

THE DYNAMICS OF THE MARKET FOR RHINO HORN & THE IMPLICATIONS OF DIFFERENT POLICY CHOICES



A Presentation by Mavuso
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SOME POINTS OF DEPARTURE

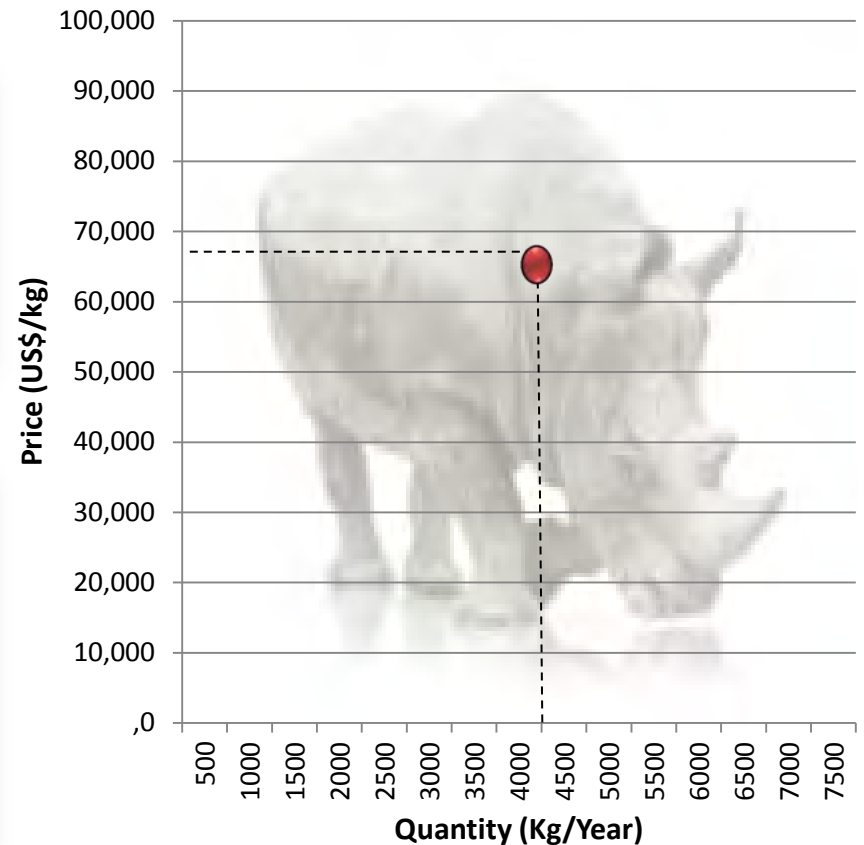
1. There **IS** a market for rhino products. This has a number of implications:
 - i. Declaring the trade in rhino products “illegal” under CITES has not closed the market down.
 - ii. A product’s illegal status does not negate the laws of supply and demand. But it makes it harder to analyse and study a market when the product concerned cannot be legally traded.
 - iii. From the perspective of the participants in the market (suppliers and consumers) rhino products are not innately different from many other products: they can be supplied profitably and satisfy particular wants or needs.
2. A functioning market is a dynamic entity. We cannot know everything about it and be able to predict with certainty how it will respond under all circumstances. This is **NOT** an excuse to do nothing.
3. The market for rhino products is closely related to the market for live rhinos. De-coupling risks damage to one or both markets.

FACTORS AFFECTING THE DEMAND FOR RHINO HORN

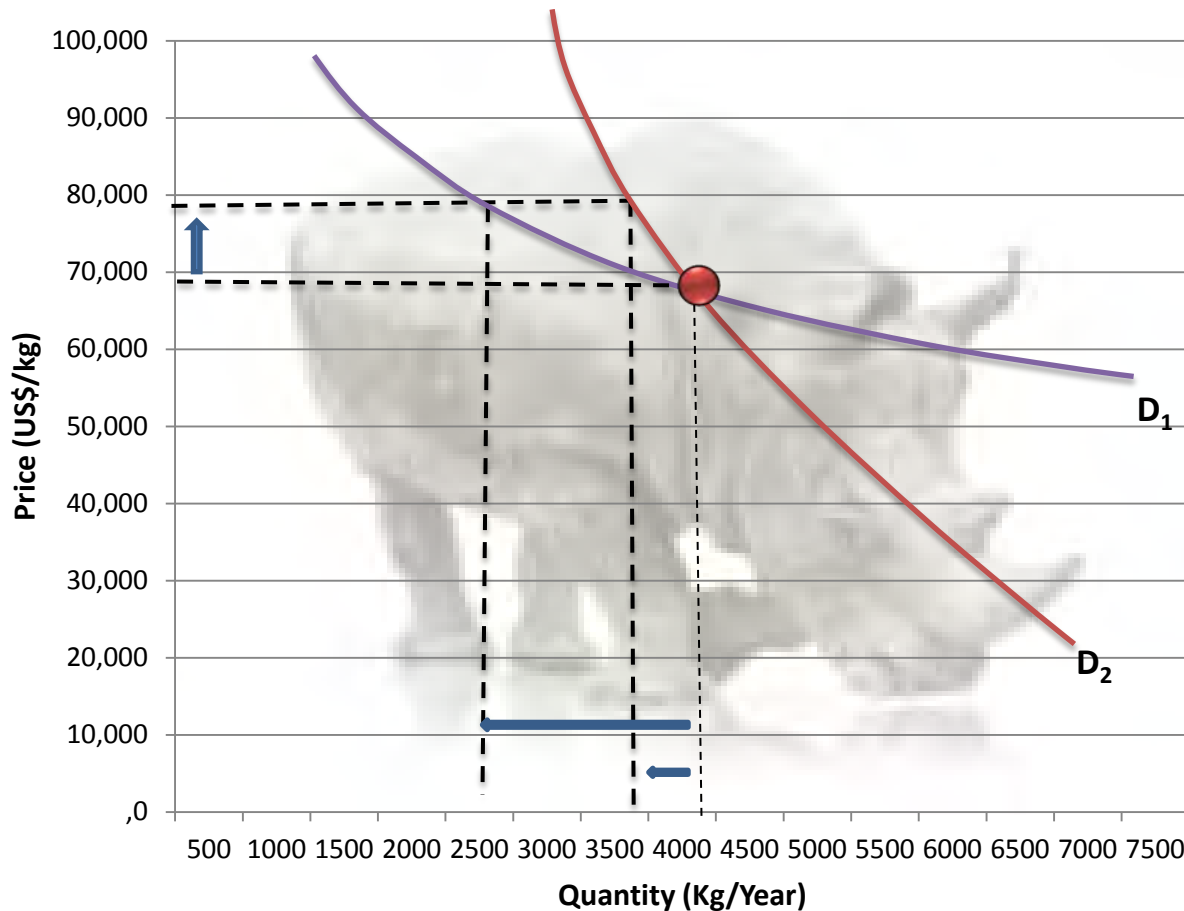
Start with something that we may have a chance of knowing (or finding out!)

