



Lessons from Rinderpest Eradication and reflections on PPR

Paul Rossiter

Concerning rinderpest eradication many lessons have already been learned and many of these applied to PPR

- **Reviews of lessons learned**
 - Peter Roeder and others
 - Jeff Mariner and others
 - Mark Rweyemamu and others
- **Applying lessons learned**
 - Baron, Parida and Oura
 - Angus Cameron
 - Njeumi F and others, 2020



- Concerning PPR I will refer to the GSCE, the GEP Blueprints, and the final report of the E-conference to establish GREN.



Food and Agriculture
Organization of the
United Nations



WORLD ORGANISATION
FOR ANIMAL HEALTH



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded on OIE

J-OIE GF-TADs

R Working Group

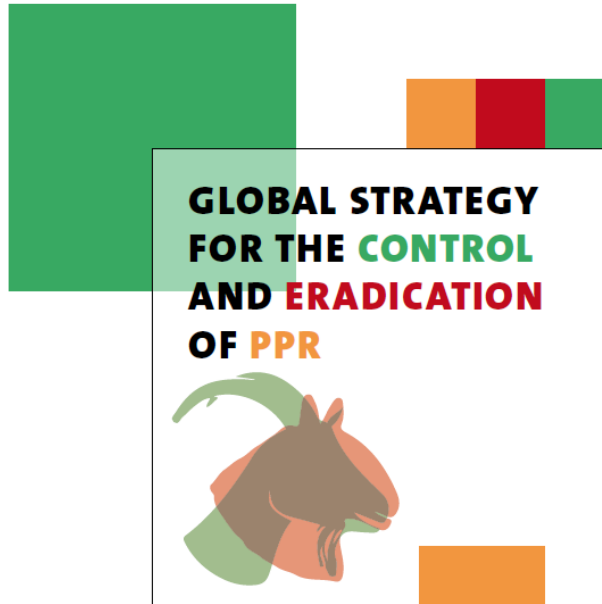
E-conference

“Establishing a Global PPR Research and
Expertise Network (PPR-GREN)”.

3 February – 7 March 2014

Paul Rossiter

Moderator



Overview and background

I have a three-part presentation.

- 1. I hope to show where things have been more difficult for PPR than they were with RP ...and how this may impact the 2030 deadline.**
- 2. I want to take you on a rather adventurous exploration of PPR eradication in a commercial sense. This looks at some of the non-technical and socio-economic aspects of the PPR-GEP.**
- 3. I will highlight a few issues that I hope this GREN meeting might discuss and advise on.**

Along the way there will be a few nods to parallel progress in human disease control and to outputs 2 and 3 from the GSCE

Similarities between RP and PPR control and eradication at the start of PPR-GSCE.

Things we could plan for:

Another morbillivirus disease with all the prerequisites for eradication

All the technical tools and skills (vaccines, diagnostics, surveillance etc etc)

A global consensus of support – high morale (2011)

Momentum



Differences between RP and PPR control and eradication campaigns.

Things we could NOT have planned for:

Global financial problems (2007) and continuing dwindling funding. (IMF and WB reports)

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A global viral pandemic in another species – us! At least three years gone!

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A global viral pandemic in another species – us! At least three years gone!

Increasing incidence of extreme weather events (WMO)

Differences between RP and PPR control and eradication campaigns.

Things we perhaps **SHOULD HAVE PLANNED** more for:
(hindsight is 20/20!)

The comparative sizes of the two campaigns

Greater host numbers: twice or perhaps three times as many as for RP

Faster host replenishment rates: twice as fast or faster than for RP

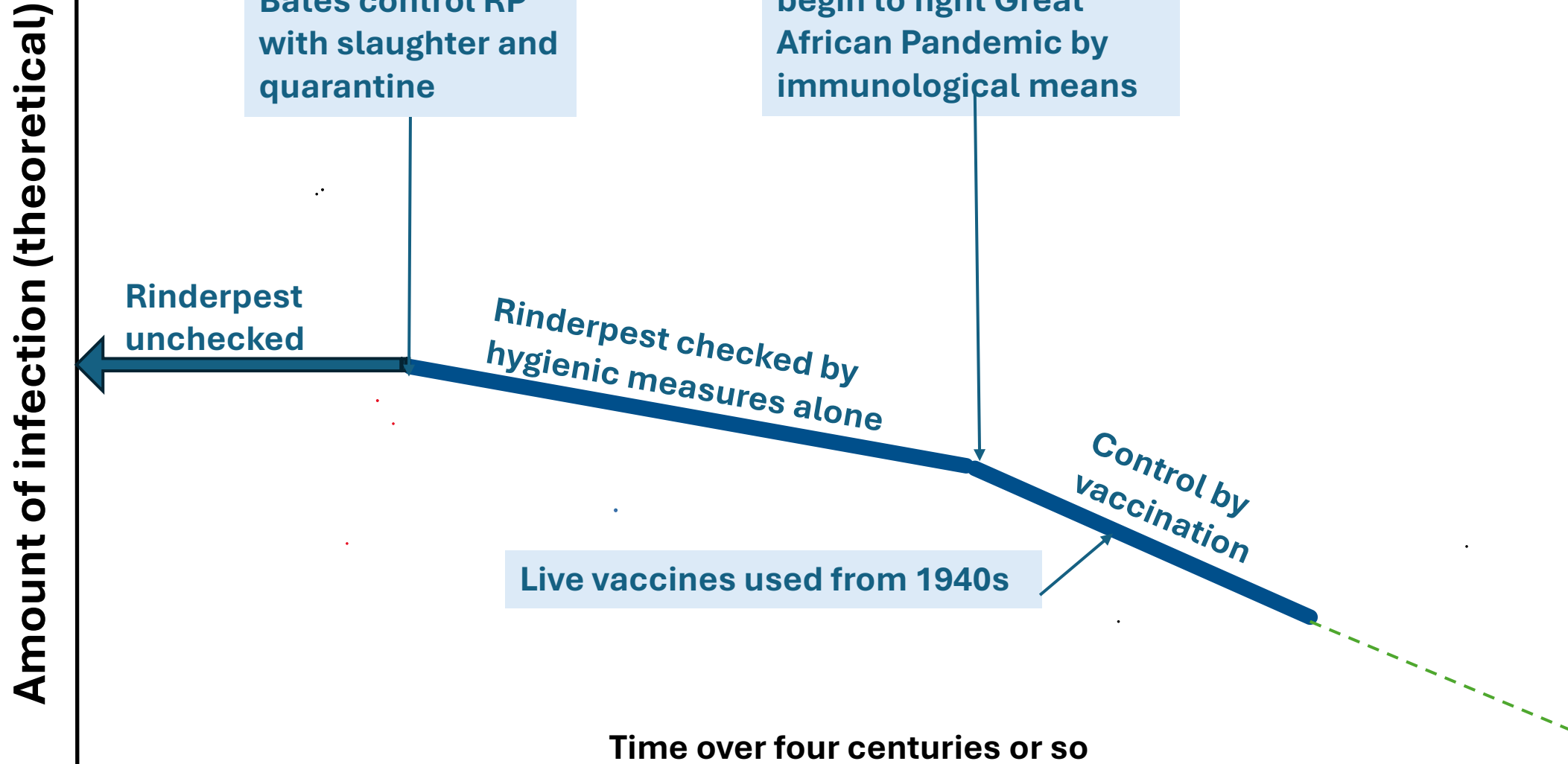
Greater geographical prevalence : 70 countries? Much more than final stages of RP

Greater host mobility; sheep and goats fit in the boot of a car, on the back of a bicycle, or even on someone's lap on a plane!

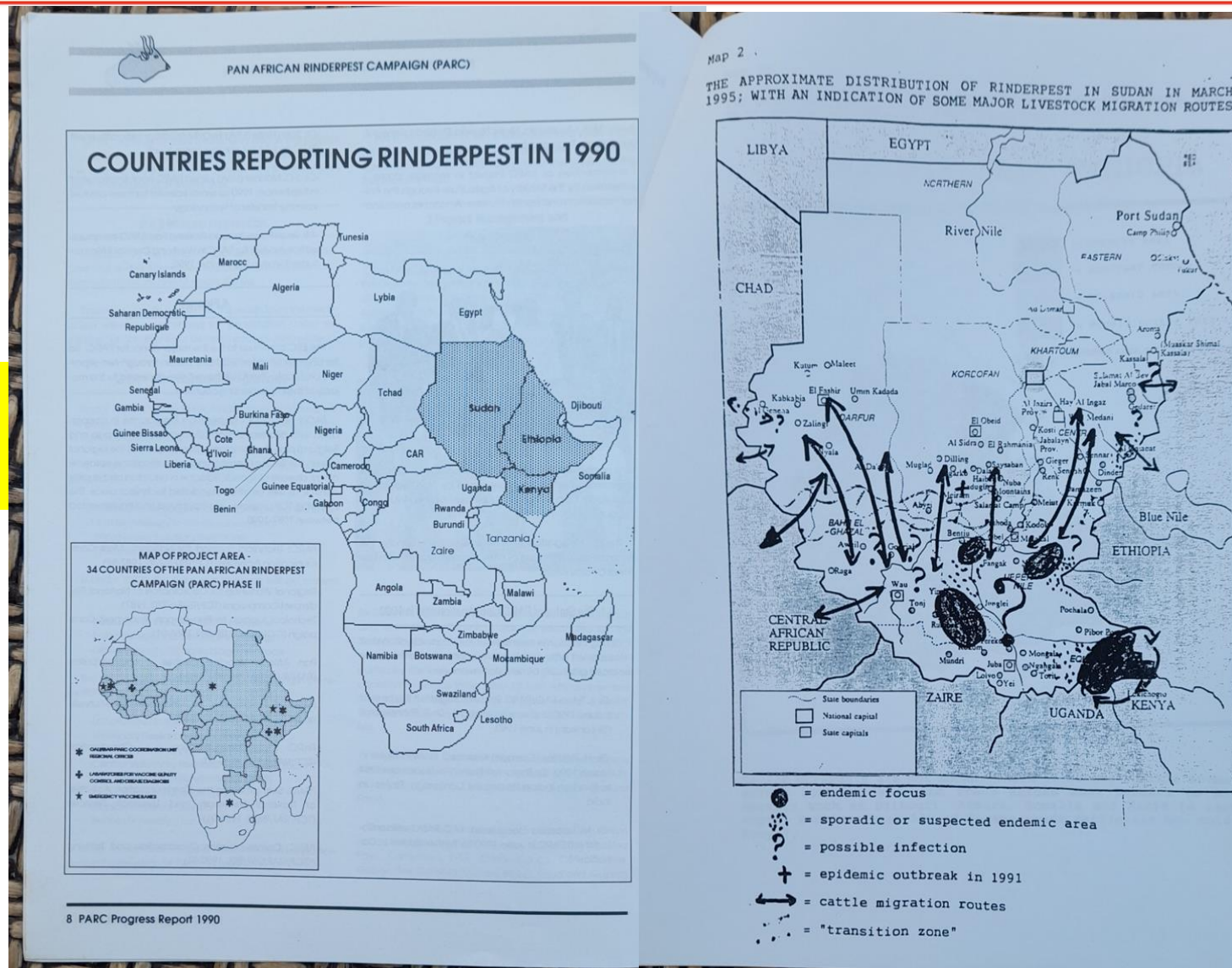
The comparative timings of the two campaigns



