



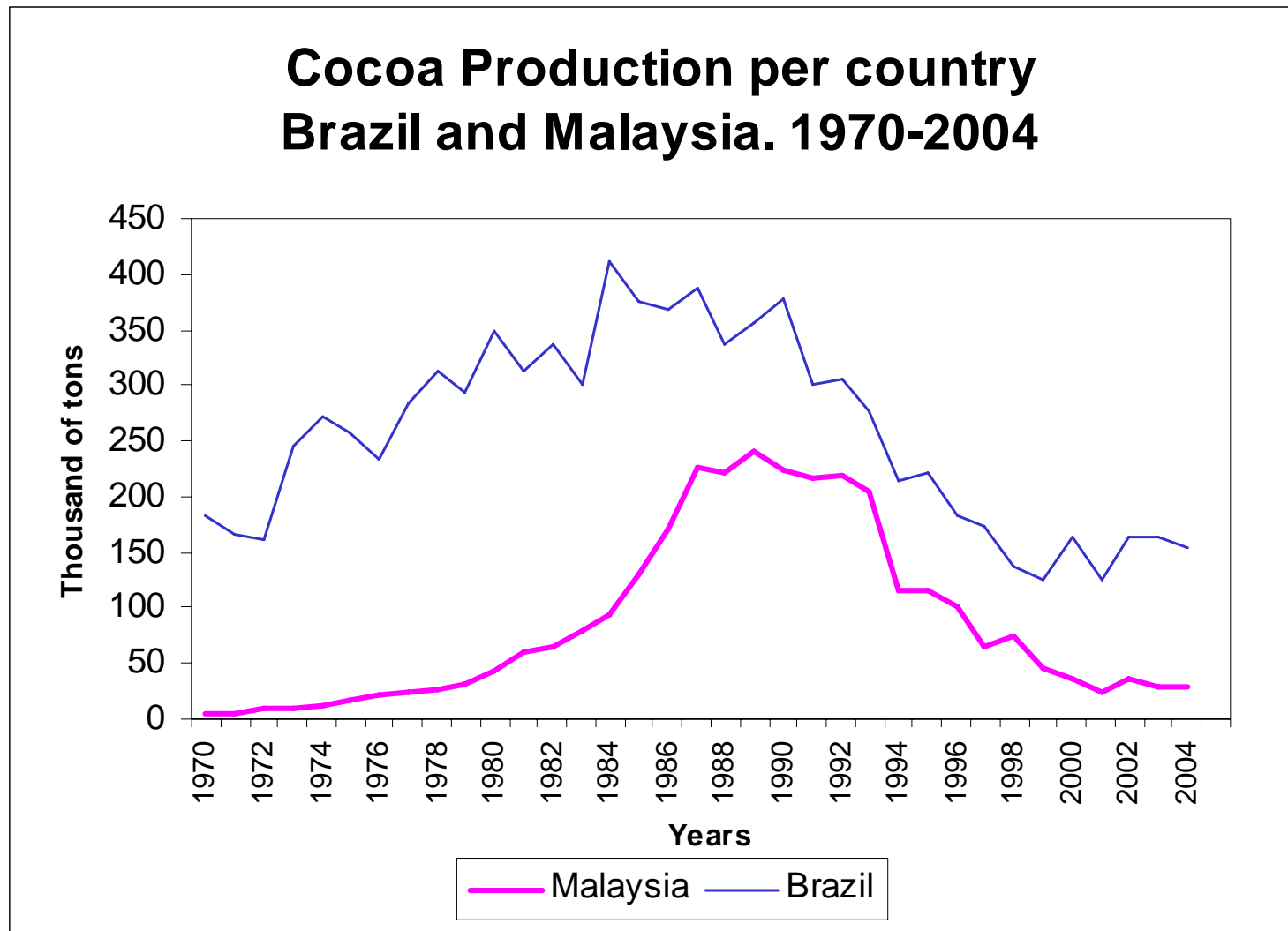
International perspectives on the cocoa sector: expansion or green and double green revolutions?