Price of horn in final markets = EQUILIBRIUM PRICE

Quantity of rhino poached x Average mass of poached horns = EQUILIBRIUM QUANTITY



Try to estimate other points (P-Q combinations) along the demand function

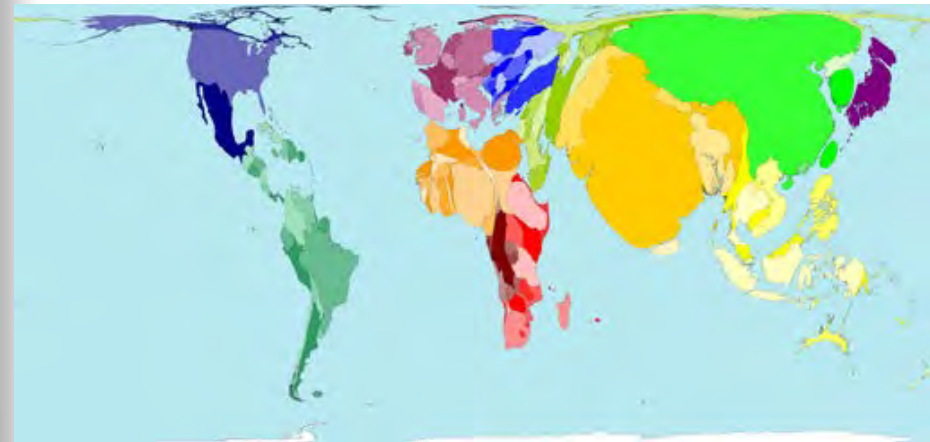


Price elasticity around the current equilibrium price is a **KEY VARIABLE** in any model of the market.

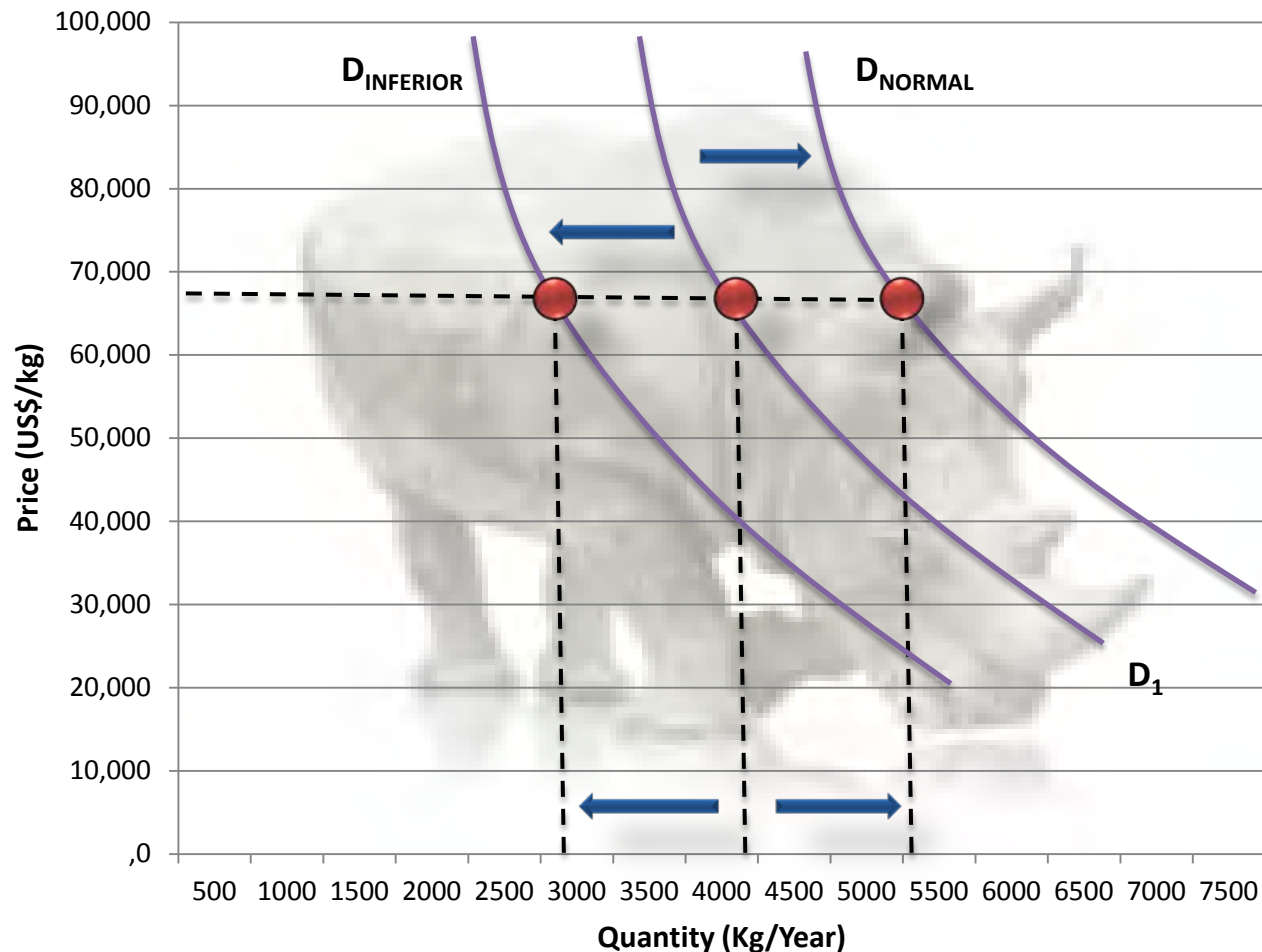
Identify the main factors that will cause demand to shift – i.e. that change demand

CHANGES IN:

- Incomes of consumers
- Their tastes & preferences
- The number of consumers (Population)
- Expectations of the security of supply & future prices



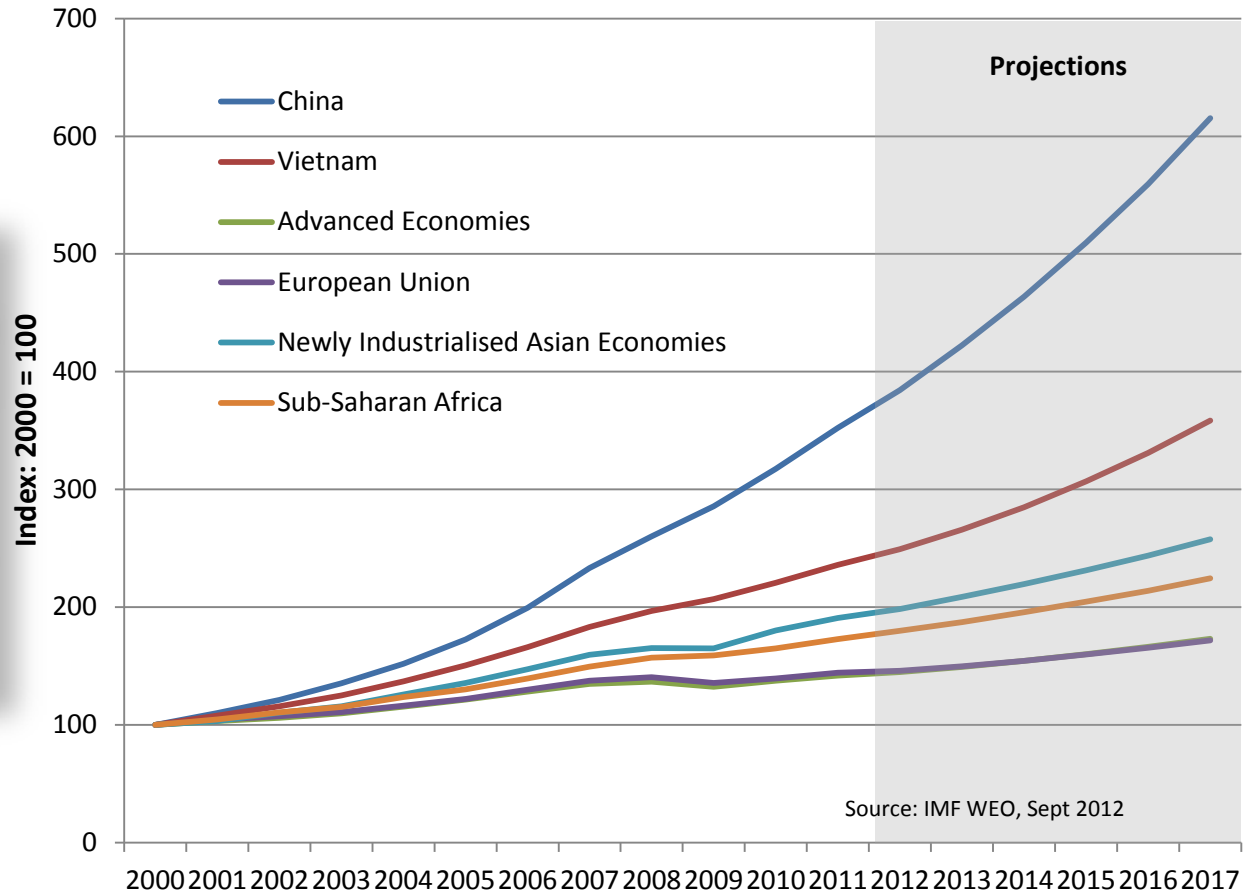
Determine what is likely to happen to the incomes of current (and prospective) consumers