Rinderpest

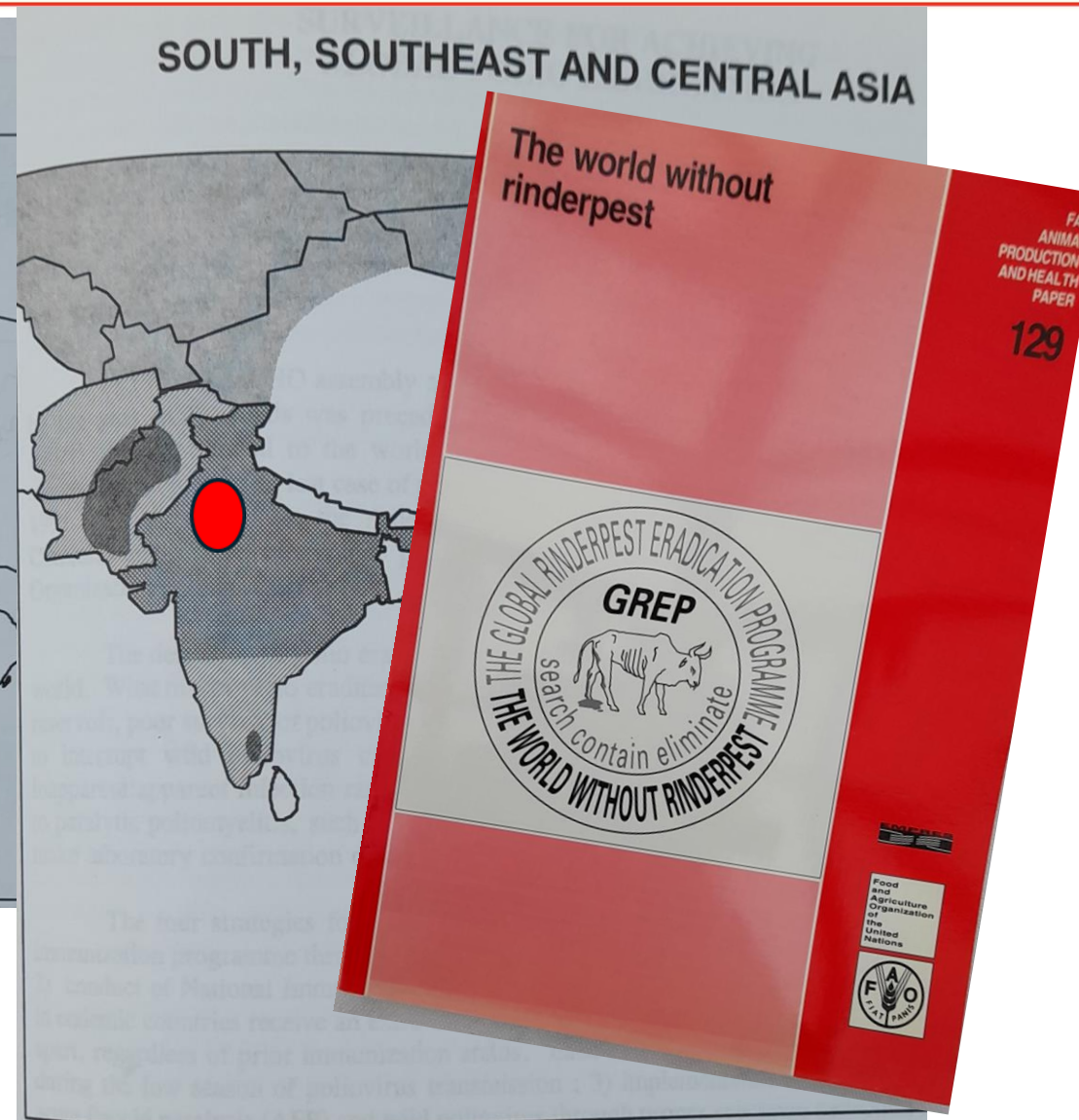
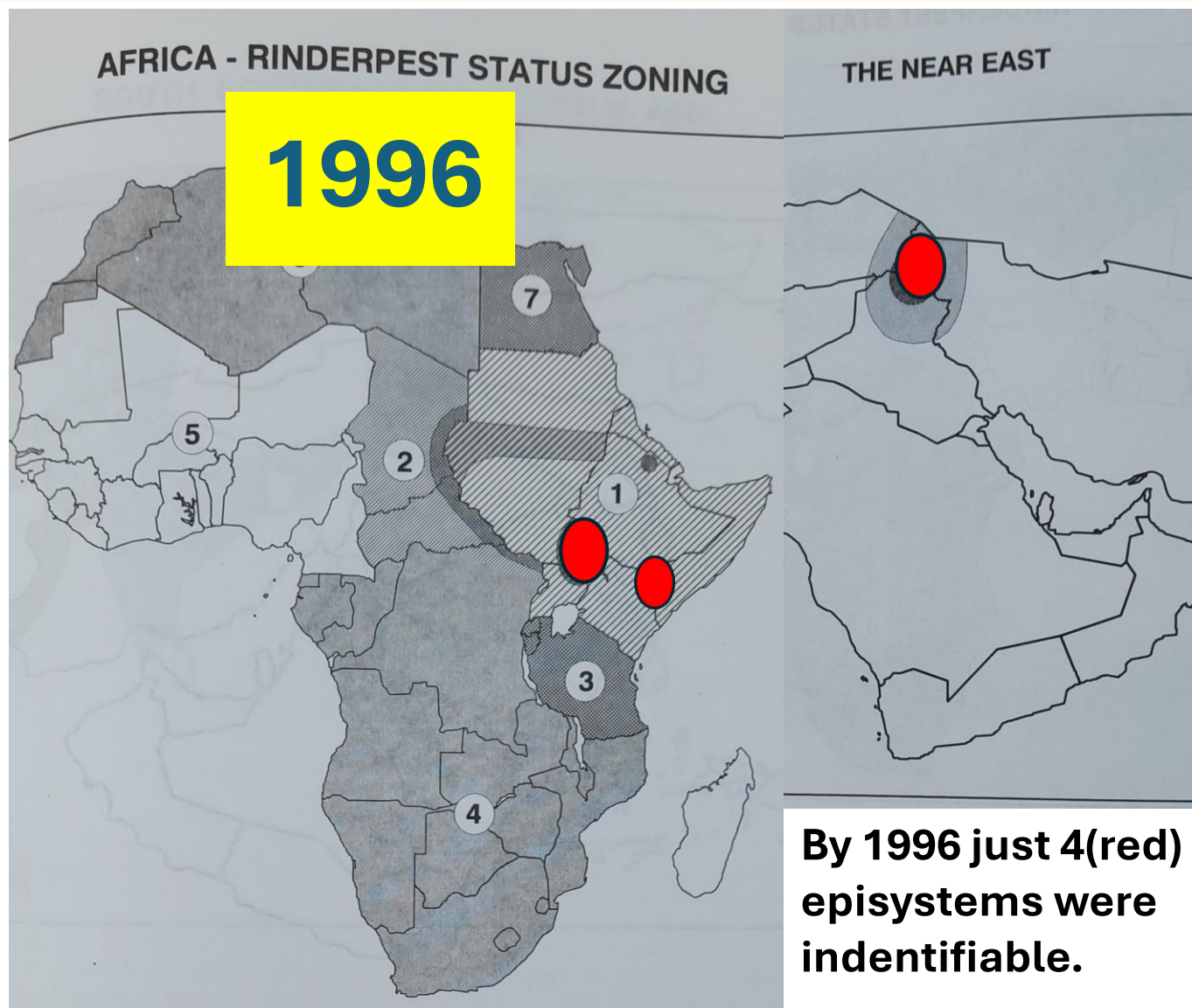


Rinderpest 1990

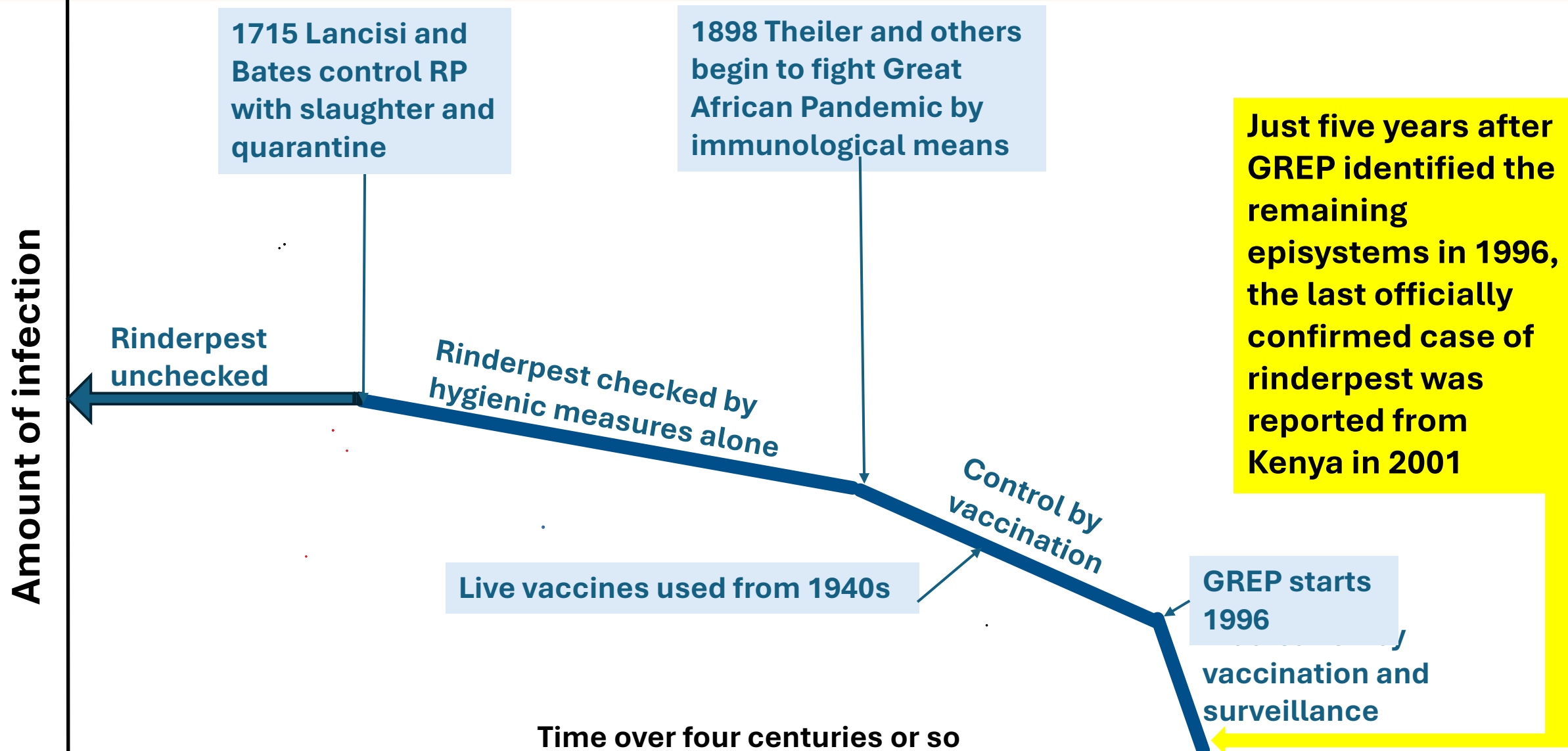


By 1990 the rinderpest programme was defining “hot spots” or episystems.

