

FAO-EuFMD-OIE Progressive Control Pathway (PCP) for FMD: Principles, practice and lessons learnt in the West Eurasia FMD Roadmap

Presented by Keith Sumption – with acknowledgements to
PCP team in FAO, EuFMD and OIE

**Scientific Developments and Technical Challenges in the
Progressive Control of FMD in South Asia
Feb 13- 15, 2012 in New Delhi, India.**

Summary

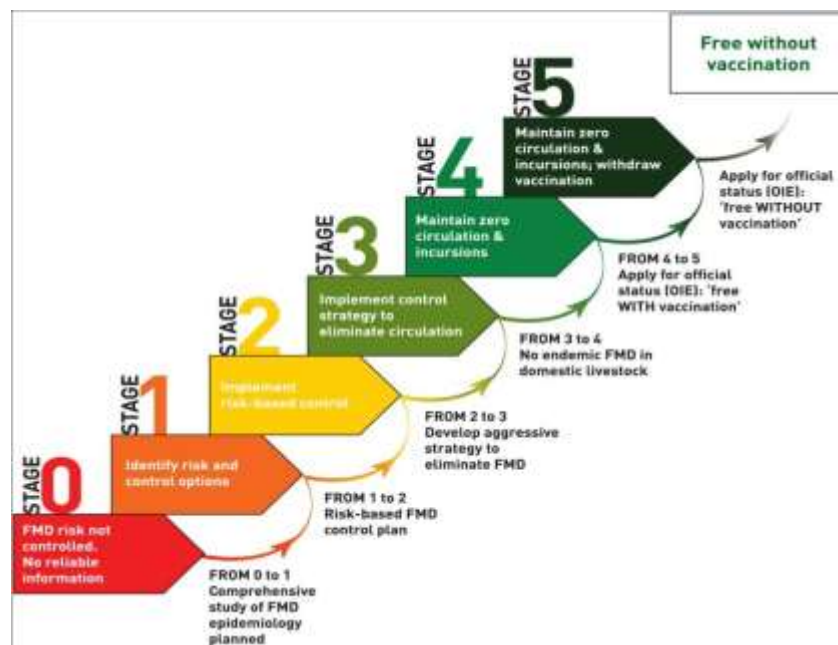
PCP-FMD

- In use since 2008
- Joint FAO-EuFMD-OIE Tool
- 5 stages
- Outcome oriented , evidence based
- Strategy development
- Gap analysis
- Comparative
- Work in progress:
 - Tools for assessment
 - linkages to PVS



The PCP for FMD

- Background; the rationale and principles
- Practice: Criteria and Assessment
- Lessons learnt
- Acknowledgements
 - This is the work of MANY



Background: public-private policy issues affecting progress

- **lack of incentives at national level**
- **lack of incentives at producer level** to invest in prevention
- **lack of opportunity to purchase vaccine** (state controlled access, limited or no suppliers, cold-chain issue)
- **lack of technical advice to guide vaccine purchase**
- **commonplace high risk** situations: open borders/ classical transboundary rangeland issues, and wildlife-domestic interface
- **lack of confidence** in the vaccination approach to area wide FMD control

FMD is common and damaging disease – but who benefits and who should pay for control?



Background – the behaviour challenge : FMD control –what's in it for me?