**Accra, 19 November 2007.
IFPRI - ODI workshop**

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UMR Innovations**

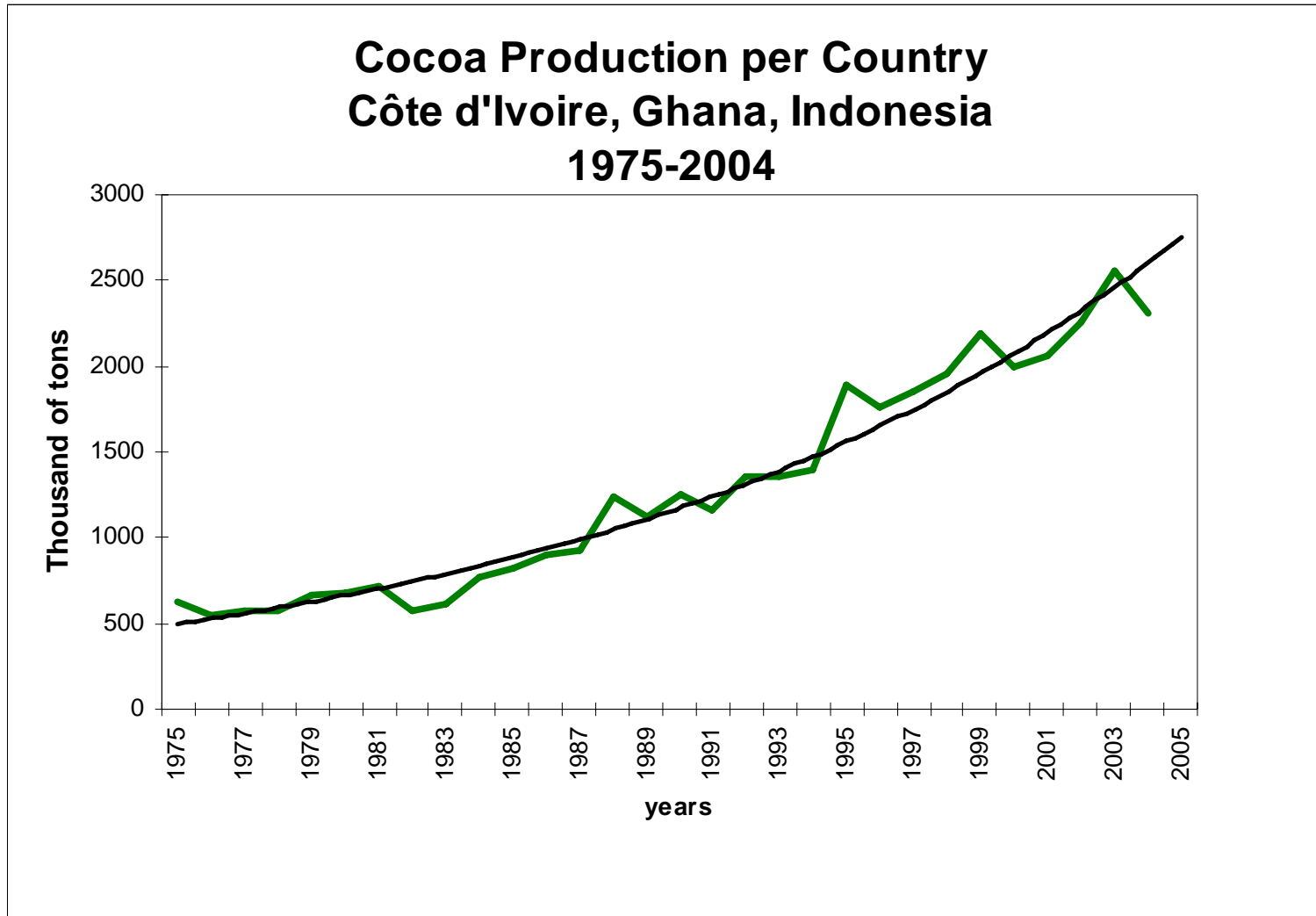


Inefficiency of estates and large farms when prices and revenues collapse





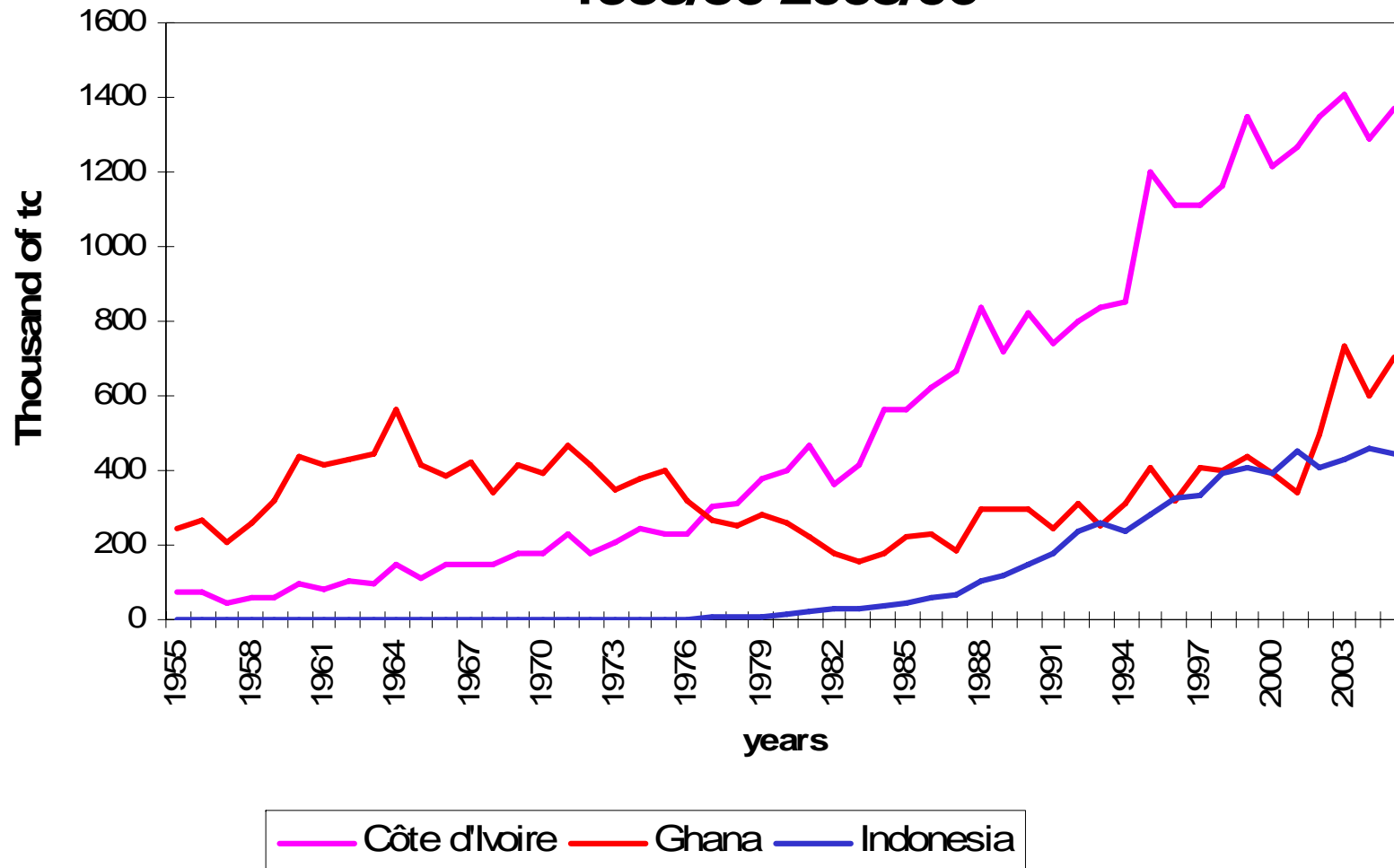
Smallholders' high efficiency and capacity of resistance when prices and revenues collapse