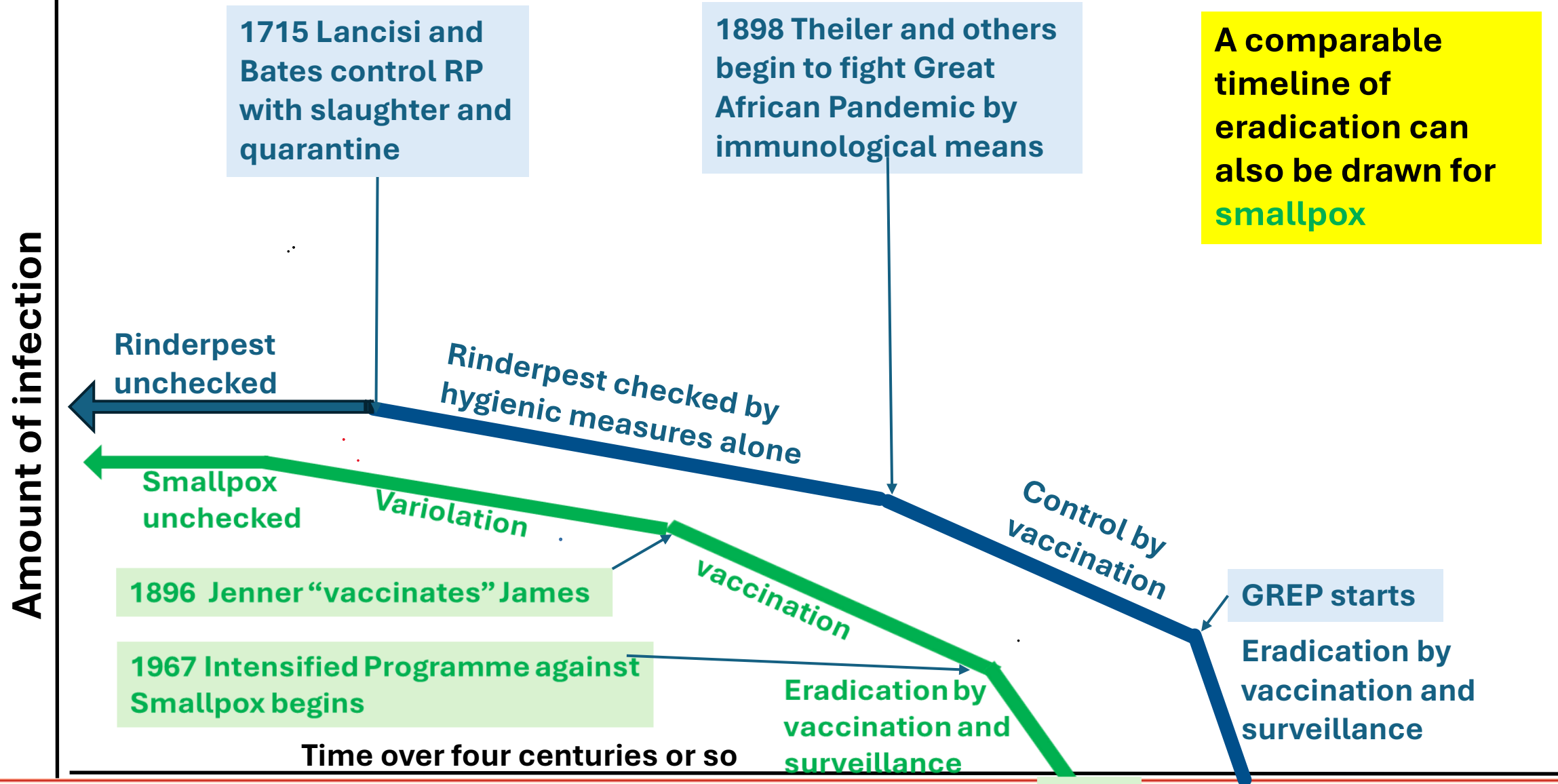
Part 1



Rinderpest 1996



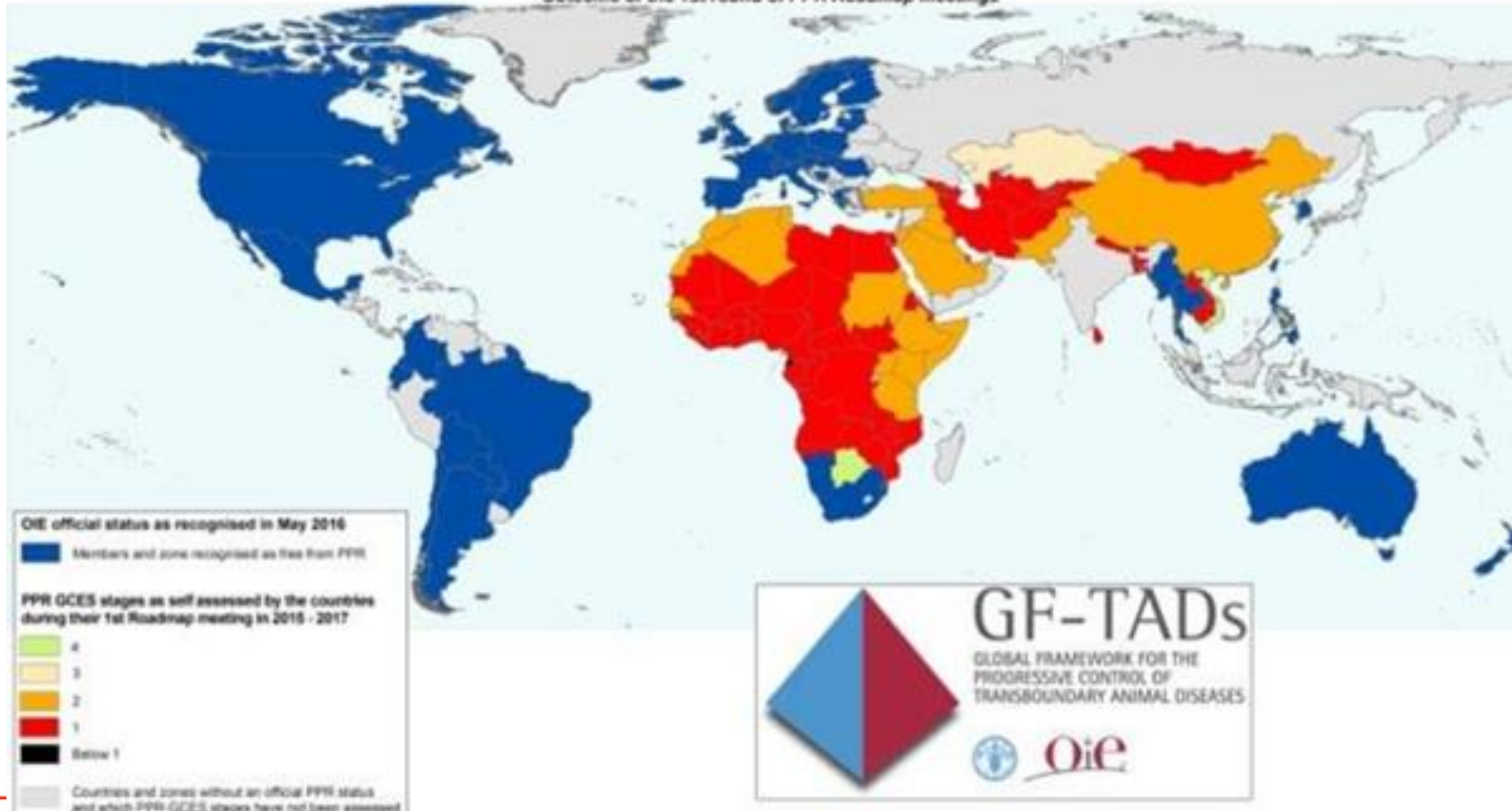
Rinderpest and Smallpox



Peste des petits ruminants global situation up to 30 April 2017

OIE official PPR free status and PPR Global Control and Eradication Strategy (GCES):

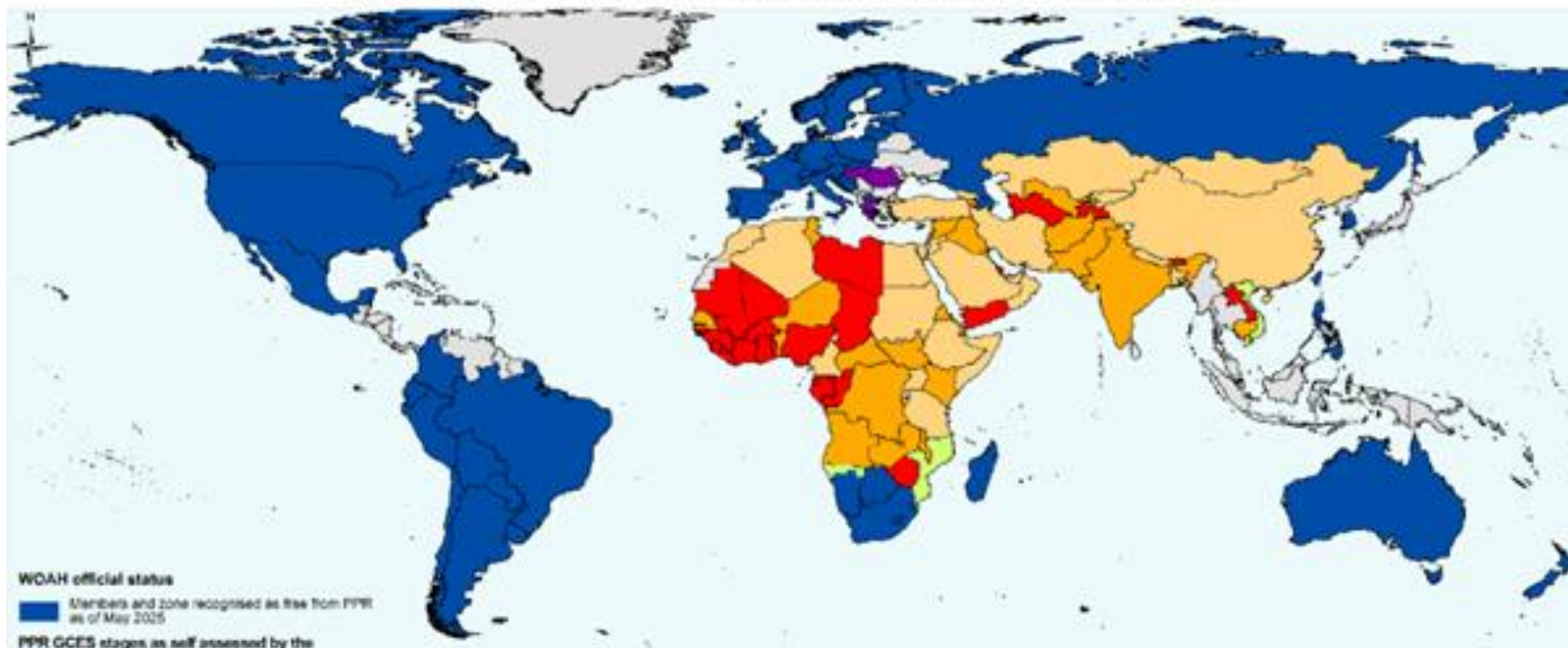
Outcome of the 1st round of PPR Roadmap meetings