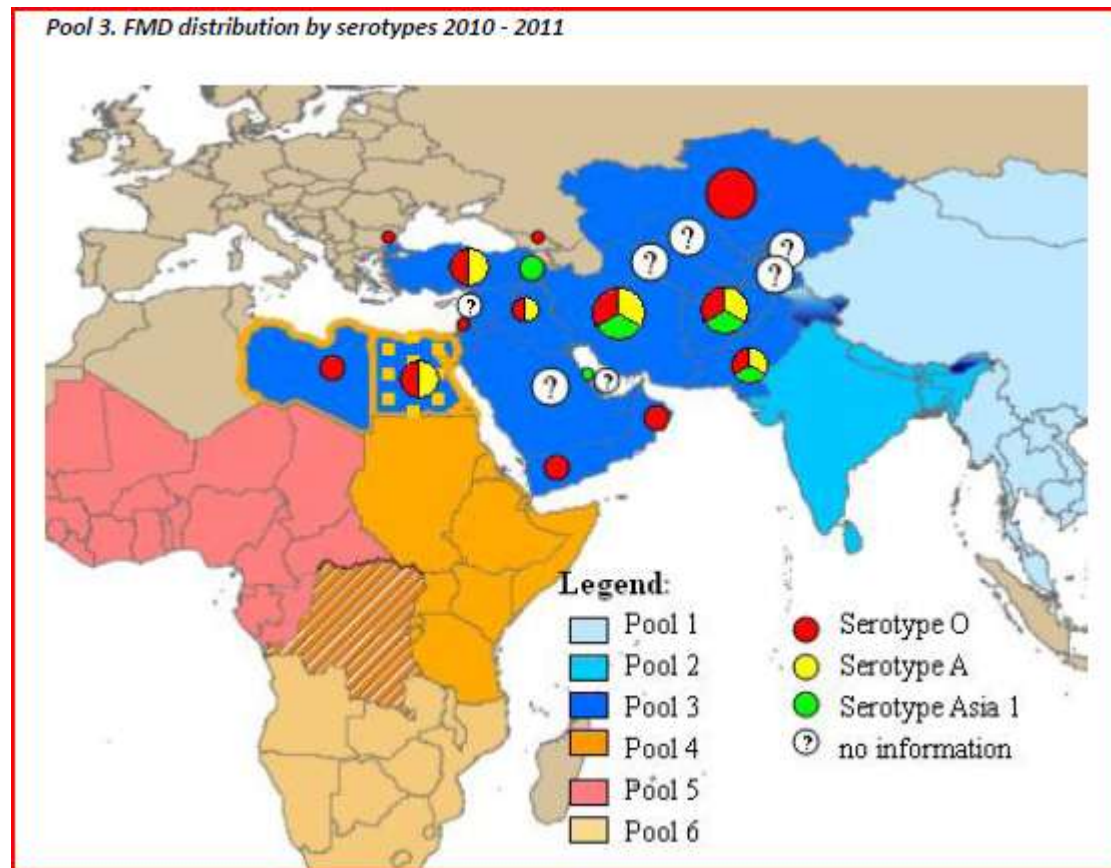
Background – the market chain challenge

- “if I was vaccinated, I would be less risk when traded”



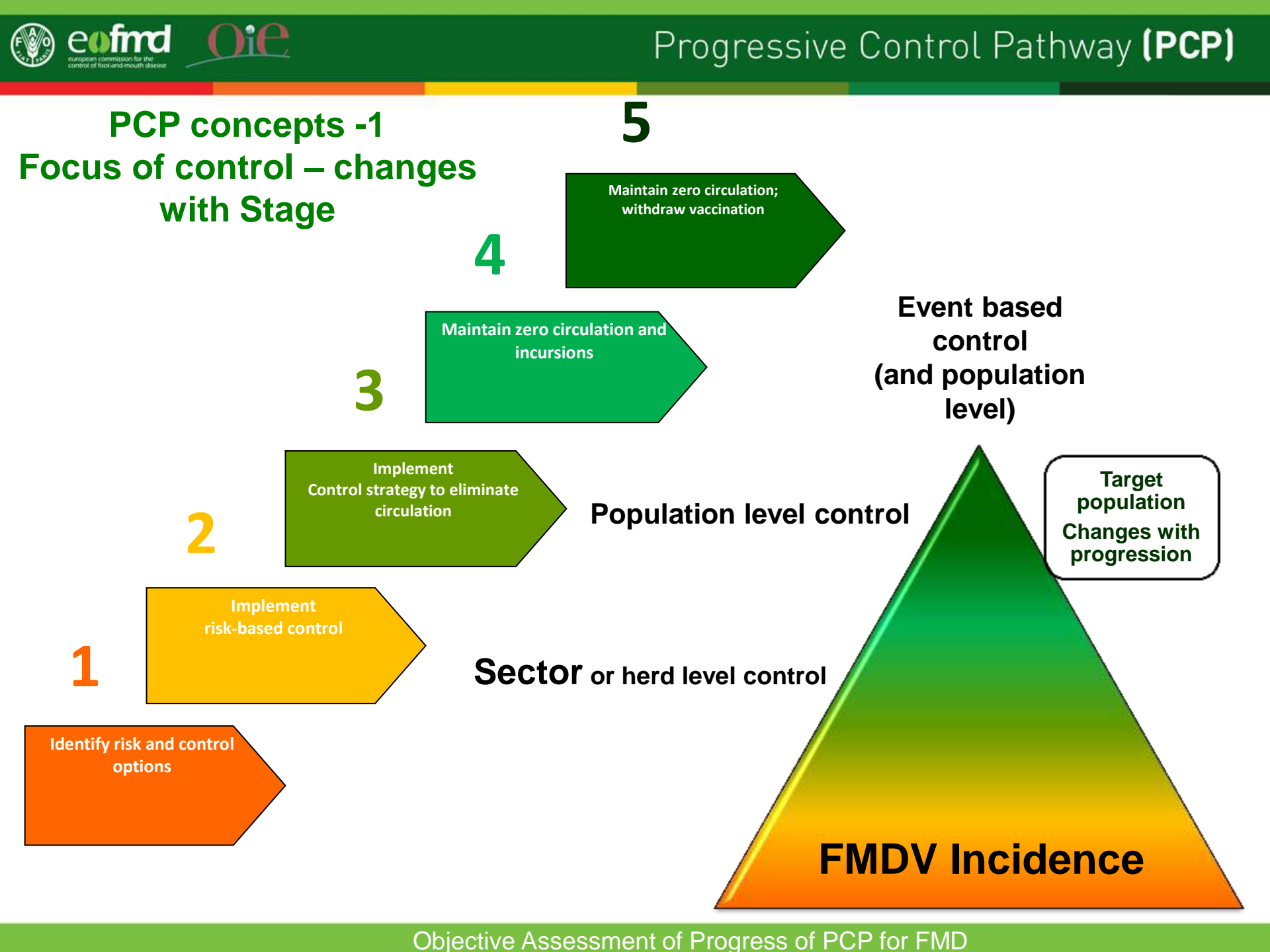
Background – the scale of under-reporting