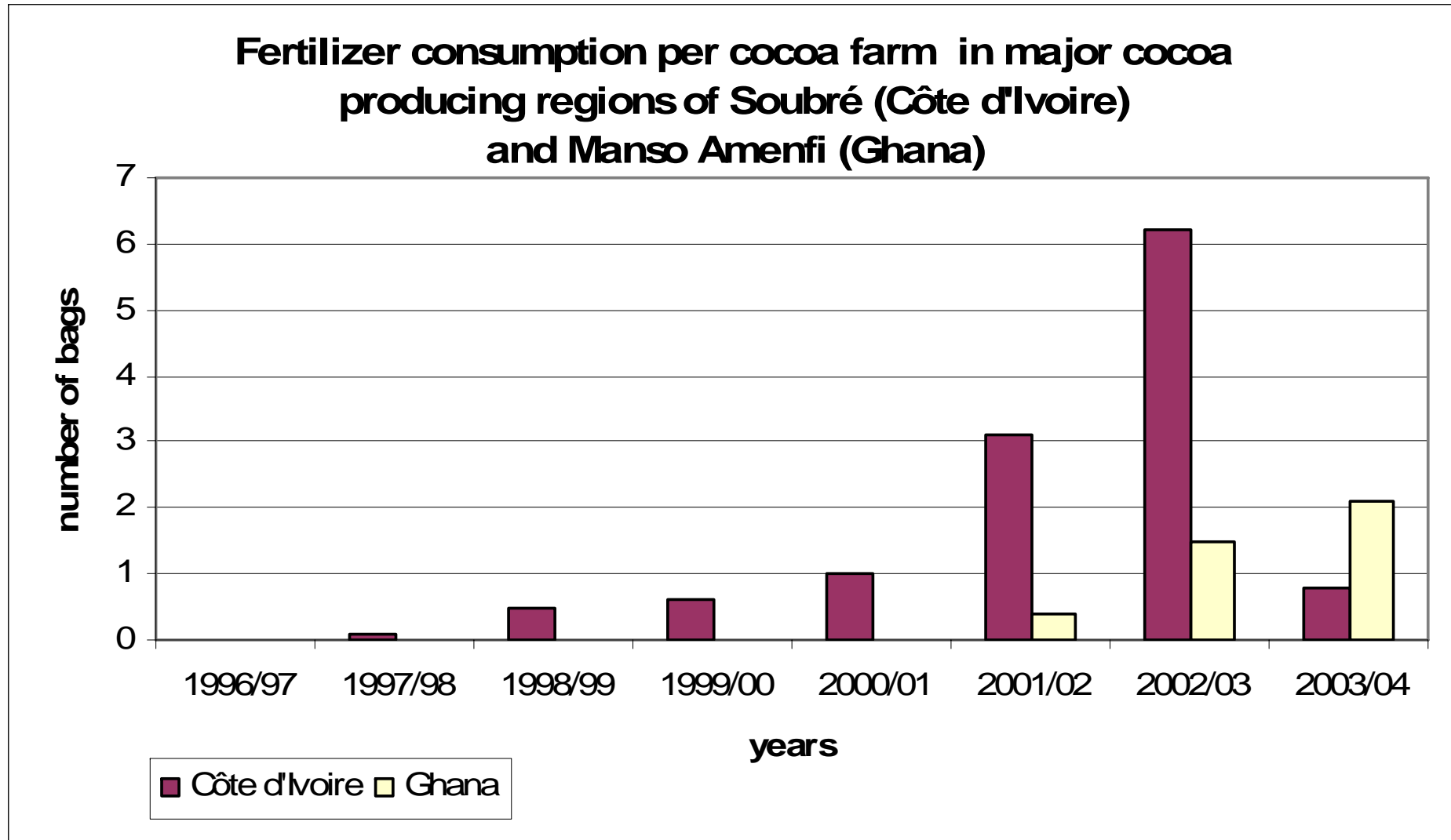
Since 2001, among the three major cocoa producing countries, Ghana displays the most impressive increase in production (compare to the late 1990s)