All indications are that the demand for rhino horn is a normal good – i.e. responds “positively” to increases in consumer incomes

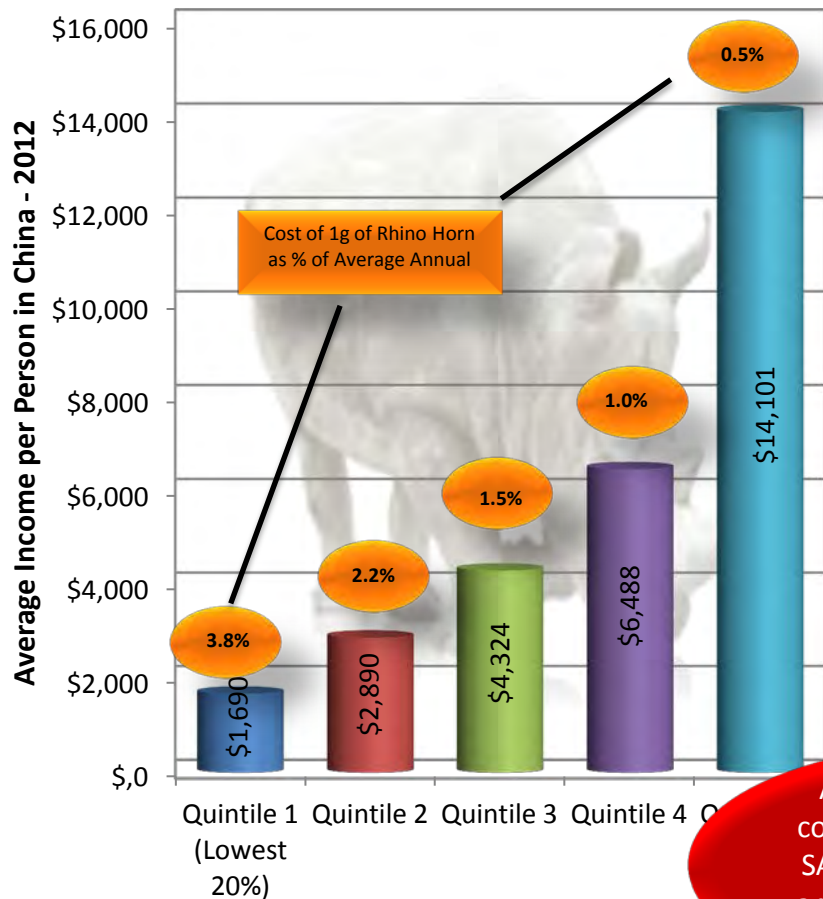
Comparative trends in incomes in consumer & other markets

The major consumer markets of rhino horn have seen substantial increases in average incomes. These are projected to increase over the next five years

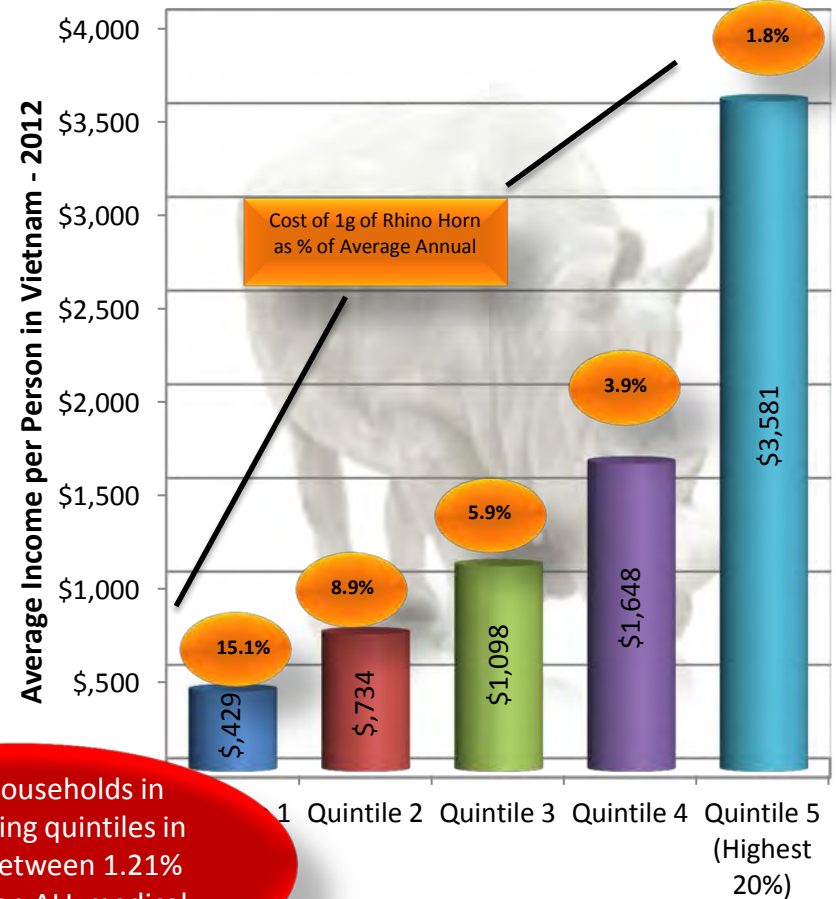


Which consumers can afford real rhino horn?

China



Vietnam



Average households in corresponding quintiles in SA spend between 1.21% and 1.54% on ALL medical expenditure