In 2017 some 70 countries infected or suspected of having PPR

Peste des petits ruminants global situation up to May 2025

WOAH official PPR free status and PPR Global Control and Eradication Strategy (GCES)



**In 2025 some 70 countries still infected or suspected to be infected with PPRV.
Slow progress over eight years.**

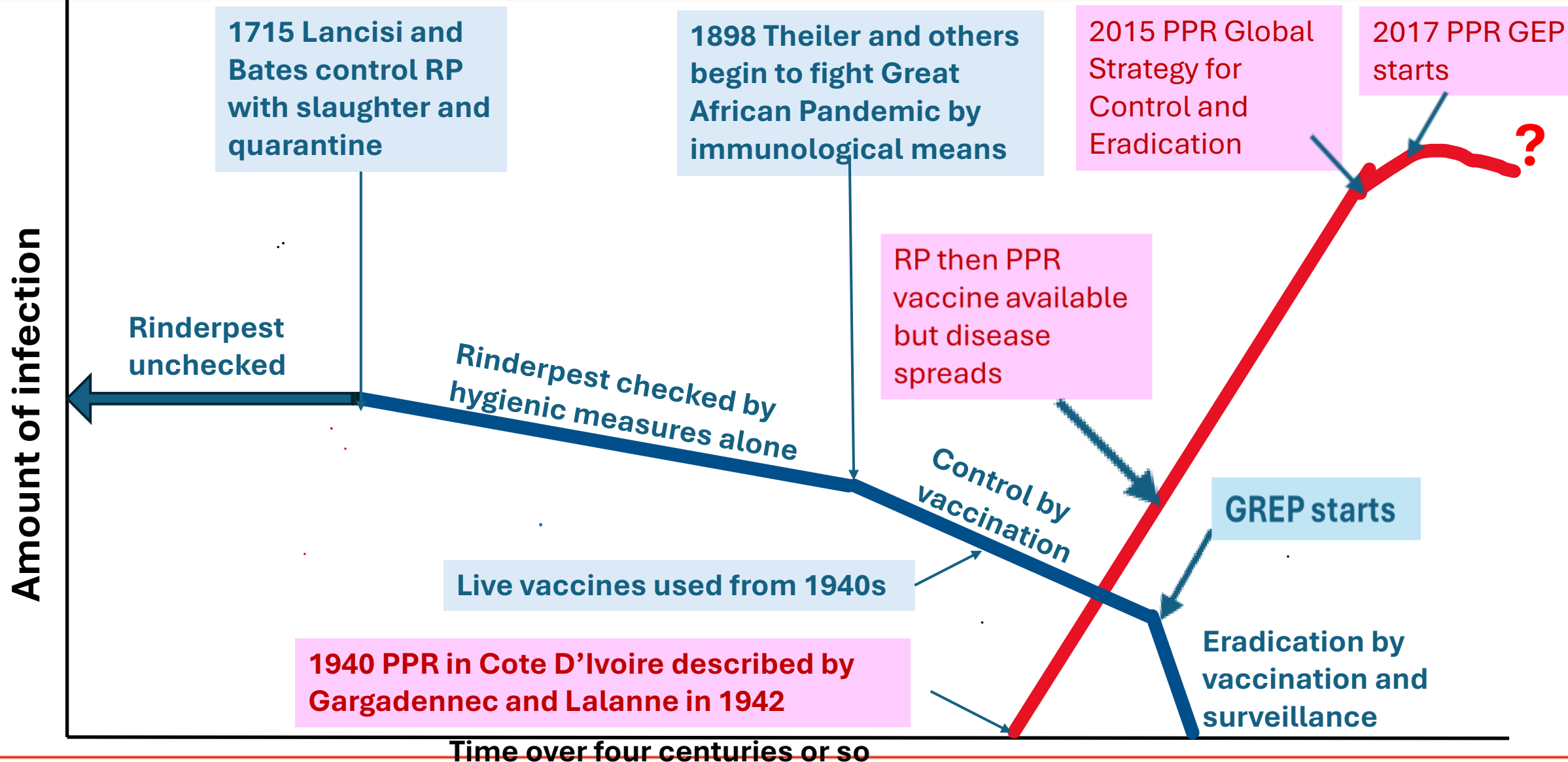




- The next slide attempts to draw a hypothetical timeline of control for PPR and is very different to those for rinderpest and smallpox.



Rinderpest and PPR



To summarise Part 1.

The Global PPR eradication campaign:

- Started earlier in the control/eradication cycle than the comparable RP eradication campaign
- With less epidemiological knowledge of episystems or “hotspots”.
- Is a much bigger job (target host population) than RP
- Has been and continues to be affected by major global, regional and national negative factors which are beyond its control and seriously hinder implementation.



Recommendation Part 1.

The Global PPR eradication campaign:

- Could consider the extension of the final date beyond 2030

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The Global PPR eradication campaign:

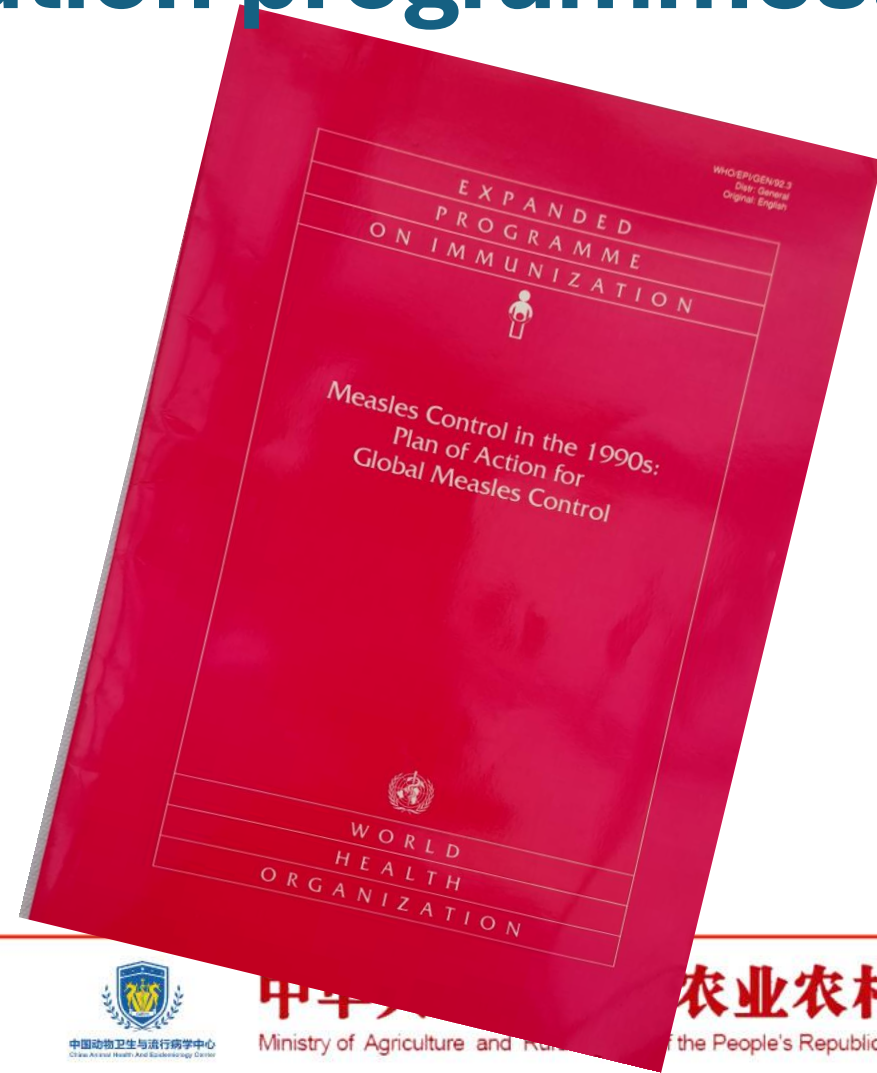
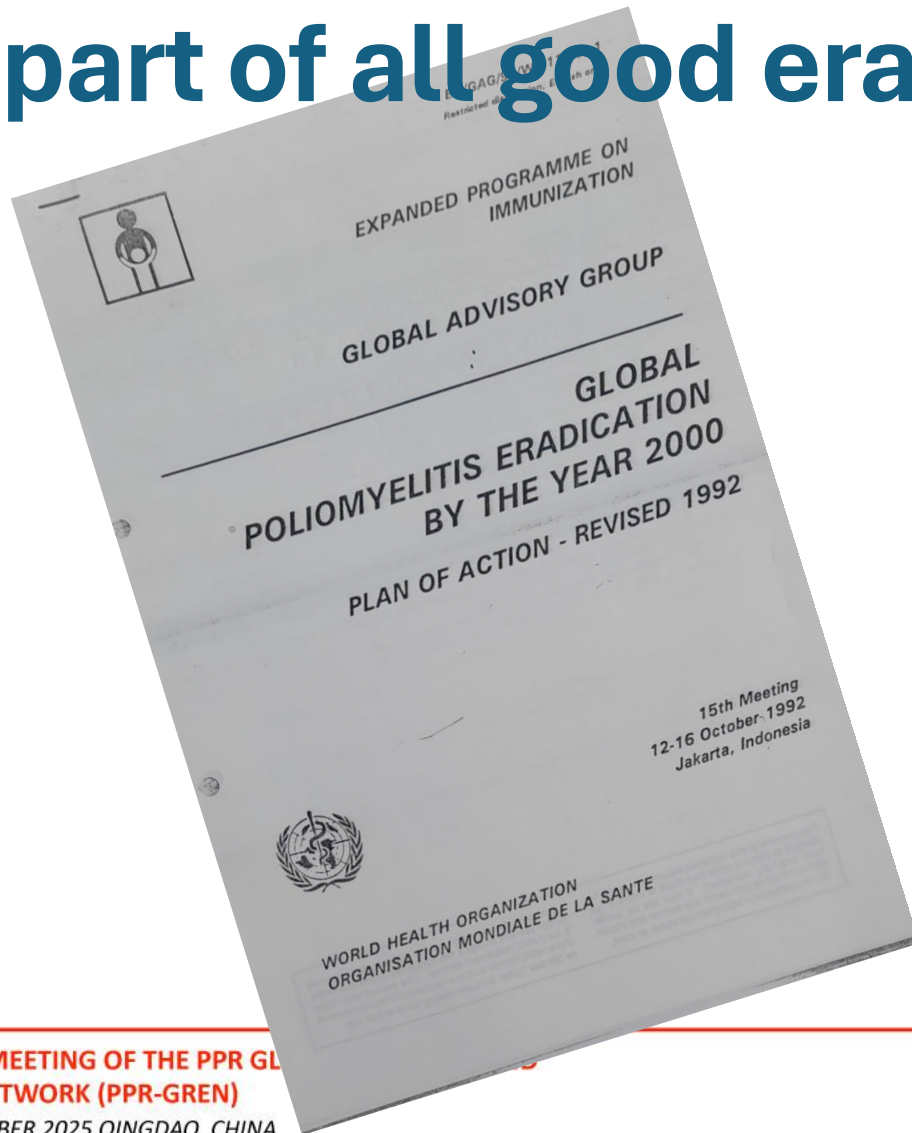
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- This GREN meeting is a good forum in which to begin this discussion

Recommendation Part 1.