**Fig.1 Cocoa Production per Country
Côte d'Ivoire, Ghana, Indonesia
1955/56-2005/06**



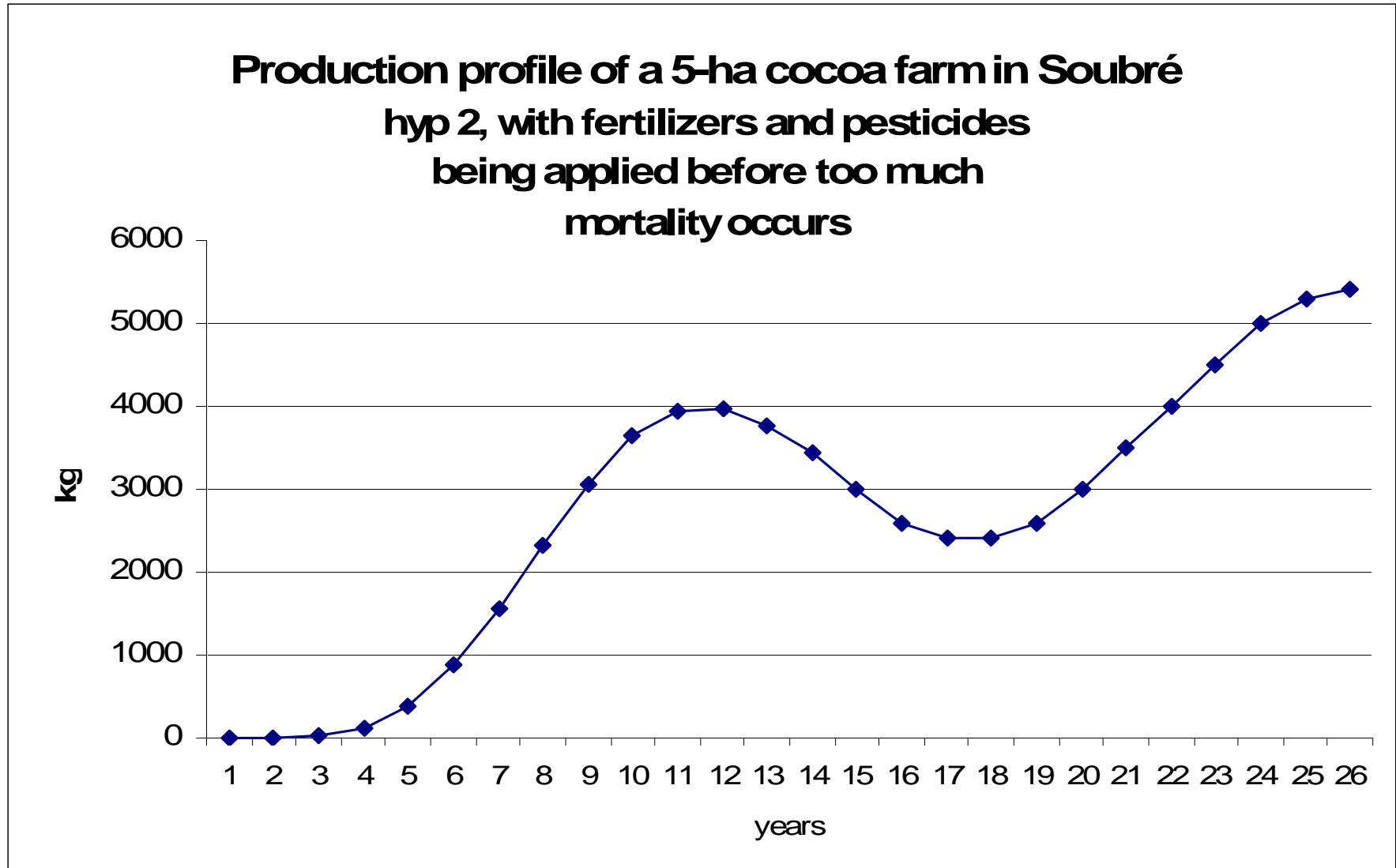


This is partially explained by a beginning of 'green revolution': new planting material, more pesticides, fungicides and a quite recent adoption of fertilizers.