Wagging fingers does not change behaviours



Faced with such challenges...the PCP –FMD needed to be :

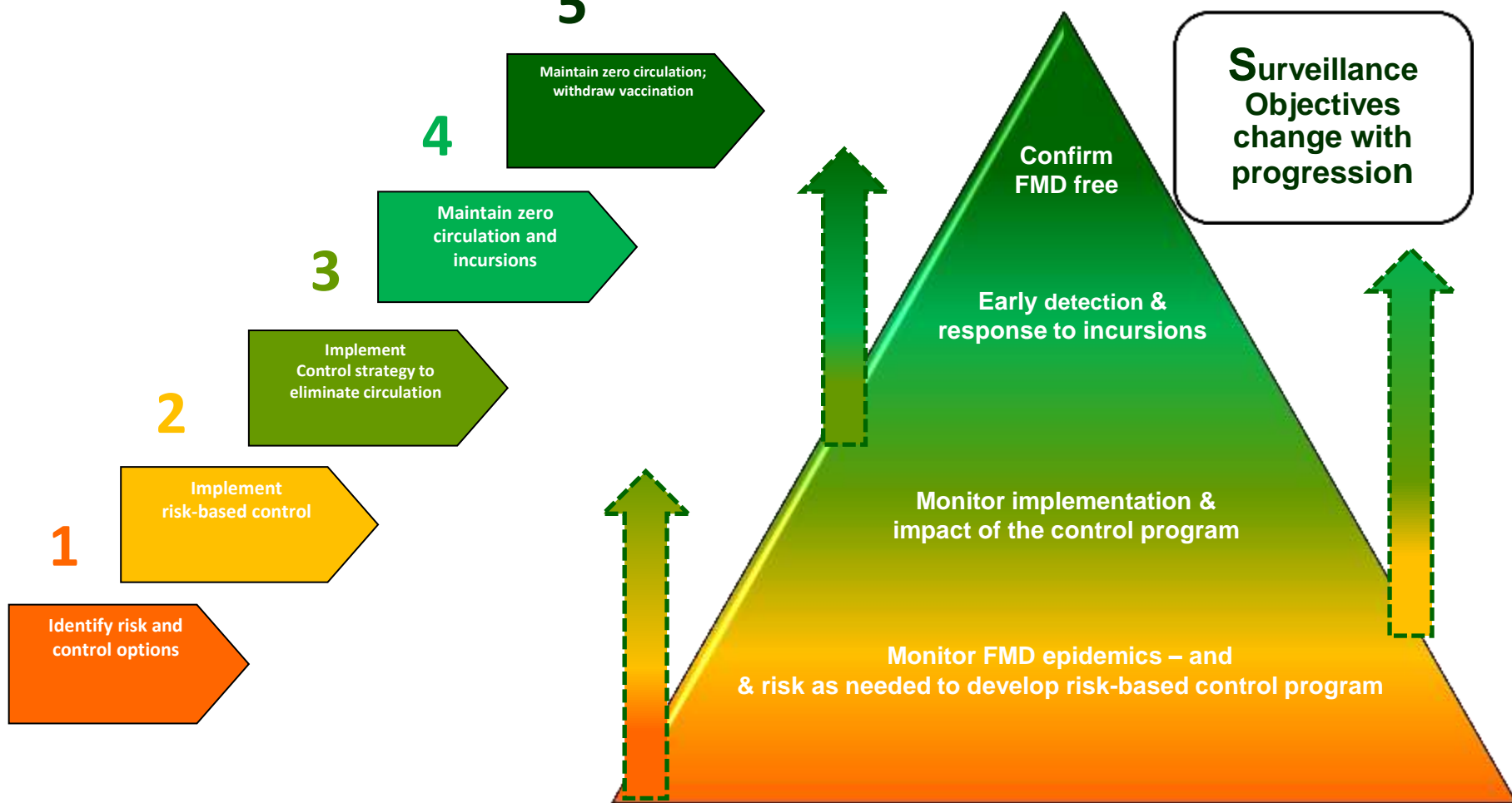
- **Simple** – to communicate, and apply
- **Comprehensive** – technically sound, critical factors for success are addressed
- **Credible** – progress must be validated with evidence
- **Progressive** – easy to enter, each stage a base for progress
- **Risk based** – with focus on optimising impact of limited resources, avoid prescriptions
- **Rewarding** – potential gains from every Stage
- **Objective** – promoting and rewarding active monitoring and the use of evidence
- **Environmentally neutral** – and part of the solution to develop integrated approaches involving wildlife