The Global PPR eradication campaign:

- Could consider the extension of the final date beyond 2030
- This GREN meeting is a good forum in which to begin this discussion
- **Could 2040 be a possible date?**
 - it gives an additional decade which I think is required
 - it will be exactly 100 years after the disease was first recognised by Gargaddenec and Lalanne

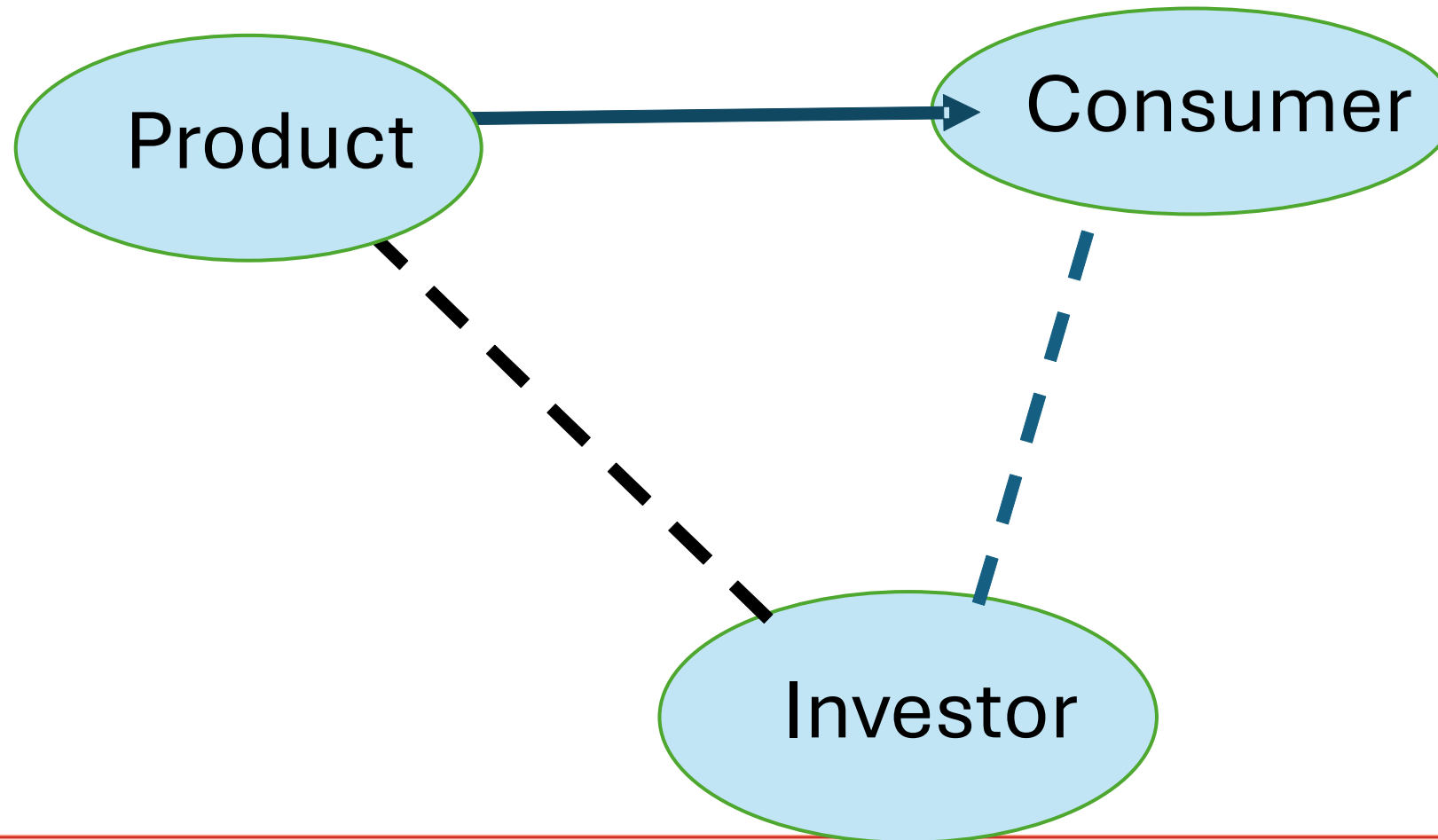
Asking for an extension of the target date is part of all good eradication programmes!!



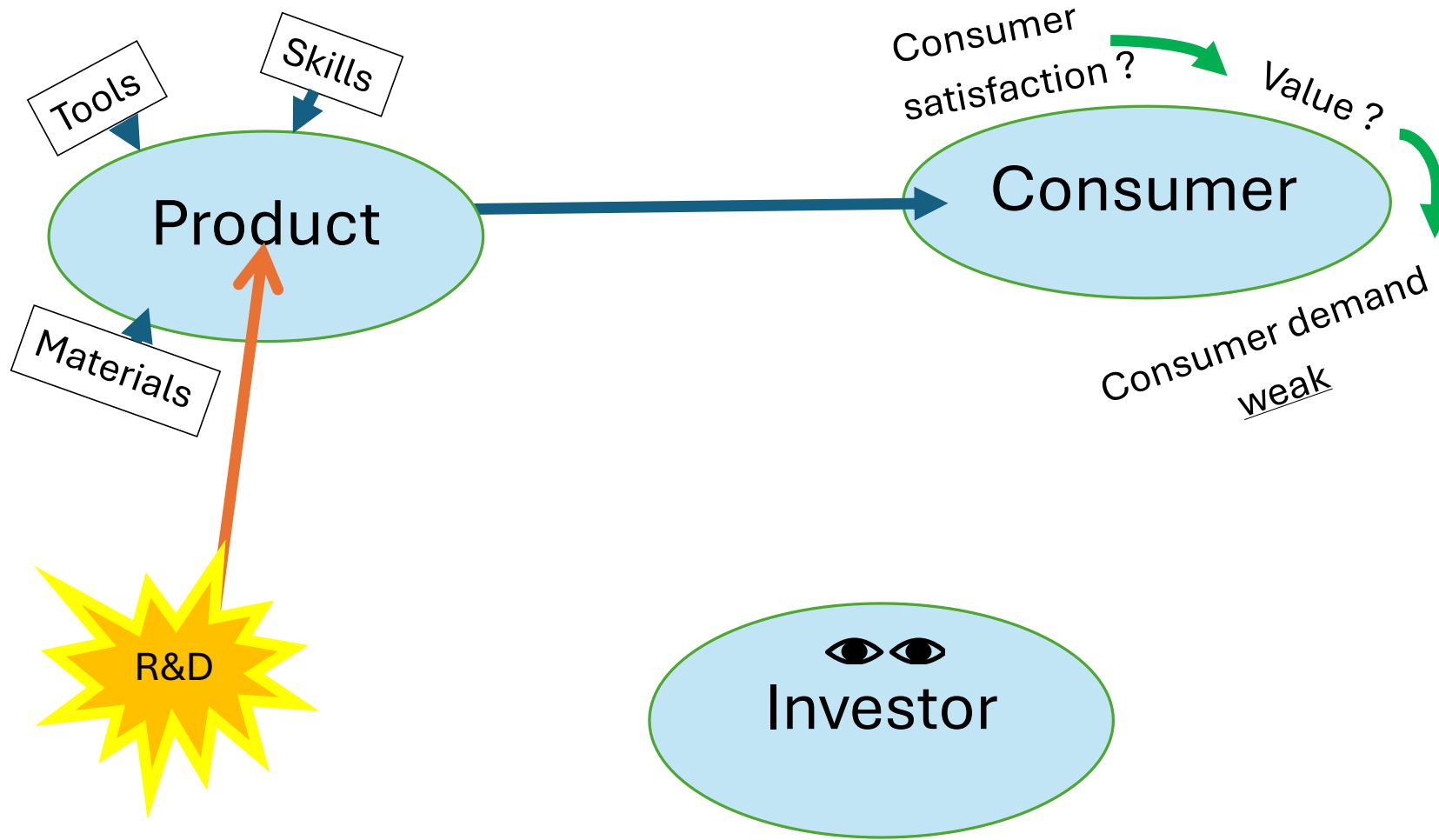
Part 2. An economic digression

- **The mutual interdependence of producers, consumers and investors**
- **Comparing disease eradication with selling cream cake!!**

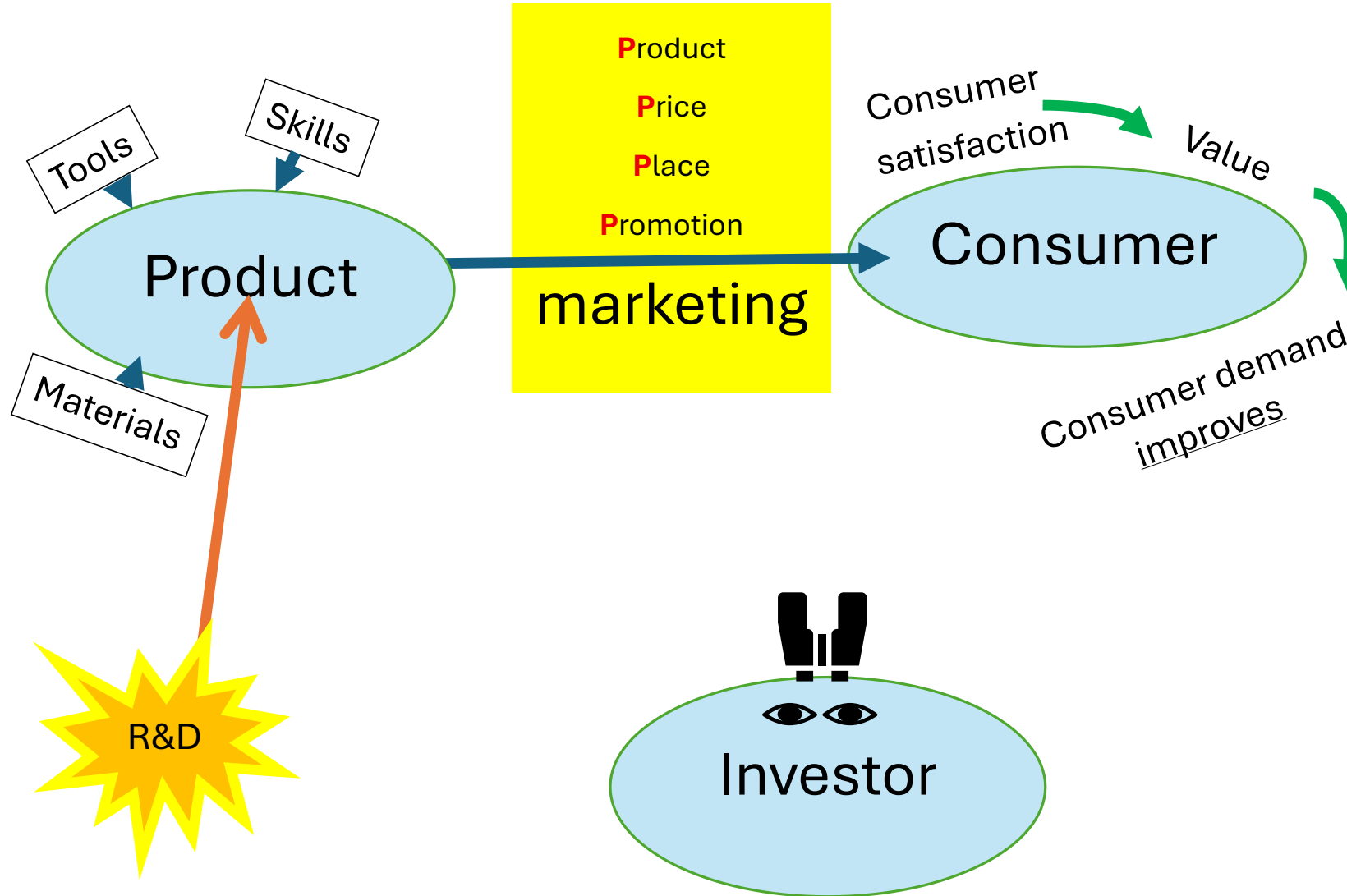
The mutual interdependence of producers, consumers and investors



