

Succession of **cacao** field

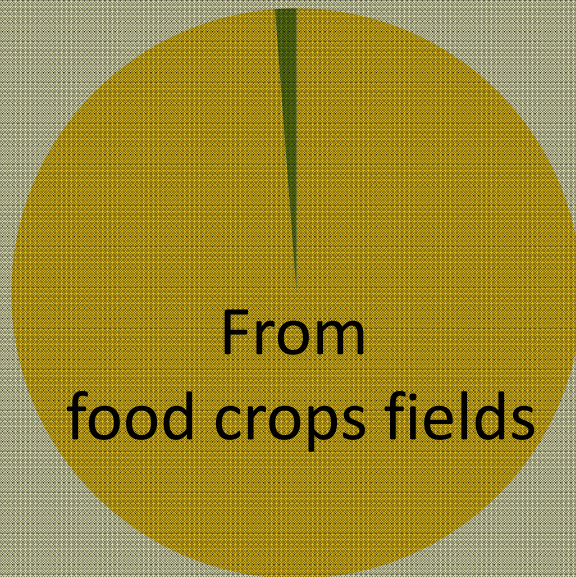
10 years
later



Cacao agroforest

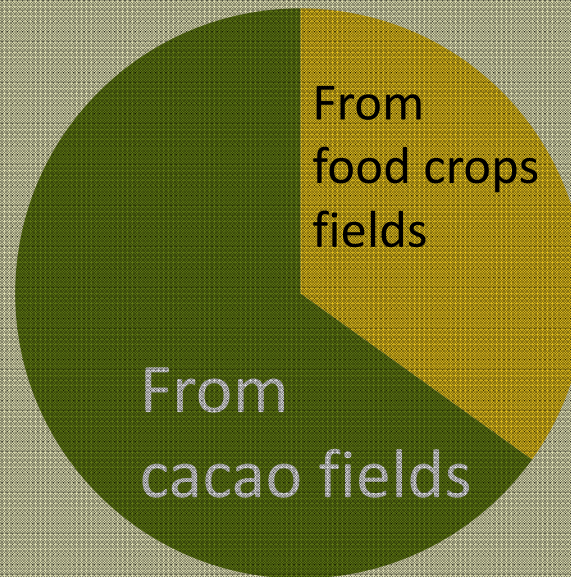
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2001-2002
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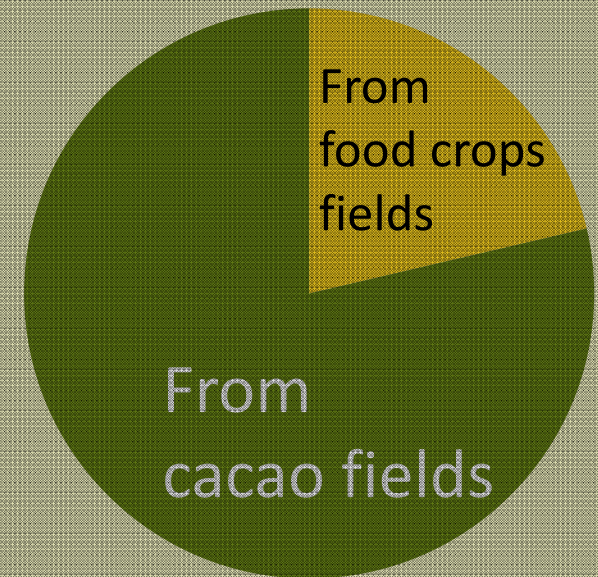
11.6 kg/day

2003
(3 months)



10.6 kg/day

2005-2006
(3 months)