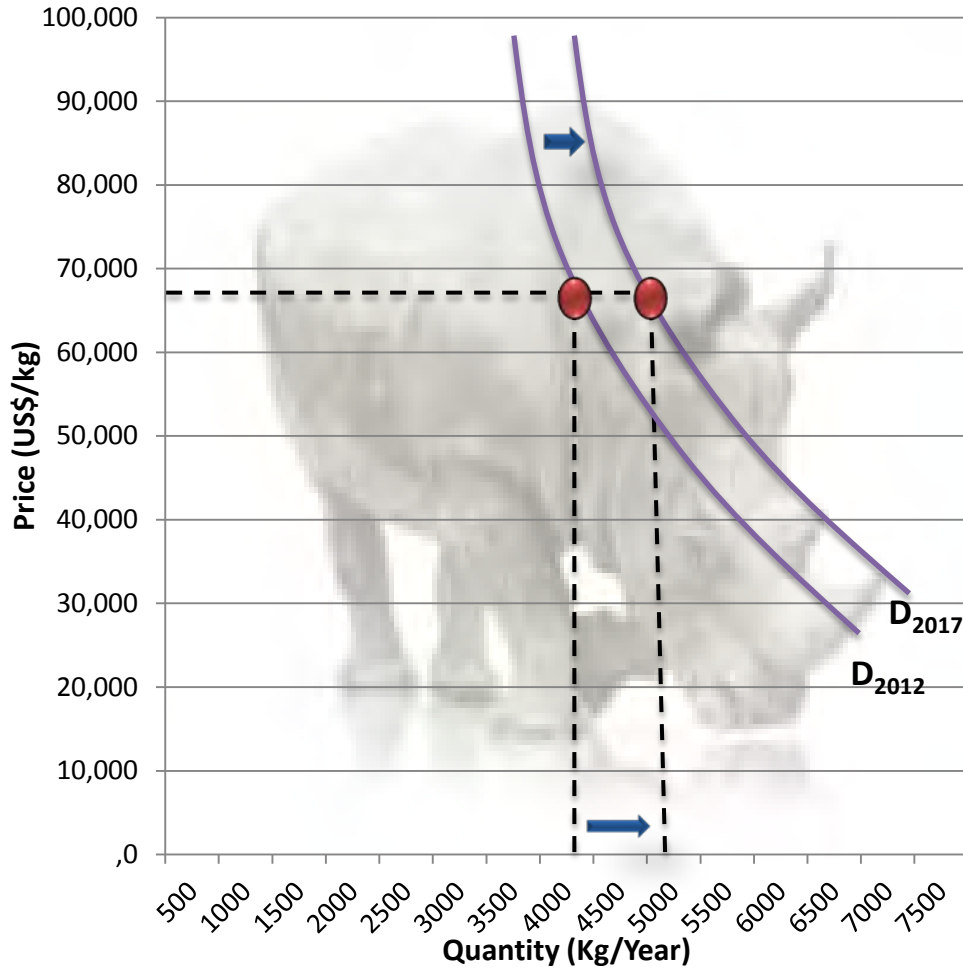
Implications of income growth for the market price of rhino horn

Year	Estimated average annual income in China					Price of rhino horn supported by projected rise in average incomes (US\$/kg)
	Quintile 1 (Lowest 20%)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Highest 20%)	
2012	\$1 690	\$2 890	\$4 324	\$6 488	\$14 101	\$65 000
2013	\$1 847	\$3 159	\$4 725	\$7 091	\$15 409	\$71 033
2014	\$2 019	\$3 452	\$5 165	\$7 750	\$16 843	\$77 643
2015	\$2 204	\$3 770	\$5 639	\$8 463	\$18 392	\$84 782
2016	\$2 404	\$4 112	\$6 151	\$9 231	\$20 061	\$92 476
2017	\$2 622	\$4 485	\$6 709	\$10 068	\$21 880	\$100 860

Income elasticity is another key variable for modeling

Year	Estimated average annual income in Vietnam					Price of rhino horn supported by projected rise in average incomes (US\$/kg)
	Quintile 1 (Lowest 20%)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (Highest 20%)	
2012	\$429	\$734	\$1 098	\$1 648	\$3 581	\$65 000
2013	\$463	\$792	\$1 185	\$1 779	\$3 866	\$70 163
2014	\$500	\$855	\$1 279	\$1 919	\$4 171	\$75 702
2015	\$536	\$917	\$1 372	\$2 060	\$4 476	\$81 239
2016	\$575	\$983	\$1 470	\$2 206	\$4 794	\$87 011
2017	\$616	\$1 053	\$1 575	\$2 364	\$5 138	\$93 252

Role of population shifts in (current) major consumer markets

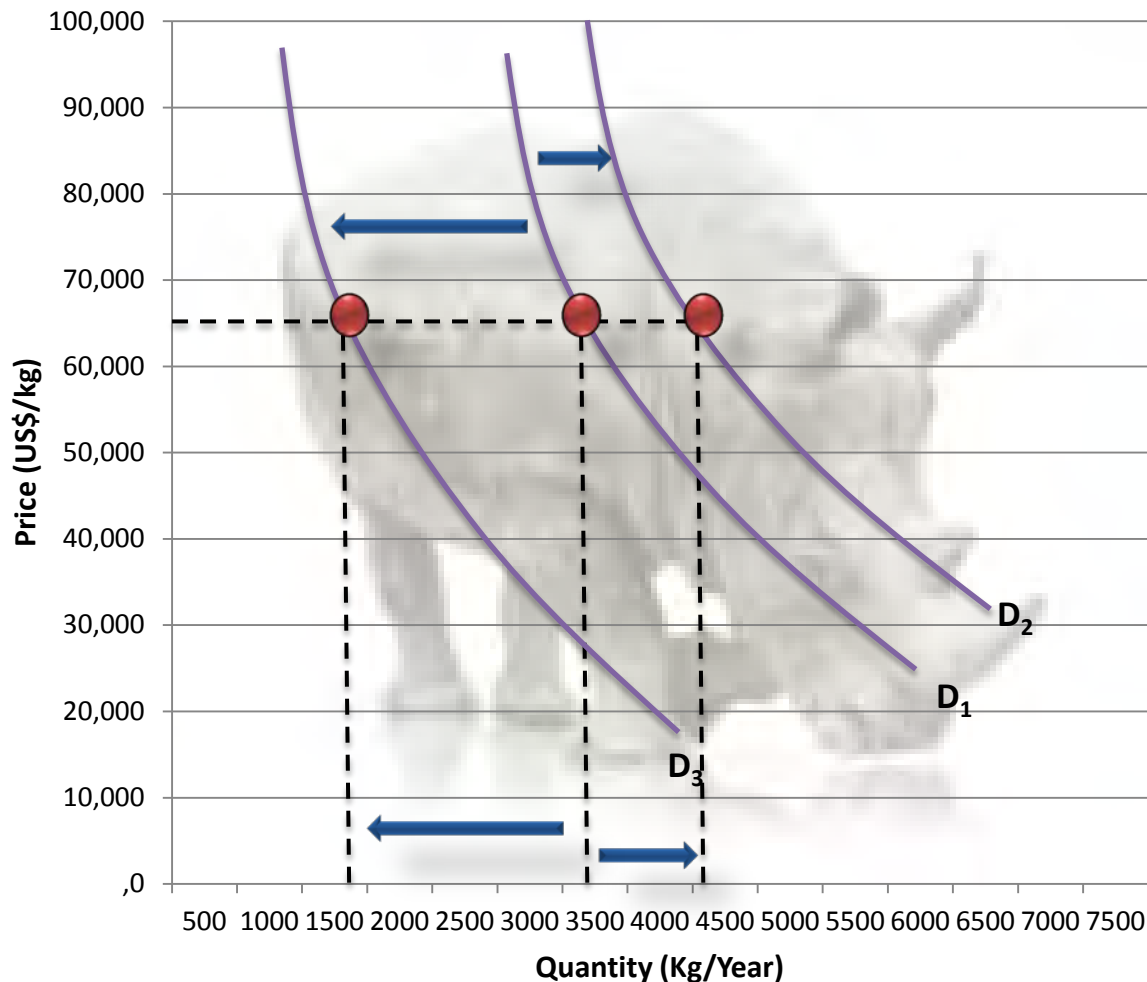


Year	Population (Millions)			Net Additional Population – Relative to 2012 (Millions)	Net Additional Rhino Horn Consumers – Relative to 2012	Additional Kg of Horn Demanded Due to Population Increase – Relative to 2012
	China	Vietnam	Total			
2012	1355	90	1445			
2013	1362	91	1453	8	19 650	19.6
2014	1368	93	1461	16	39 415	39.4
2015	1375	94	1469	24	59 295	59.3
2016	1382	95	1477	32	79 300	79.3
2017	1389	96	1485	40	99 418	99.4

May appear relatively benign in overall scheme of things, but constitutes an on-going and potentially expanding consumer base. Should be a focus of demand management efforts.