Emphasis
on good
product but
little or no
marketing.
**Weak
consumer
demand**

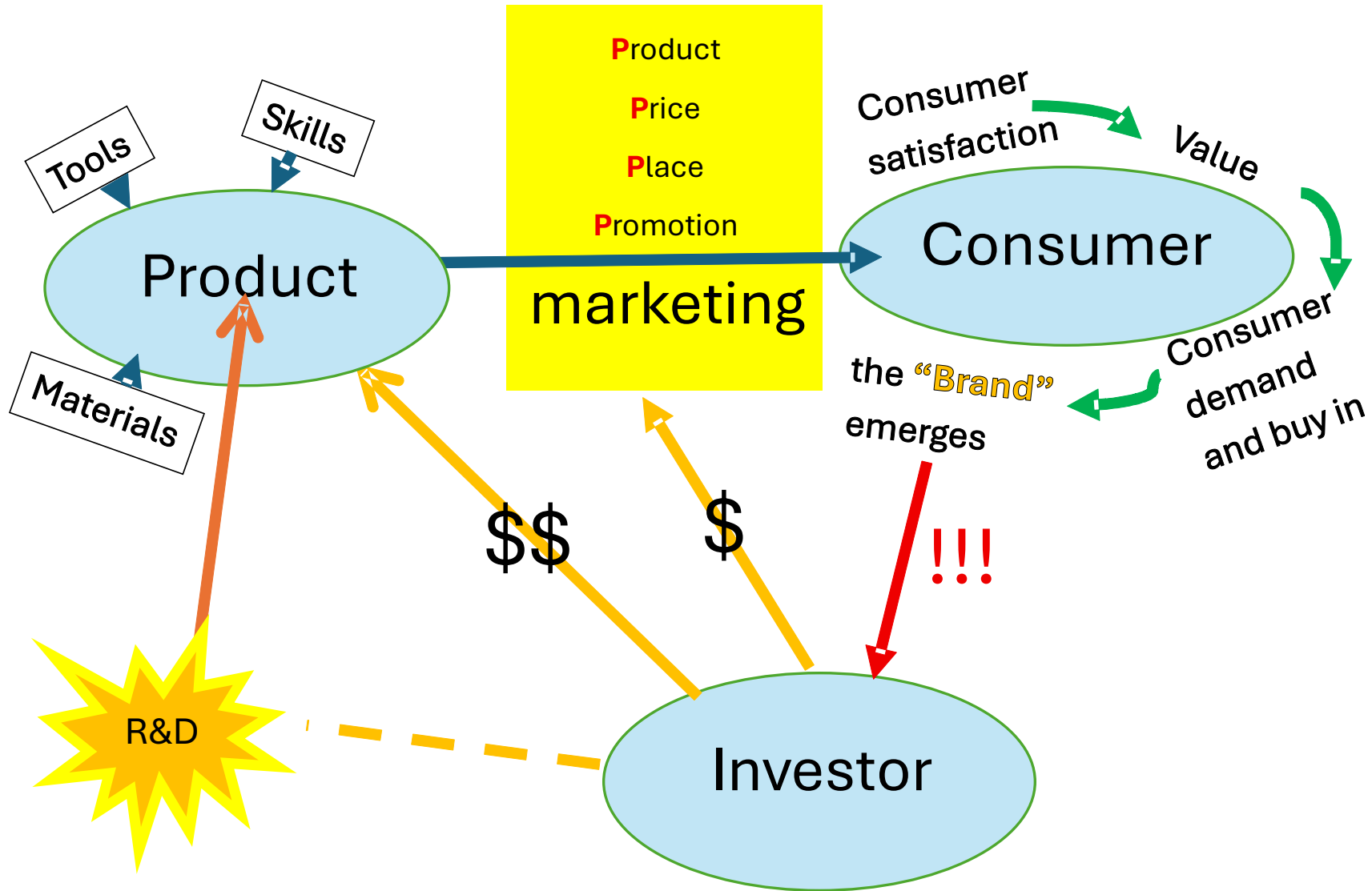


More
emphasis
on
marketing.
More sales



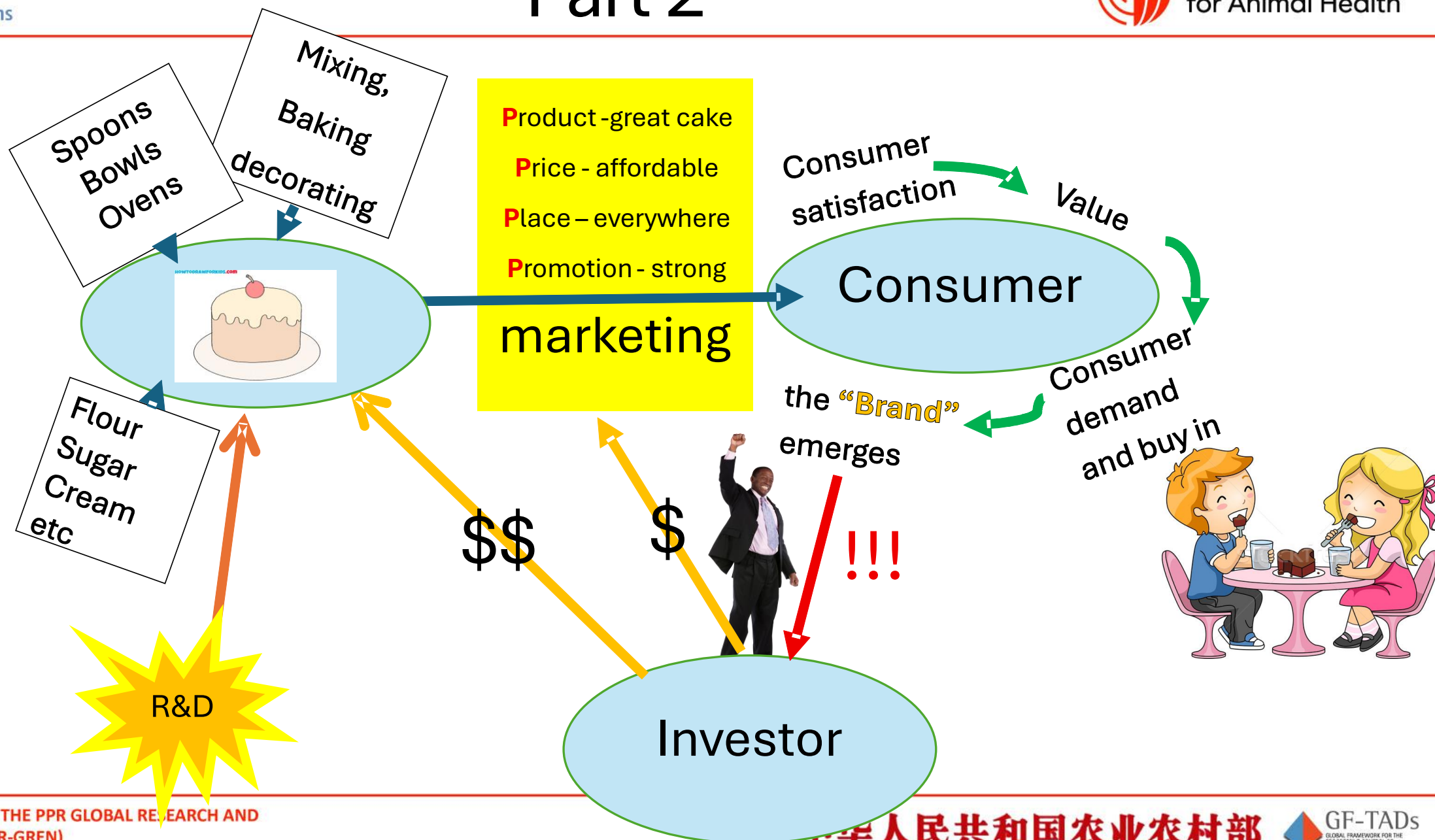
Even more marketing with better targeting. Sales booming and the product is now emerging as a **“brand”**.

A brand increases trust between producer and consumer, increasing demand and sales.



Part 2

Example of
successful
sales of
cream
cakes

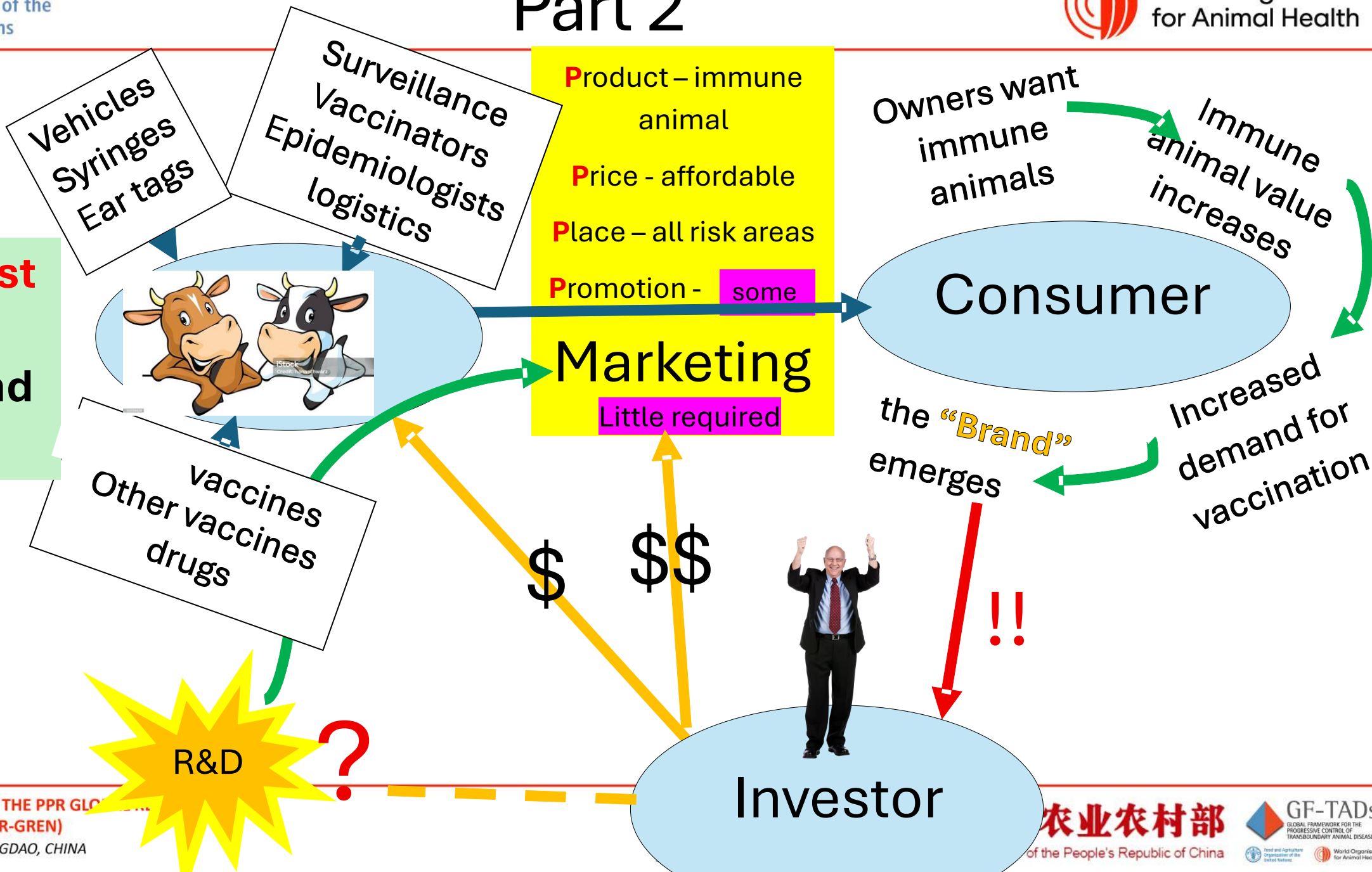




Rinderpest and Smallpox were highly feared and well known, indeed infamous, diseases. They were “brands”.