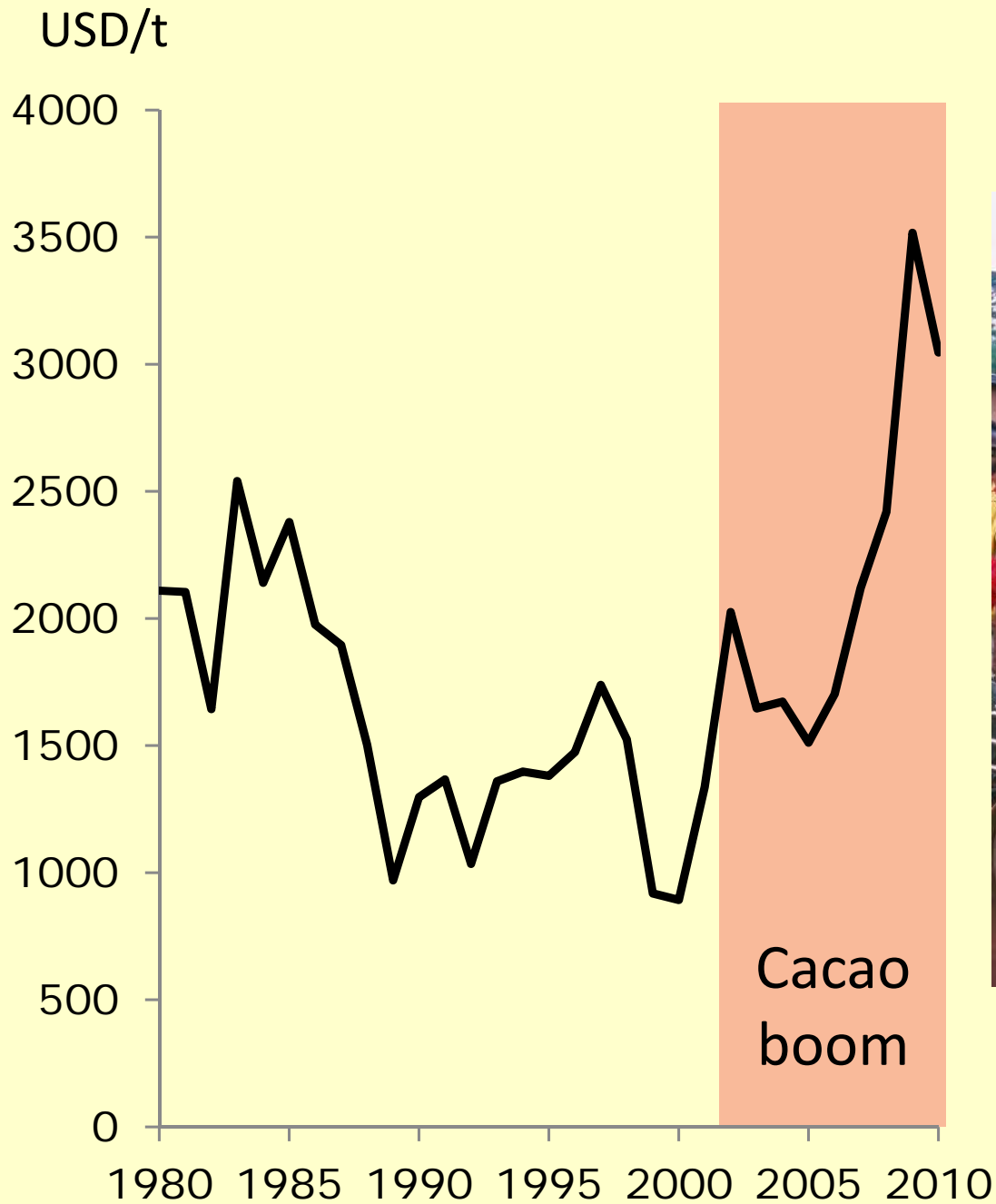


15.3 kg/day

- (1) Early stage of cacao fields produce a lot of plantains.
- (2) Cacao price has risen since 2002.

Fluctuation of Cacao Price

Source: ICCO

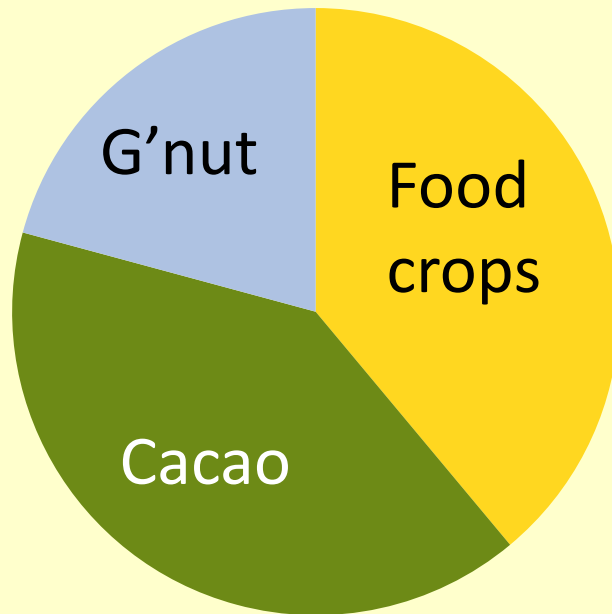


Motorbikes bought in the cacao boom

Percentage of Cleared Area for Each Type of Field

2001

(12 households, 35 fields)