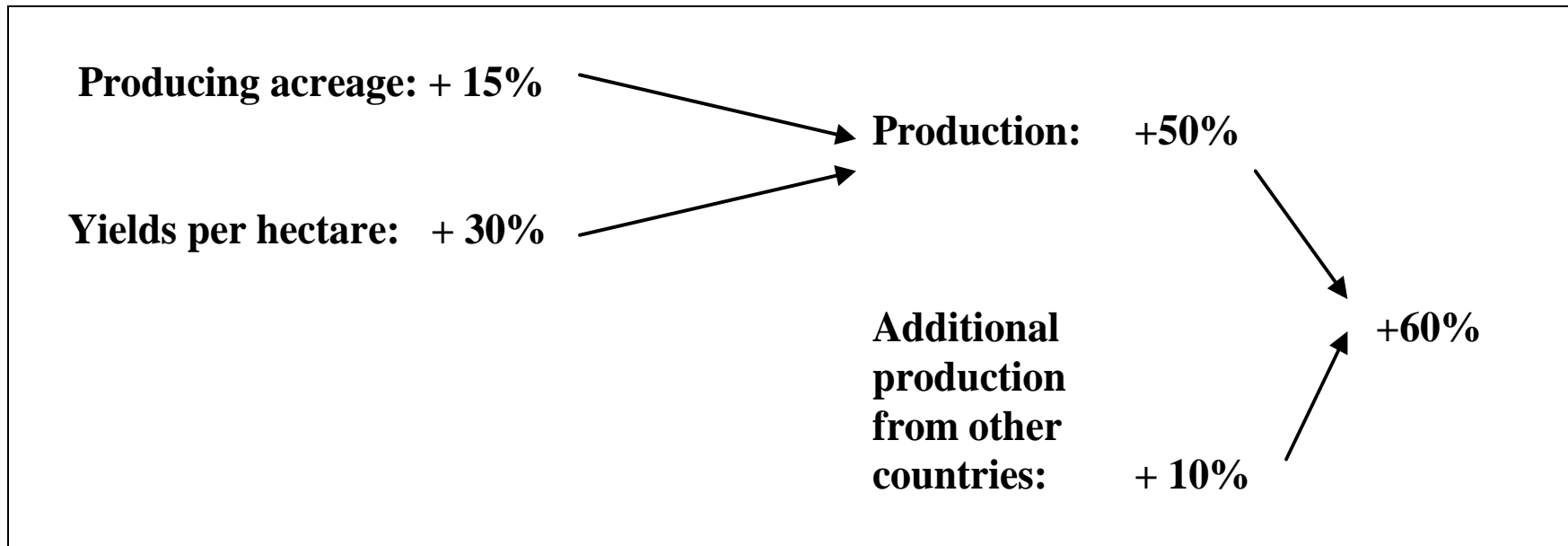
Fertilizers, in particular, have an enormous potential in cocoa farming in West-Africa





The Cocoa boom in Ghana in the 2000s: a combination of expanding production areas and spectacular yield increases (plus some smuggling from Côte d'Ivoire)

Box 1. Expansion and Intensification: estimated breakdown of the increase in cocoa production in Ghana



Sources: CIRAD Survey, 2007.



Regular and consistent cocoa yield increase in Ghana in the 2000s

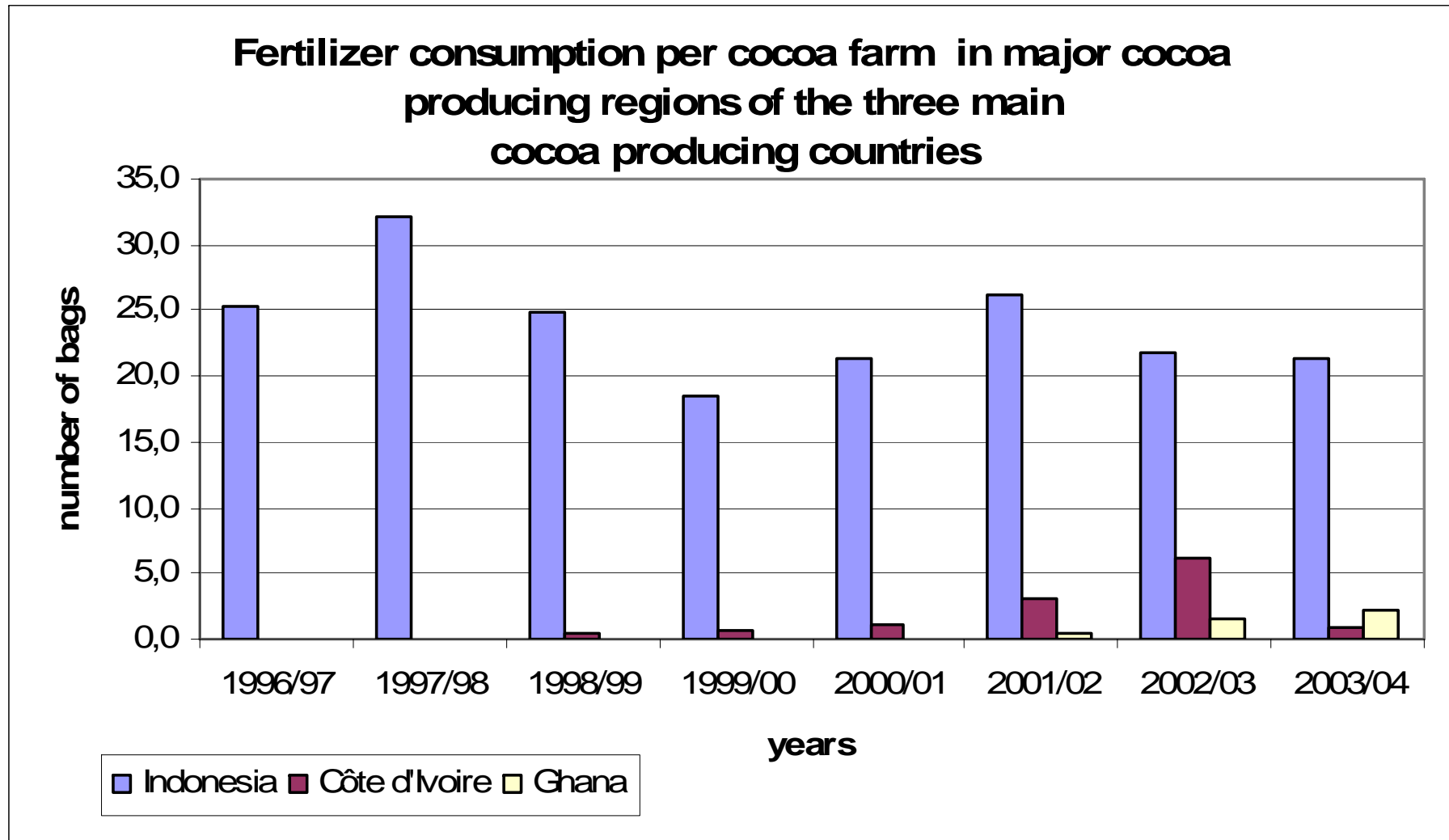
Table 15. Changes in cocoa yields per hectare (with the hypothesis of one pole equivalent to 0.90 acre)