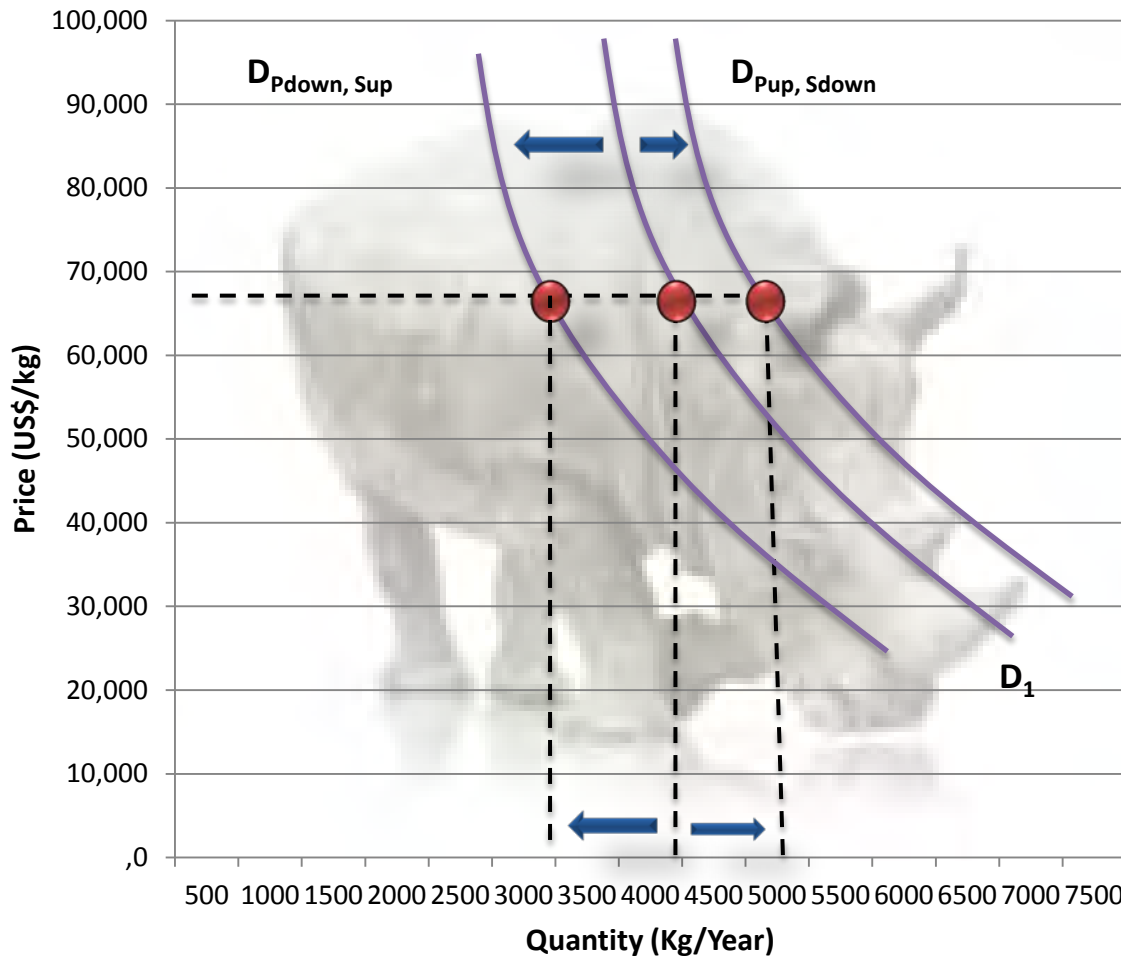
Should not ignore other potential new markets

The effect of changing preferences on horn consumption



Demand reduction is a key challenge, and probably won't be easy. Need to target "easier win" niches (youth, new uses, possible new markets). Needs to be pre-emptive.

Role of expectations of price and supply changes on demand



Expectations tend to be self-fulfilling. Provides basis for speculative demand, and stock-piling and can lead to a race to the bottom.

Expectations of the legalisation of trade could lead to reduction in demand in the short term.

KEY FACTORS IN THE SUPPLY OF RHINO HORN

Main factors that will cause supply to shift – i.e. a change in supply

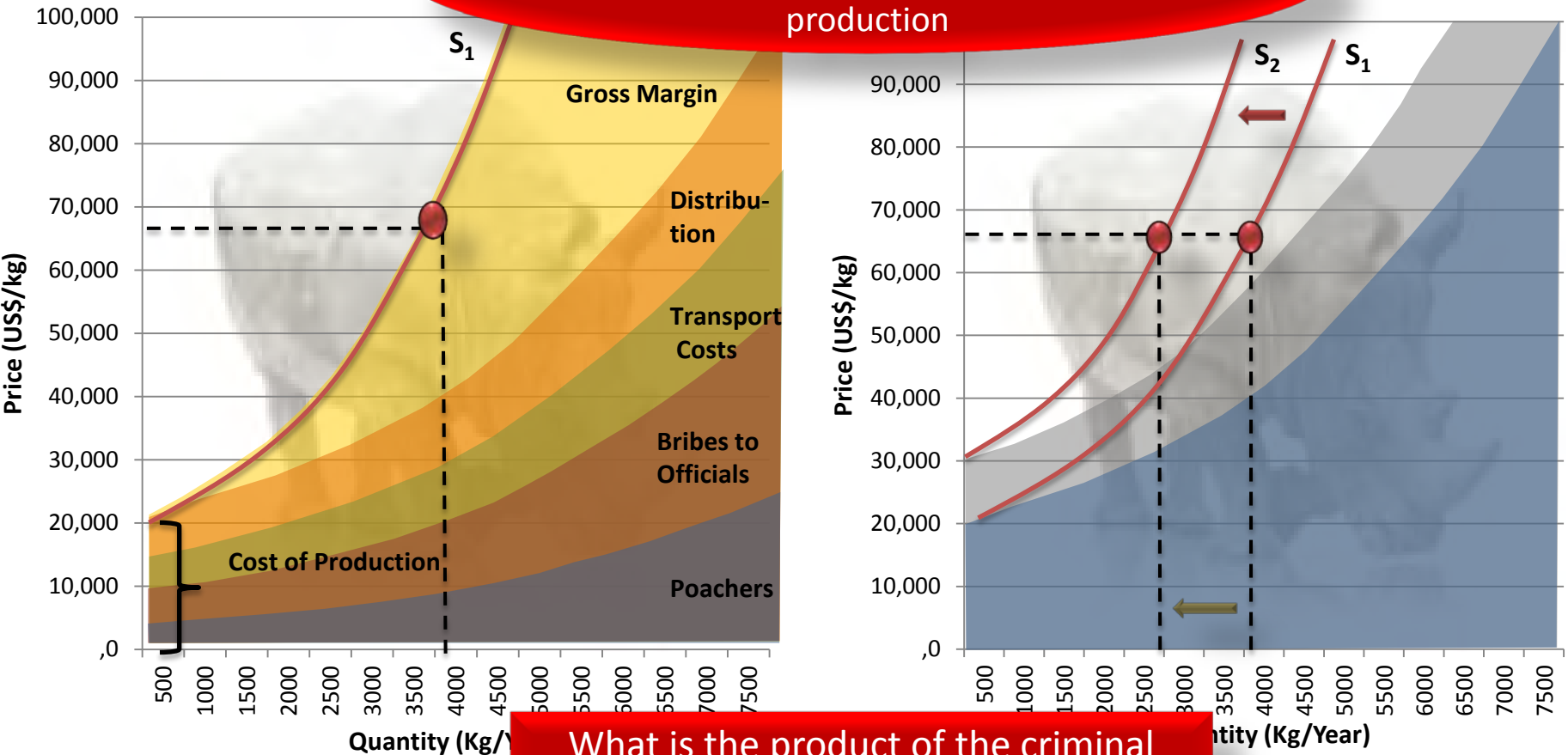
CHANGES IN:

- Costs of production
- The number of suppliers
- The price of related products in production
- Expectations of future market prices



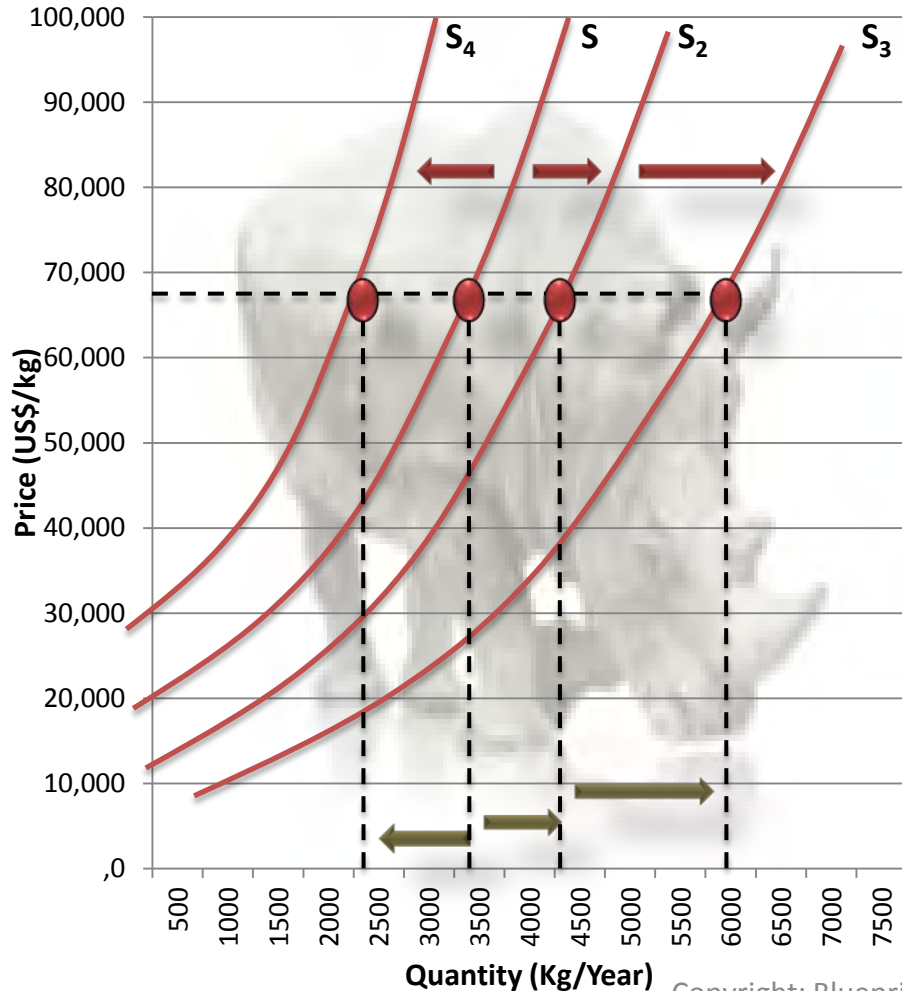
The impact of changes in the costs of production on the supply of rhino horn

More effective anti-poaching, anti-corruption measures raise costs of production



What is the product of the criminal syndicates?

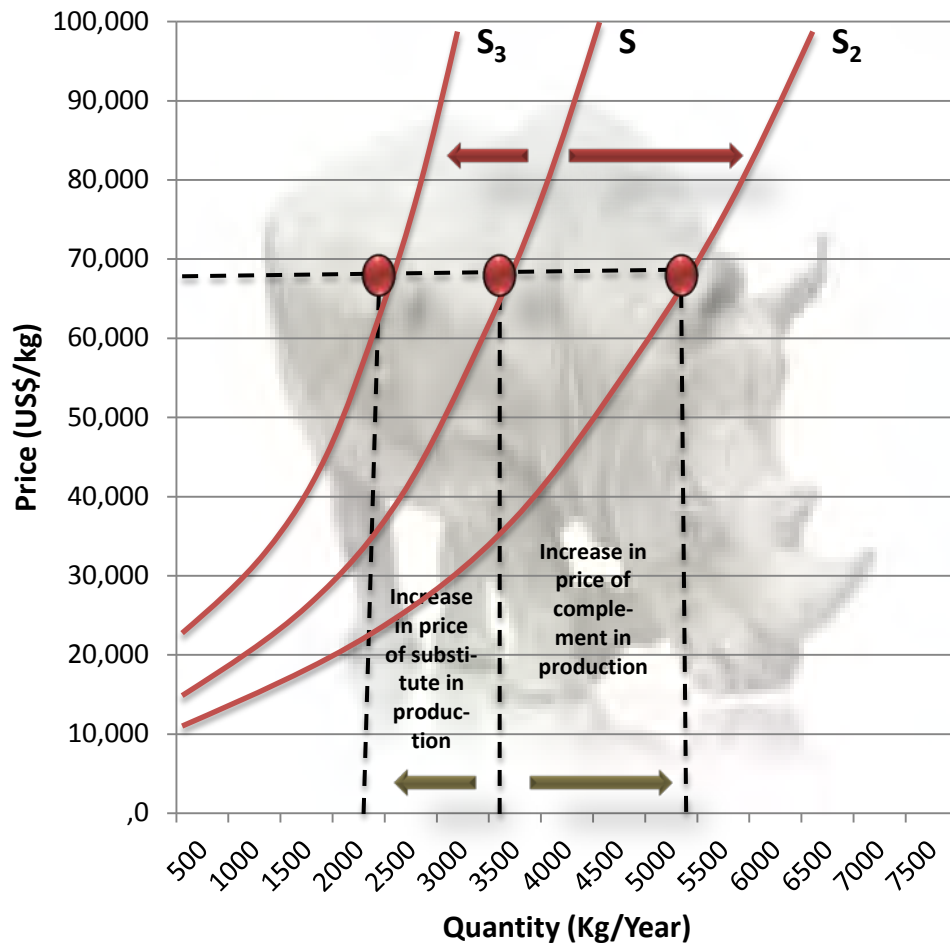
The impact of changes in the number of suppliers on the market for rhino horn



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Number of syndicates operating likely to be fairly small – so entry or exit of new suppliers could result in pronounced shifts in supply curve.
Danger that new syndicates could be associated with new markets and uses (need to innovate to secure market share).
Legal supply would be similar to entry of a new supplier