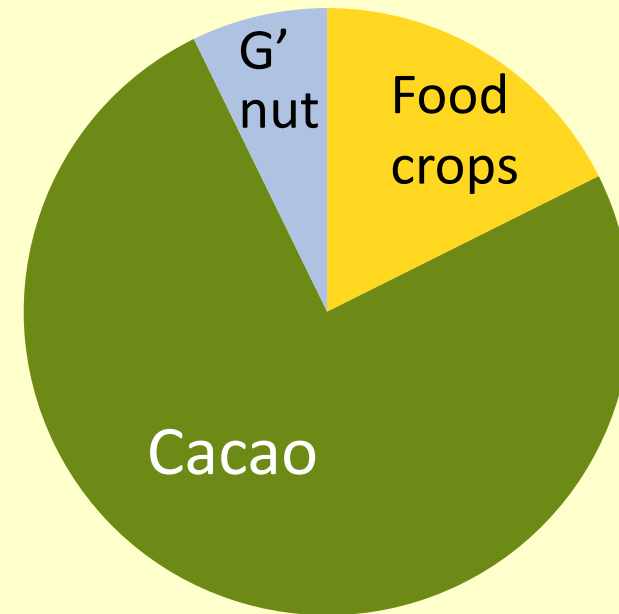
Food crops: 0.4 ha/hh

Cacao: 0.5 ha/hh

G'nut: 0.2 ha/hh

2005

(20 households, 45 fields)



Food crops: 0.4 ha/hh

Cacao: **1.5** ha/hh

G'nut: 0.1 ha/hh

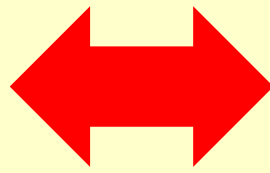
Plantain and Cacao



Expansion of cacao production leads little problem for Bangando, because plantains grow fairly well in cacao fields.