	(a) 2001/02	(b) 2002/03	(c) 2003/04	(d) 2004/05	(e) 2005/06	(f) 2006/07	(E+f)-(a+b) / (a+b) (in %)
Eastern Region Kade	158	208	304	272	316	257	57%
Central Region, Hemang	259	266	286	298	319	307	19%
Ashanti Afigya Sekyere	181	187	223	164	192	163	-4%
Brong Ahafo, Dormaa	484	512	562	611	692	719	42%
Wassa Amenfi West (Chichiso Pensanum)	247	265	357	280	383	404	48%
Wassa Amenfi West (Obing)	354	314	325	345	362	366	12%
Aowin Suaman (Samreboi)	430	453	474	480	482	426	3%
Nzema East (Adubrim)	554	517	528	612	697	679	20%
All Increase (n/n-1)	304	324 +7%	369 +14%	367 -1%	424 +16%	417 -2%	34%

Sources: Ruf 2007

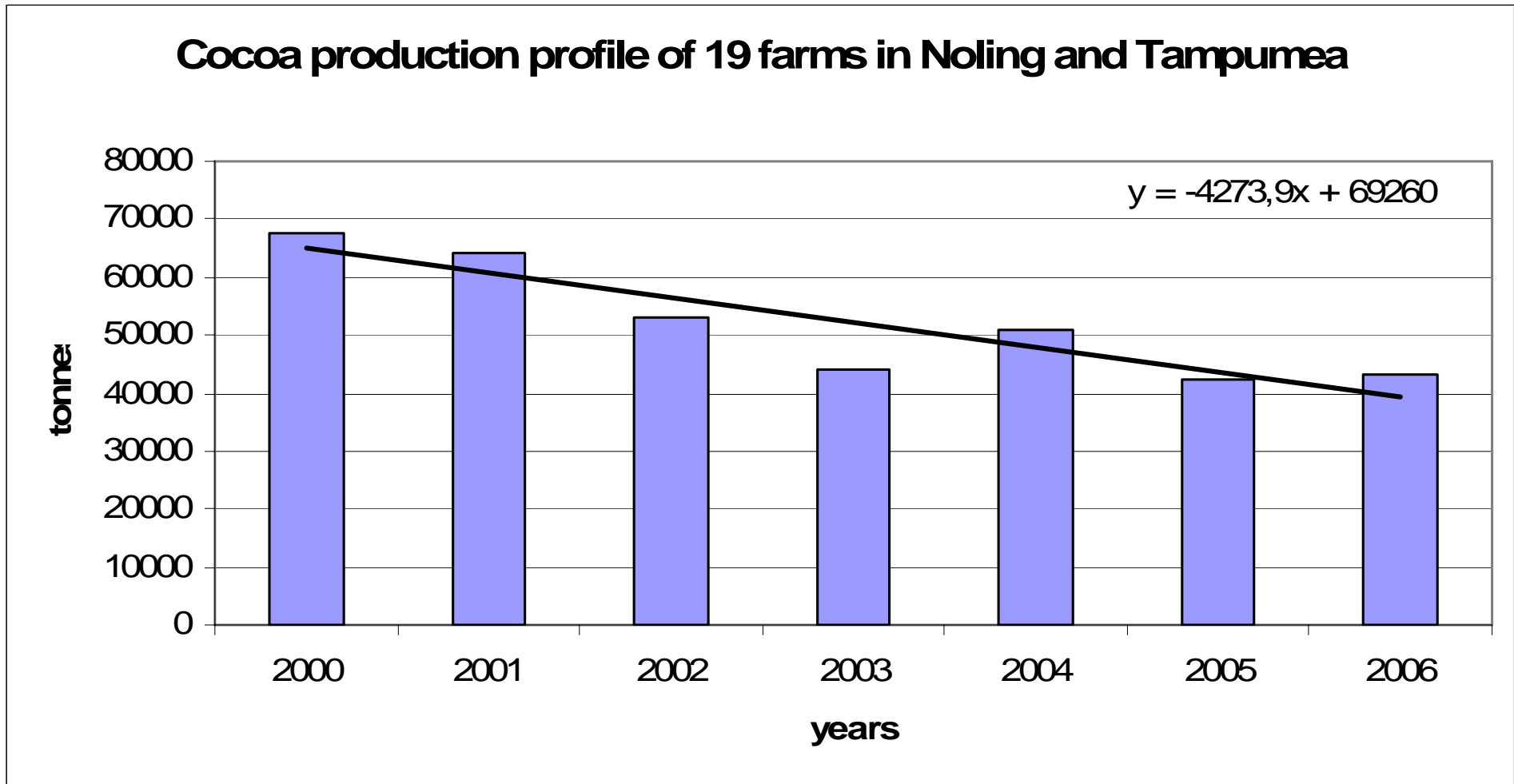


This 'beginning of green revolution' in Ghana must be moderated if compared to the intensive farming systems in Indonesia but their respective input consumption levels may well be much closer in the next years.





Meantime, despite a more modern way of producing cocoa, despite a true green revolution, Indonesia does not escape the sustainability problem



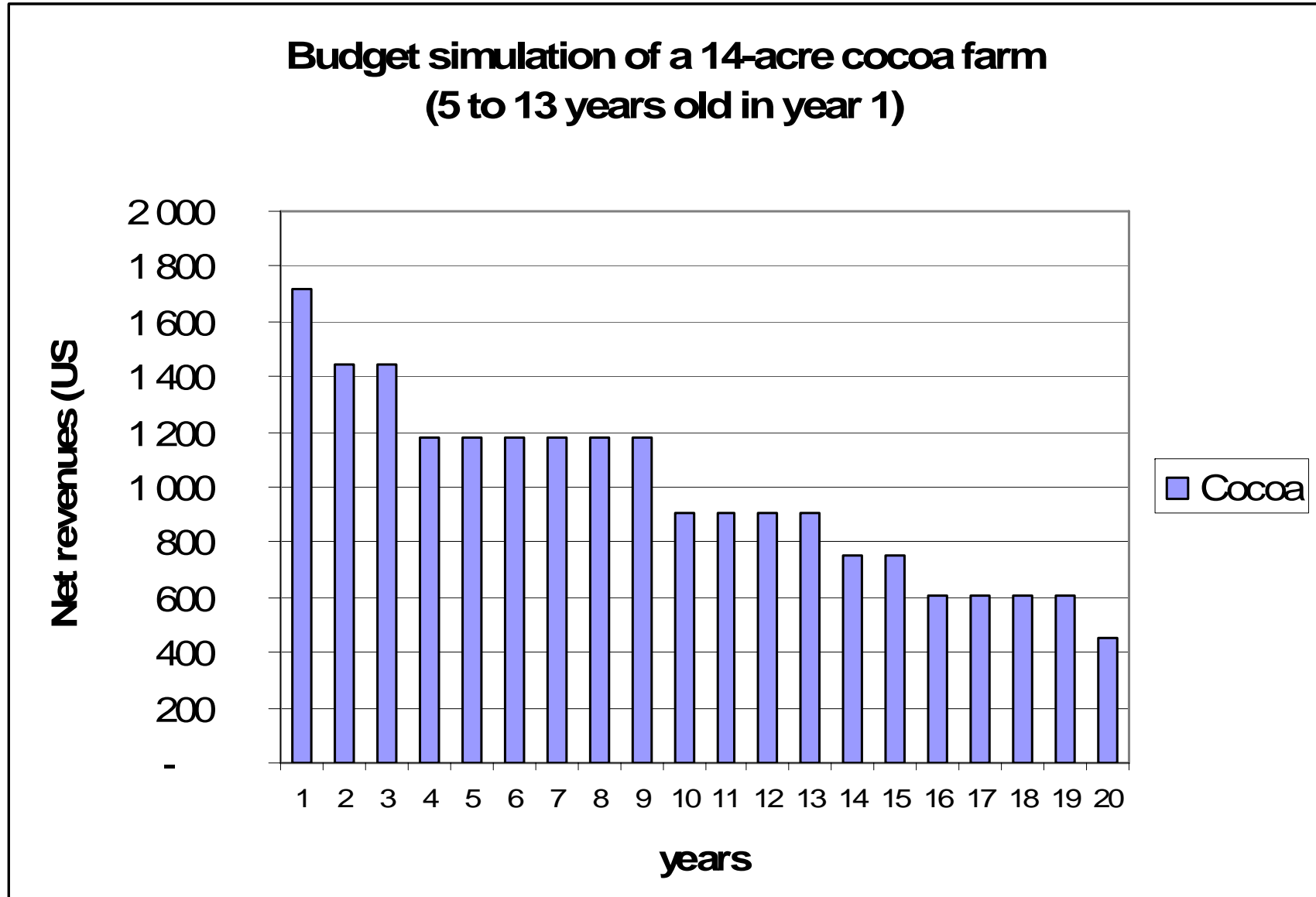


Hence a need to anticipate externalities of green revolutions by 'Double Green' approaches, namely reintroducing biological capital in the systems, especially trees.