The impact of changes in prices of alternatives in production

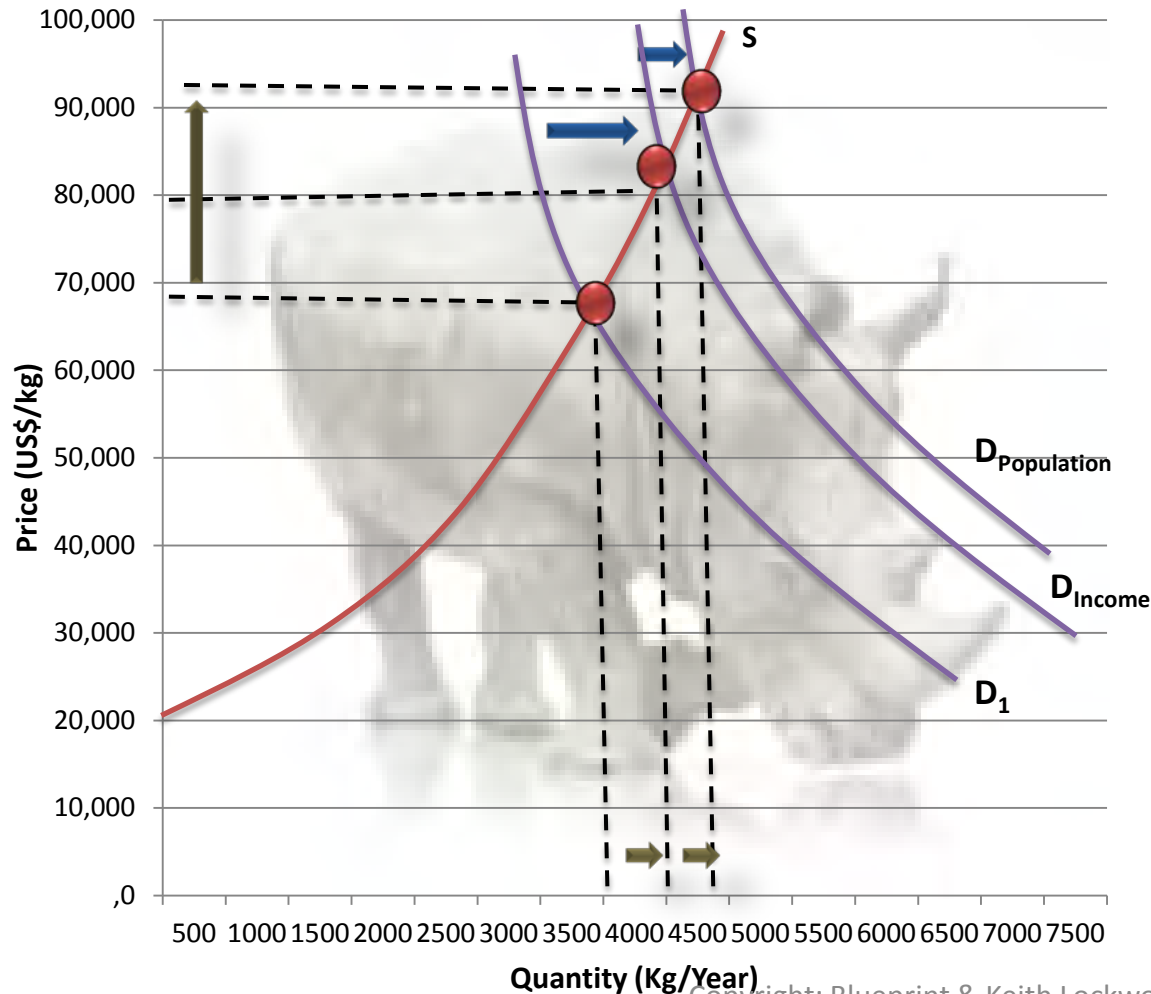


If rhino owners/custodians can benefit from living AND dead rhino, then an increase in the price of dead rhino will lead to an increase in the “supply” of live rhino.

If price/profitability of rhino horn falls, syndicates could increase proportions of other product that are relatively more profitable that are moved through supply chain (other animal products, drugs, people?)

PUTTING DEMAND AND SUPPLY TOGETHER IN A MARKET

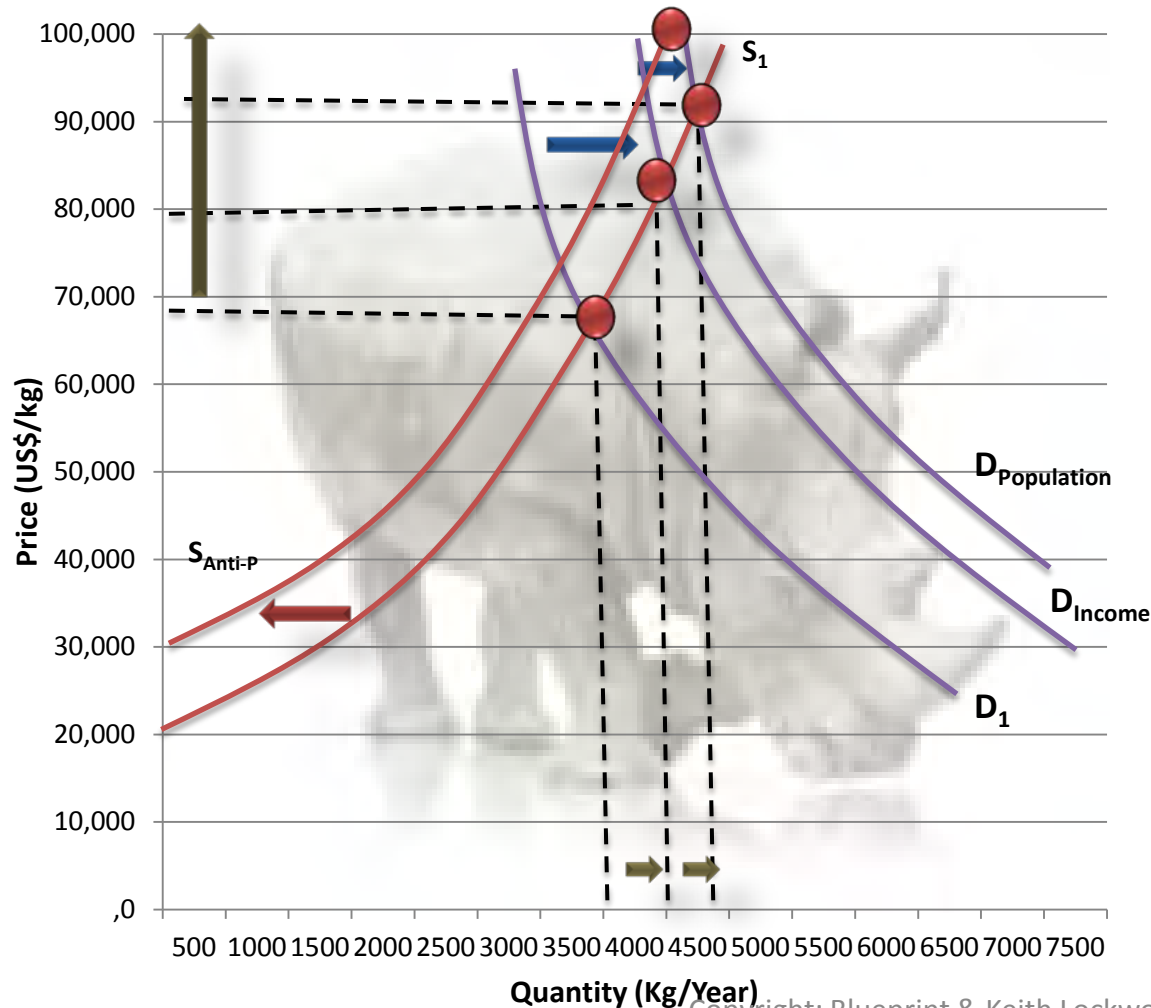
The impact of incomes and population growth on demand is inevitable



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Barring natural population disasters and Asian economic crises, an increase in demand due to income and population growth is inevitable. Situation will be worsened if new country markets are developed. To reduce number of rhinos poached means we need to focus on other variables that we can exert some level of control over.