General Perspective of Cacao Agroforest Studies

Shifting cultivation
Deforestation



Cacao agroforestry
Reforestation



Shifting cultivation



Cacao production



Shifting cultivation

Cacao production

Musanga forest

Cacao agroforest

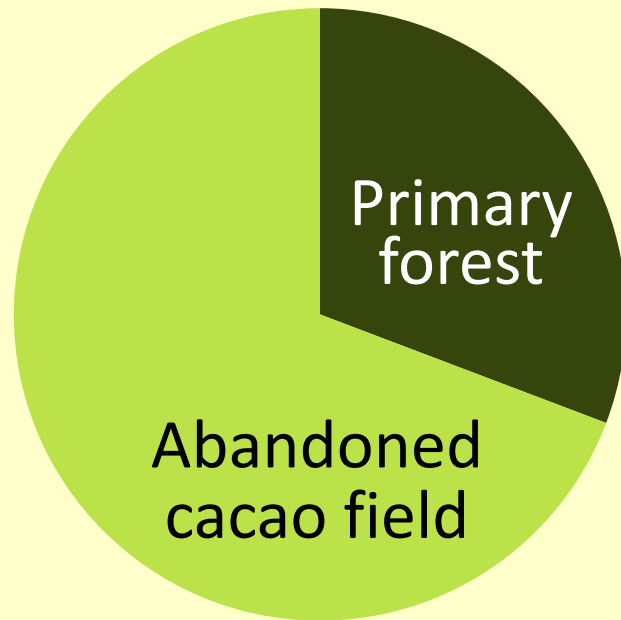
Food production

Clearing

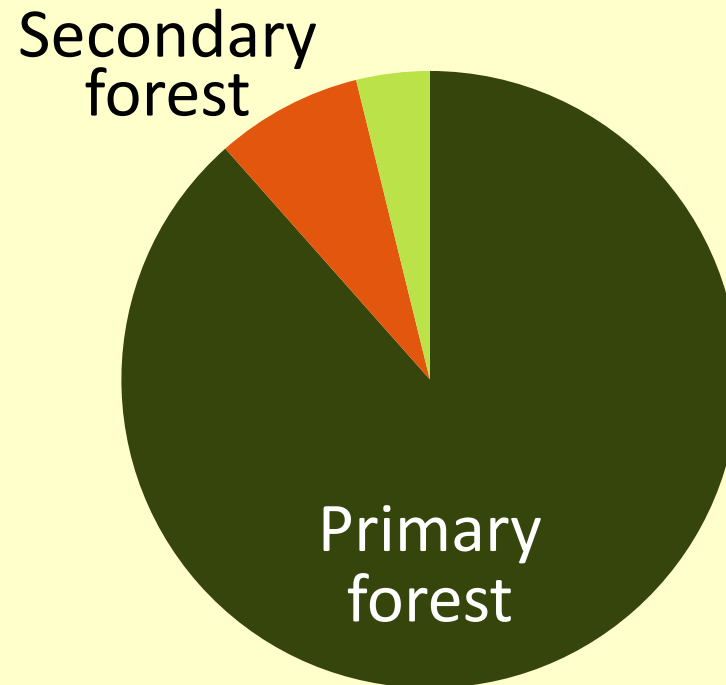
Clearing

Vegetation type cleared for cacao field

2001
(13 fields)

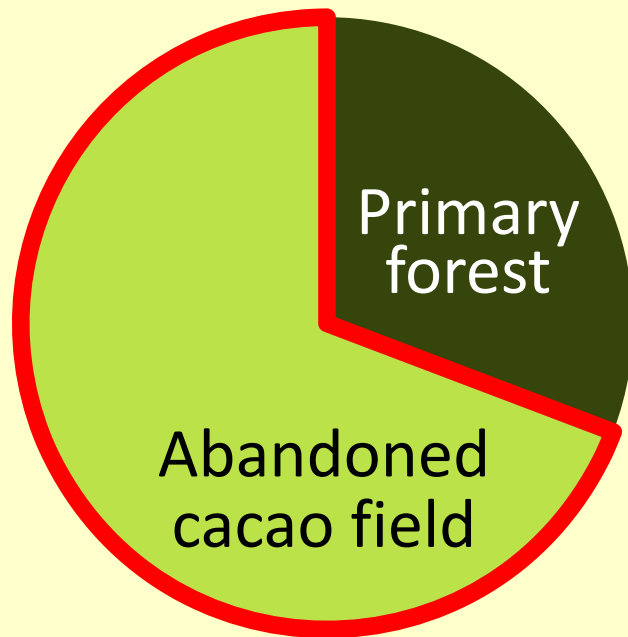


2005
(26 fields)

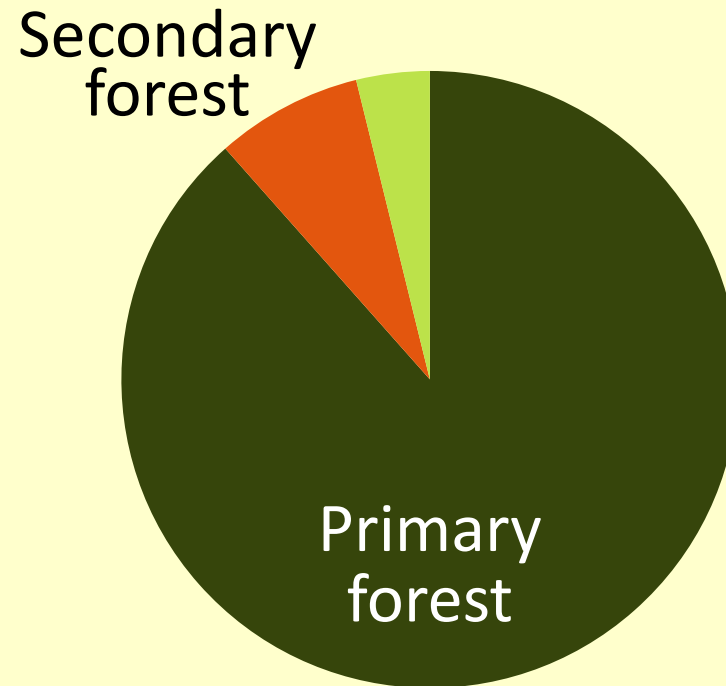


Vegetation type cleared for cacao field

2001
(13 fields)