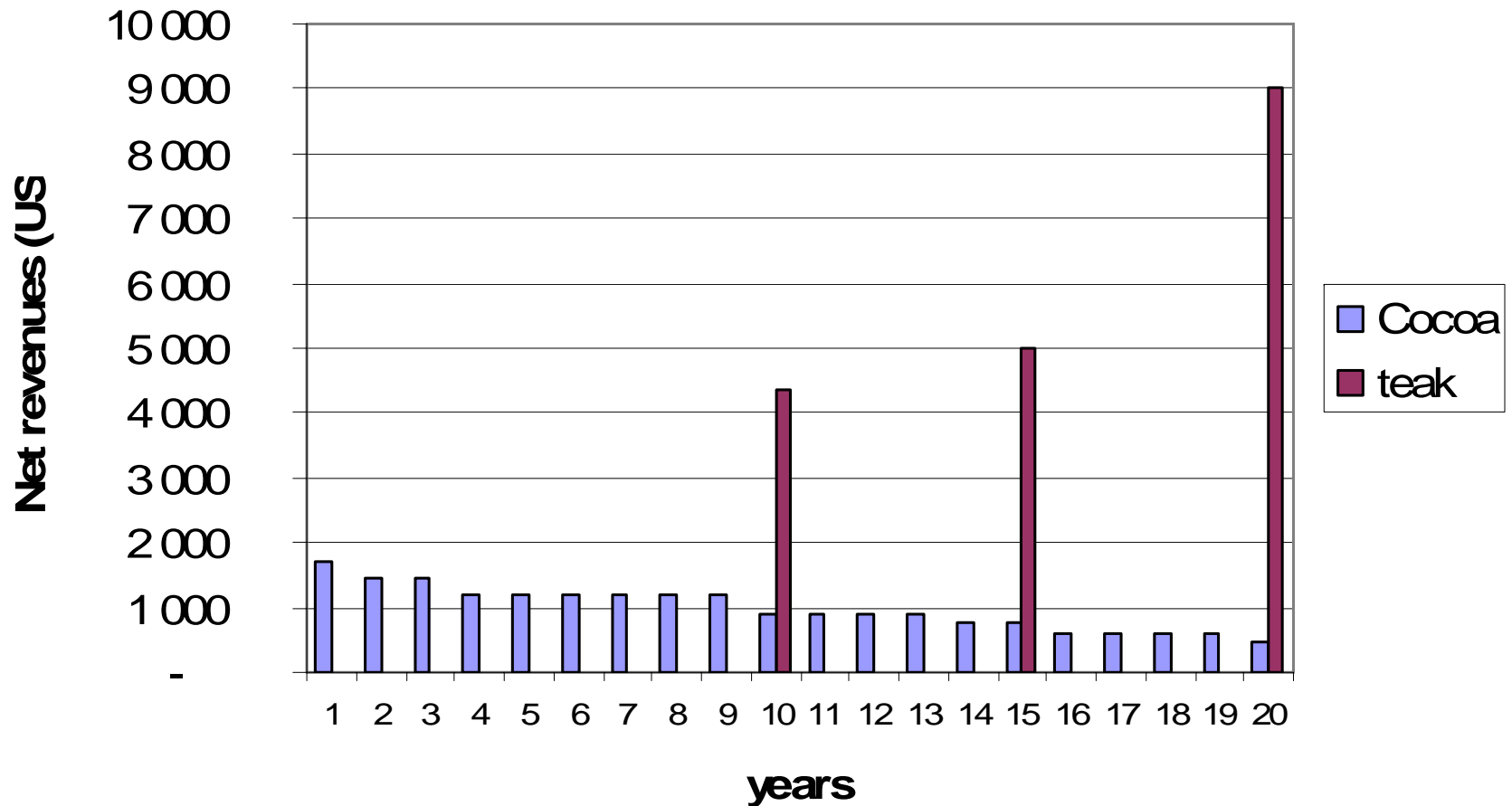


What to do with an ageing and declining cocoa farm?



As seen above, fertilizers can work ... but trees can also generate windfalls

**Budget simulation of a 14-acre cocoa farm
and impact of 2.25 acres of teak**





Conclusion

- 1. Once the forest and 'forest rent' have gone,**
 - modern inputs such as fertilizers become and remain extremely useful and absolutely necessary. The extremely recent adoption of fertilizers in West-Africa is a great achievement in itself
 - but they have to be combined with organic factors, biological capital, in order to progressively rebuild a 'post-forest rent', a key factor in sustainability.
- 2. Smallholders are certainly brighter than estates to respond to this challenge**
- 3. Eventually, due to demographic pressure and innovations, and if taxation is not too heavy in West-Africa, we will probably see more convergence among cocoa smallholders' performances in the three continents in the near future**