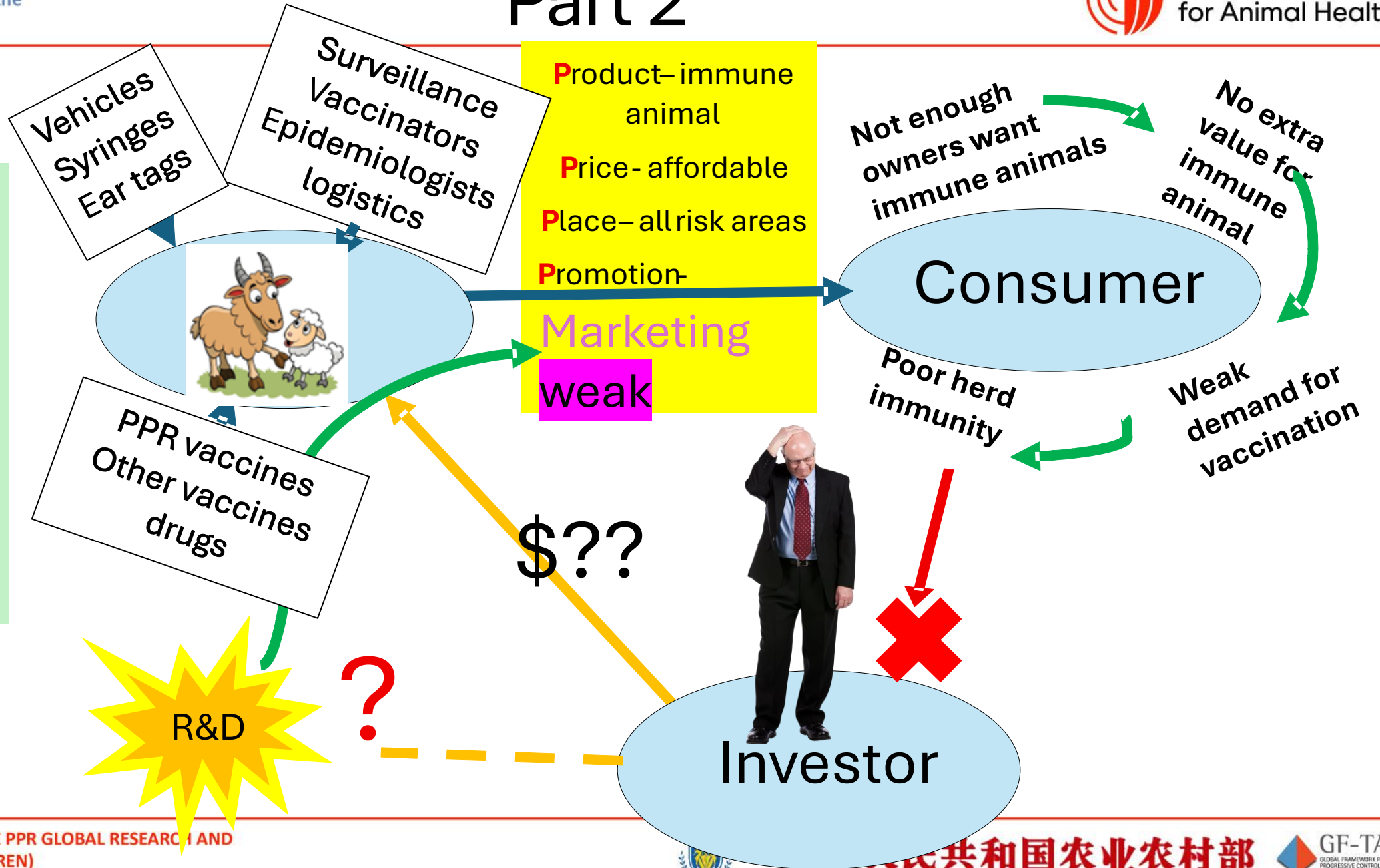
Part 2

Rinderpest
Widely
known and
feared



Part 2

PPR
Not so
widely
known
and
feared as
RP.



Part 2

PPR

Now more
widely known
and feared.

After strong
promotion



Part two summary

- **PPR GEP is strong on product – detecting sick animals and producing immune animals**
- **But how strong is PPR GEP with the consumer?**
- **Will investors want to support GEP if they sense lack of consumer buy in?**

Very pleased to see only last week that AU-IBAR in its new PPR eradication programme is considering these issues.



Part Three

- This looks at some ways to address the issues already raised in Part 2
 - How might we market PPR more strongly
 - How might we market PPR eradication more widely and strongly
 - And do we have to market sheep and goats more strongly as well?

Marketing PPR Eradication: How might we bring in the consumers and investors?

What is public perception of the value of PPR eradication?

1. The disease:

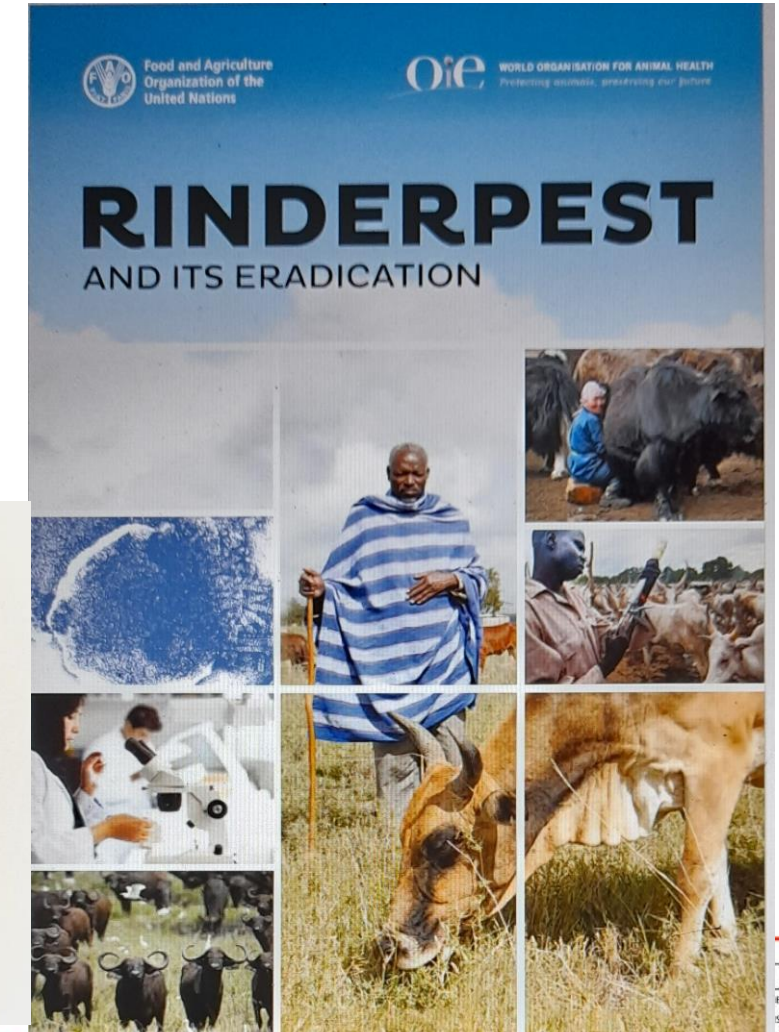
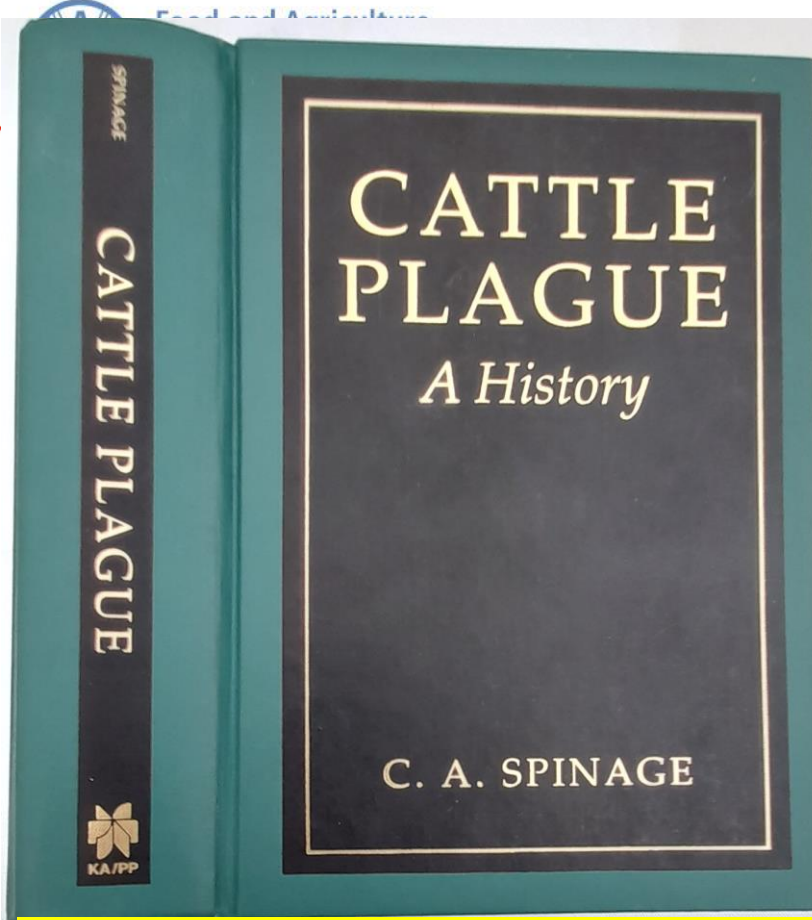
- Rinderpest was well known:
- PPR not so well known
- Do owners have other livestock health worries besides PPR?