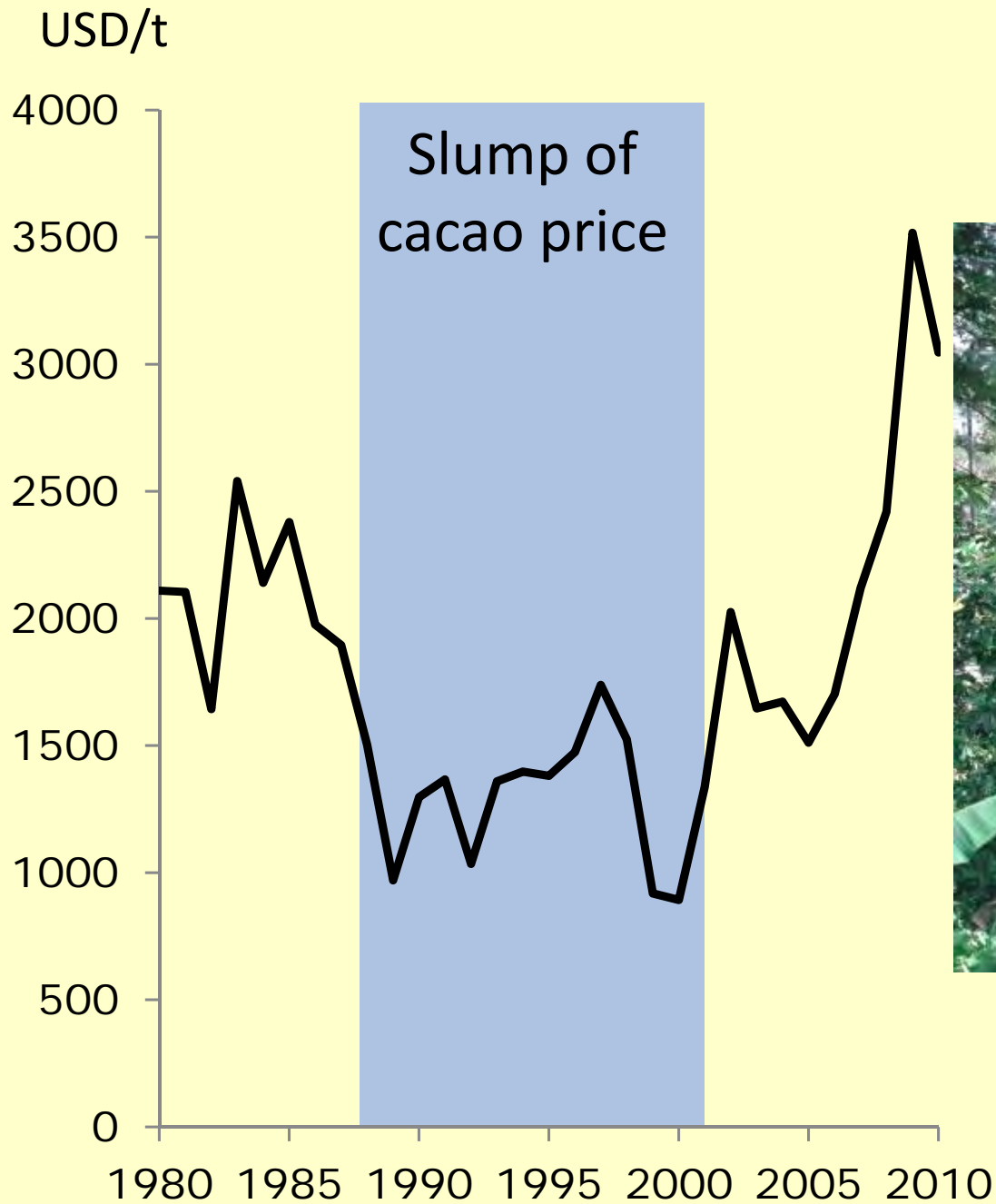
2005
(26 fields)



Why had cacao fields been abandoned?