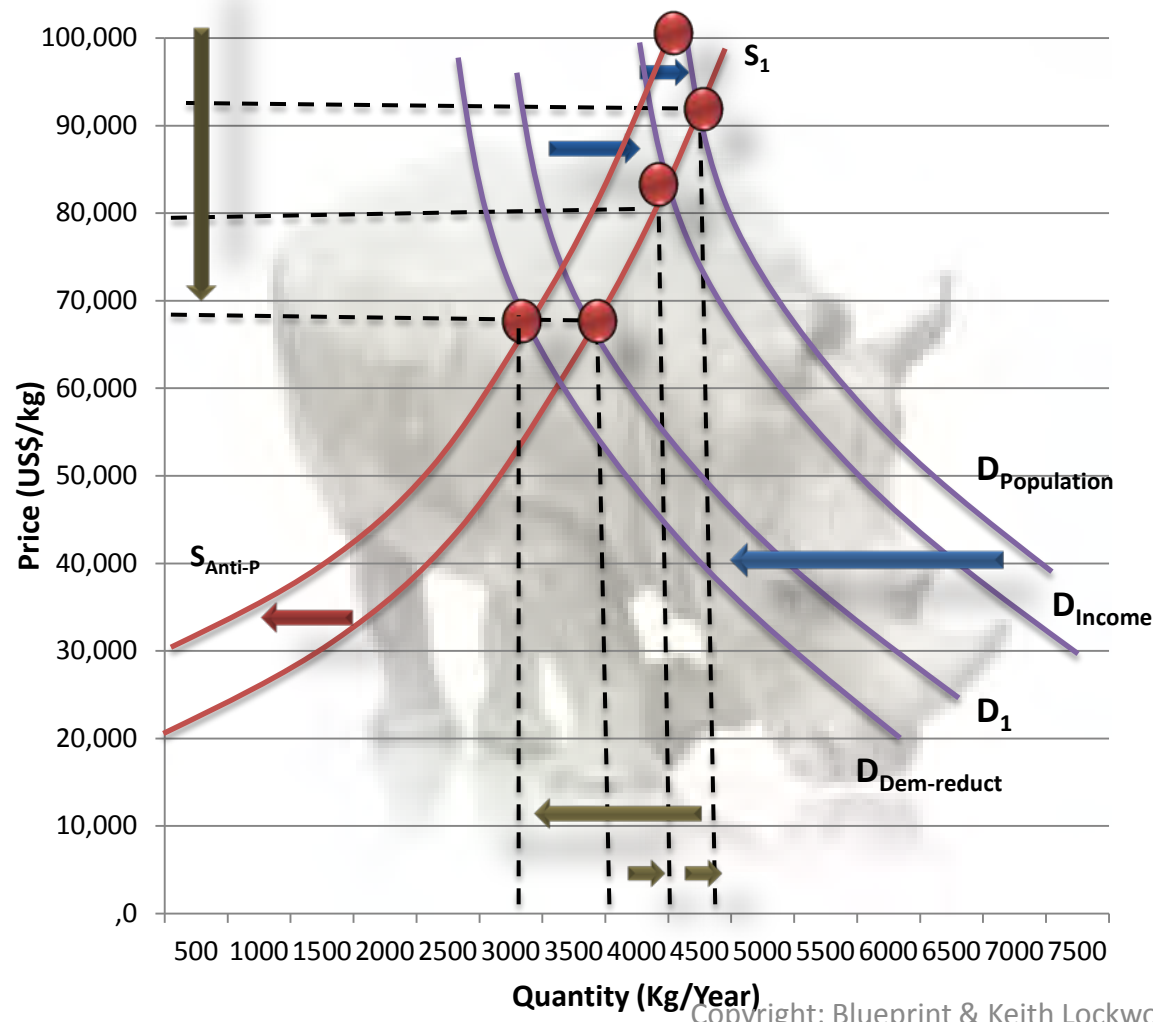
Anti-poaching efforts remain important in trying to offset the effects of demand growth



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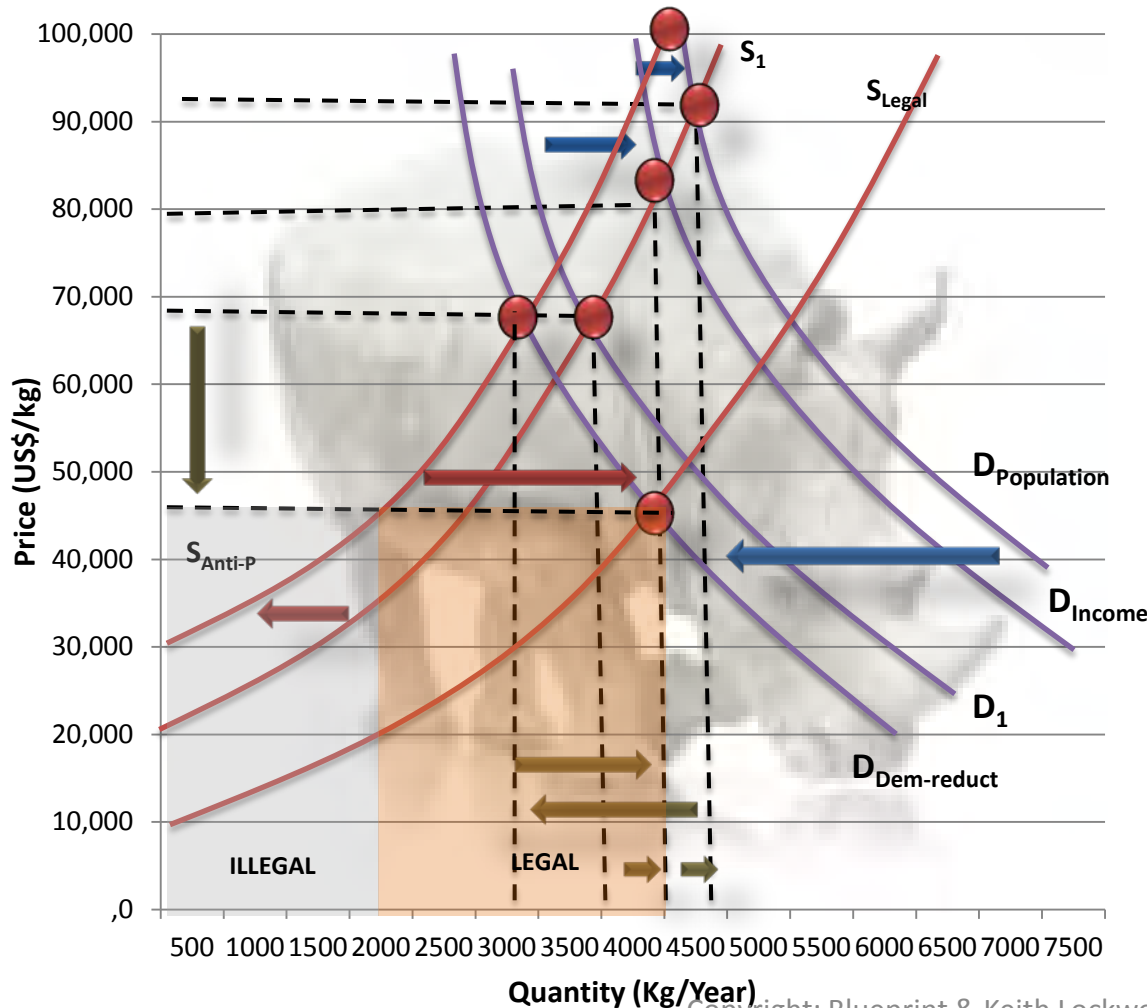
Improved anti-poaching efforts are necessary, but they will push up the price further, which could attract new entrants. Existing syndicates unlikely to leave the market. Improvements in anti-poaching effectiveness of close to 30% may be necessary – JUST TO OFFSET EFFECTS OF INCOME AND POPULATION GROWTH

Demand reduction probably difficult, but essential



Effective demand reduction essential, BOTH to limit future demand growth, and reduce current demand. But, to reduce number of animals poached below current levels will need very significant demand reduction (25% or more)

Trade has a role, but needs to be supported by other measures



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To be effective in reducing rhino loss, legal trade must displace illegal supply. Therefore, anti-poaching efforts must be sustained/ improved. There is a risk that additional supply will reduce price over an elastic part of the demand curve – leading to a big increase in the quantity demanded. Legal trade should be released slowly into the market – NO BULK SALES. Excessive implicit/admin costs associated with legal trade will push consumers back to illegal trade

**THANK YOU
DISCUSSION**