2. The host:

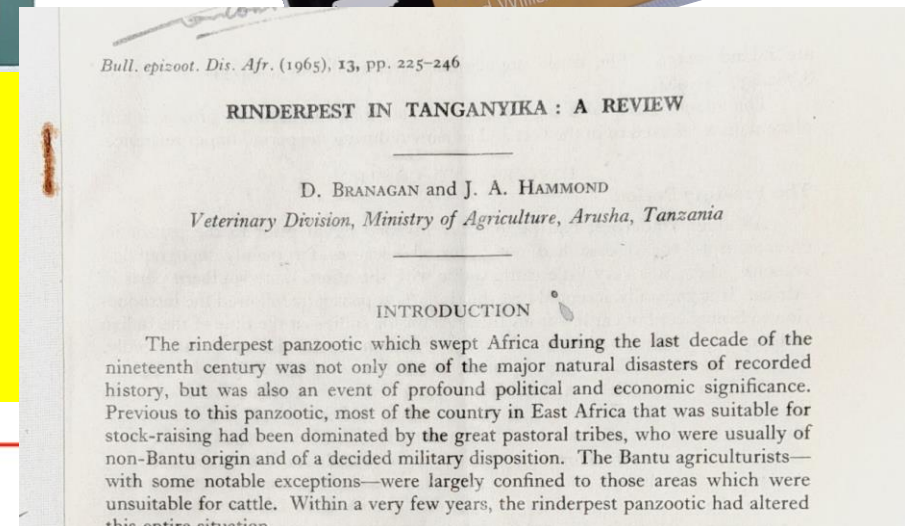
- the value of the animals, cattle v shoat;
- public misconceptions about shoats

Part 3

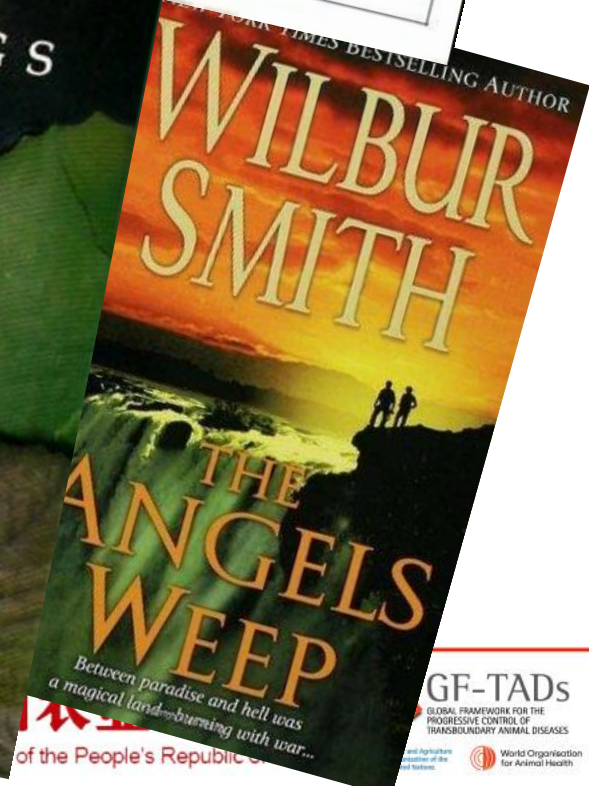
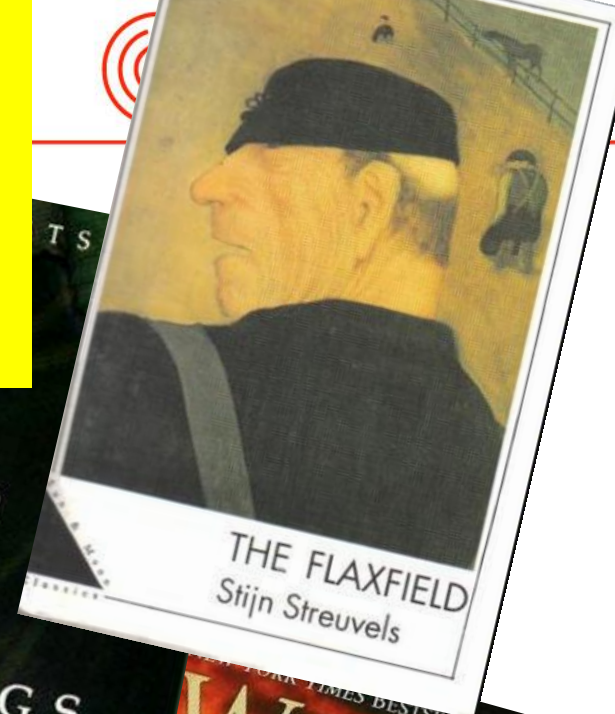
Rinderpest the disease



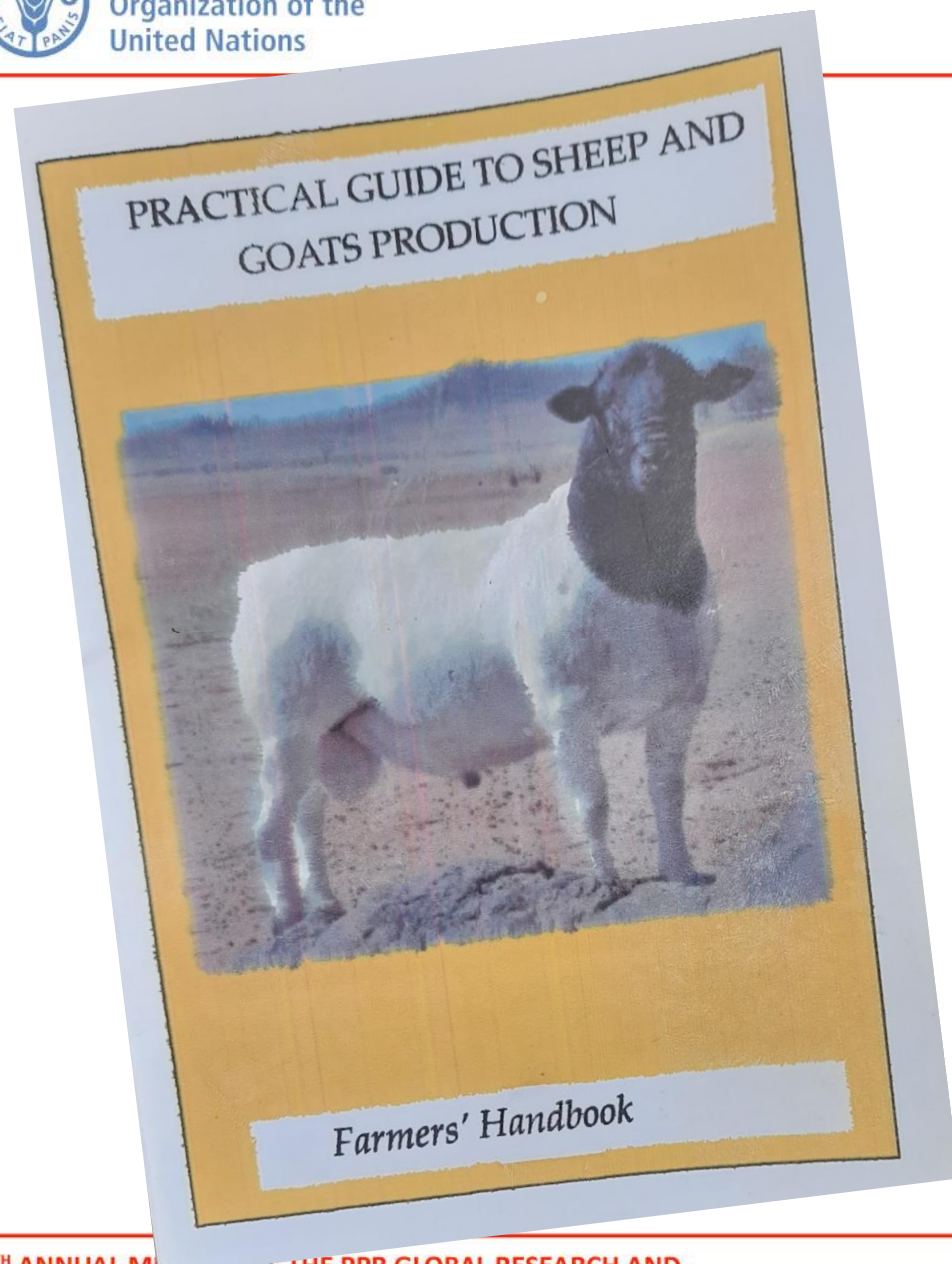
There is masses of
technical history
about rinderpest



There is plenty written about
rinderpest in well known
novels and general history



Part 3



PPR - the disease

How well known is PPR?

It was discovered only in 1940 so has a very short history.

Unfortunately, it is not even mentioned in this very current (2024/5) booklet for farmers. On sale at a nation's premier livestock show!

Other diseases of small ruminants.

- Many owners of small ruminants are also concerned about losses caused by other transboundary and endemic diseases of their stock.
- This issue was recognised by and included as objective 3 in the PPR GSCE published in 2015, and in subsequent work plans and blueprints. But how active has this component of GREP been to date?
- Some reported data has shown that owners are more likely to present their flocks for multiple vaccines/treatments rather than just one.
- Smallpox and rinderpest were big disease brands and eradicated largely on their own. Measles and polio are not quite as feared and have largely been subsumed with the broader Essential Programme of Immunization of WHO. In some places may a broader approach including PPR vaccine lead to better overall uptake against this highly eradicable disease?

Comparative progress in eradication of livestock virus diseases with our human health colleagues

	Human	Livestock	
Eradicated	Smallpox	Rinderpest	Both BIG Names Both highly feared
Targeted for eradication	Measles Polio	PPR	Control (even local elimination) of M and P very largely achieved, but global eradication challenging. PPR on course or challenging?
Global control campaigns	Essential Programme of Immunization (EPI)	???? Global responsibility devolved to regional and national levels	EPI is the blend of 1) control of multiple diseases with evident benefits, 2) strengthening of health services worldwide and 3) a synergy with focussed eradication campaigns



The Host

The size factor.

- This young Suni is suffering from muscle weakness?/nerve pathology in its legs especially its hind legs and lumbar area.
- It is a clear “syndrome” with several very similar cases usually occurring as a small “outbreak”. They progressively weaken and die. There have been several “outbreaks”.
- Attempts to solve the problem with the help of wildlife specialists are met sympathetically but little is done because of the demand for time to be spent with more important wildlife like lions and elephants etc.
- Regarding PPR – are owners and livestock staff giving more attention to cattle than to sheep and goats?

Part 3



There is a very strong conception/ misconception among the public that small ruminants are the cause of overgrazing and desertification.



We need to counter this misconception.

Marketing PPR Eradication: how might we encourage the consumers and investors?

PPR GEP is strong on product – detecting sick animals and producing immune animals

But how strong is PPR GEP with the consumer?

Will investors want to support GEP if they sense lack of consumer buy in?

Could multivalent vaccines or inoculating multiple vaccines simultaneously help eradicate PPR?

- **Question** - I asked Google AI the following: *“Does using MMR vaccine lead to more patient compliance than using immunization based on monovalent measles vaccine and other separate human childhood vaccines?”*
- **Answer:** Yes, using the combined MMR vaccine leads to higher patient compliance (higher vaccination coverage) than using separate monovalent measles and other vaccines

Are we monitoring and measuring outputs 2 and 3 from the PPR-GSCE?

**Is PPR GEP strengthening vet services and how is this
measured?**

**Do we have quantitative data yet to show improved control
of other diseases of small ruminants?**

Overall Conclusions

- **The PPR challenge is considerably bigger than for RP**
- **A lot of time has been lost outside the programme's control**
- **Resources are more constrained than they were for RP eradication**
- **PPR is not such a well-known brand as RP**
- **Sheep and goats are not always viewed as favourably as cattle by the overall public**
- **Striking a new balance between the very effective technical inputs and the current lack of human awareness and participation may help**



Thank you for listening