Fluctuation of cacao price

Source: ICCO



Cacao field
left unmanaged

Shifting cultivation

Cacao production

Musanga forest

Cacao agroforest

Food production

Clearing

Clearing

Shifting cultivation

Cacao production

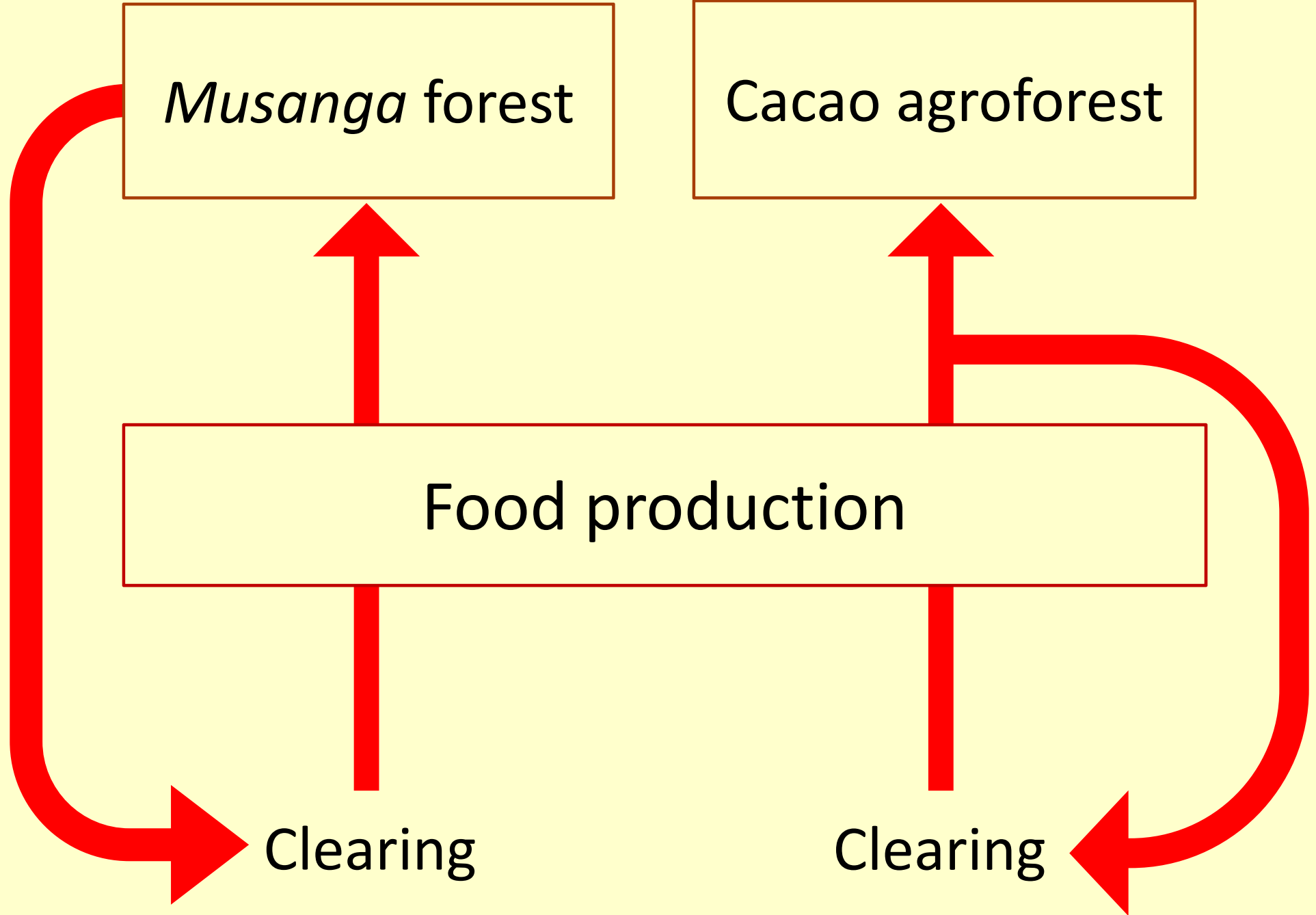
Musanga forest

Cacao agroforest

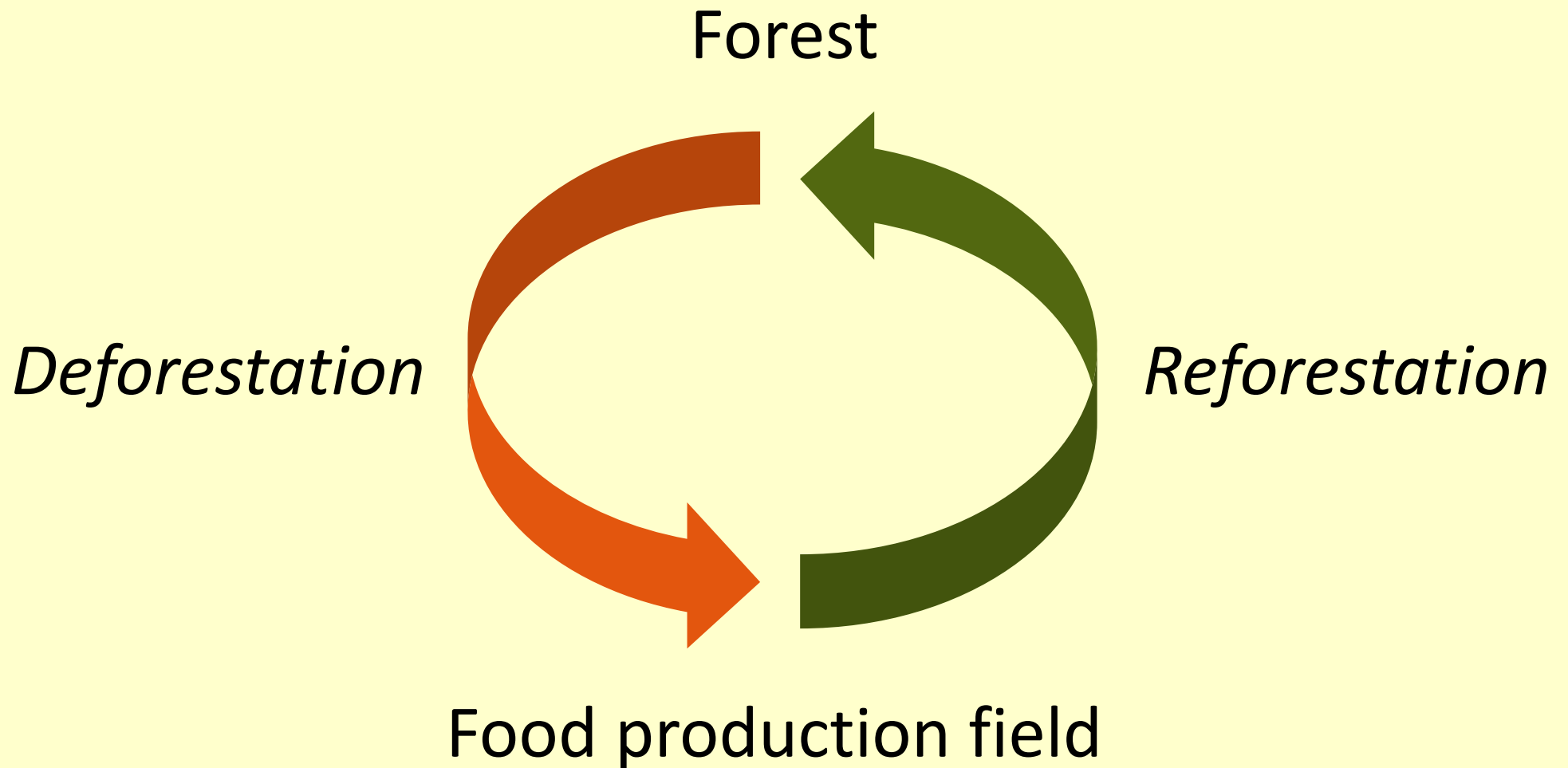
Food production

Clearing

Clearing



Landscape Rotation under Bangando's Agricultural Practice



Thank you for your attention.