PCP Concept 2

Monitoring (and at higher levels – Surveillance) - is a key principle of the PCP

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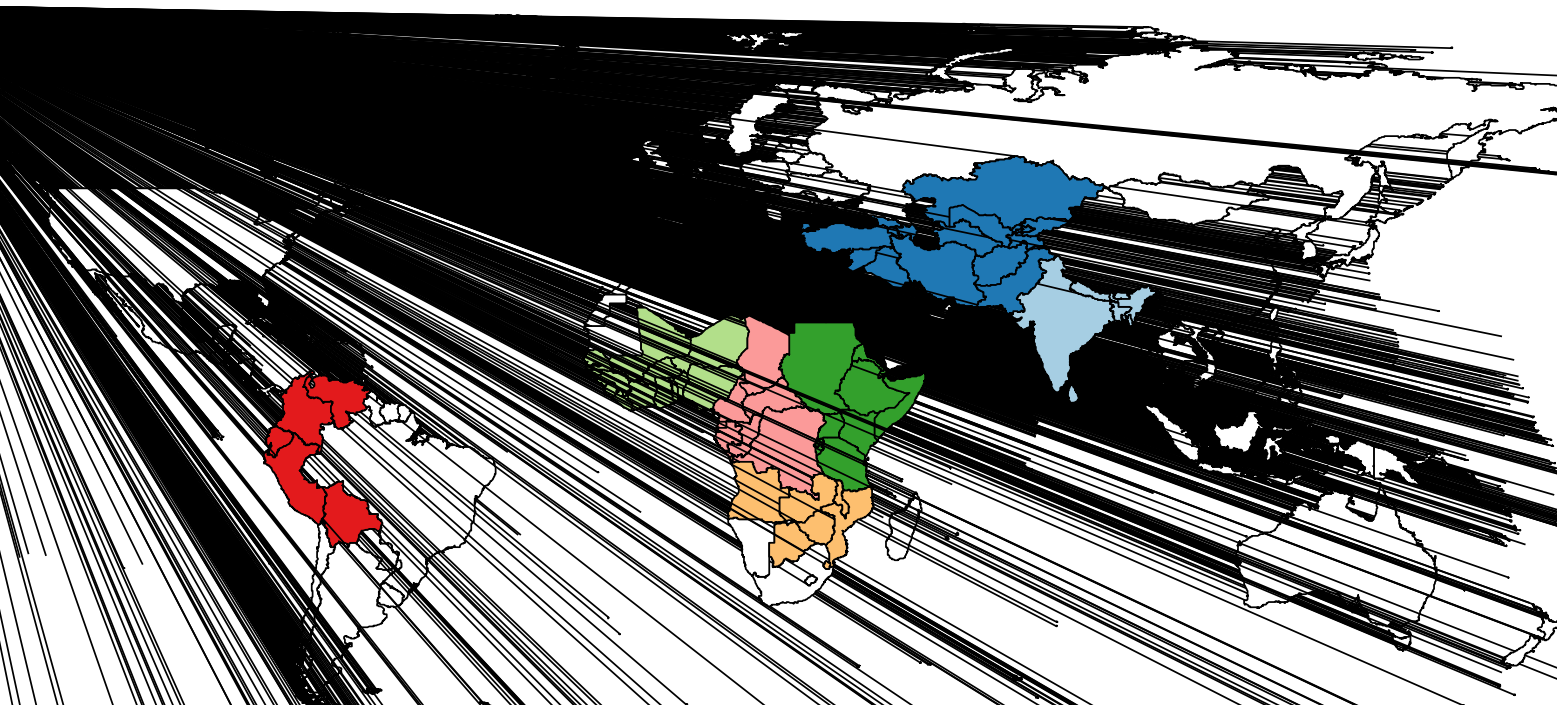


PCP – stepwise along the road

- Country Stages - facilitate progress monitoring
- at national and regional level
- Global scale -across Regional Roadmaps
- *and at every stage generates information for risk assessment*



Areas where PCP-FMD has been used- in assessment, and longer term planning



- South Asia
- West Eurasia
- Western Africa
- Eastern Africa
- Central Africa
- South America
- Southern Africa

Rationale.....

from Cricket

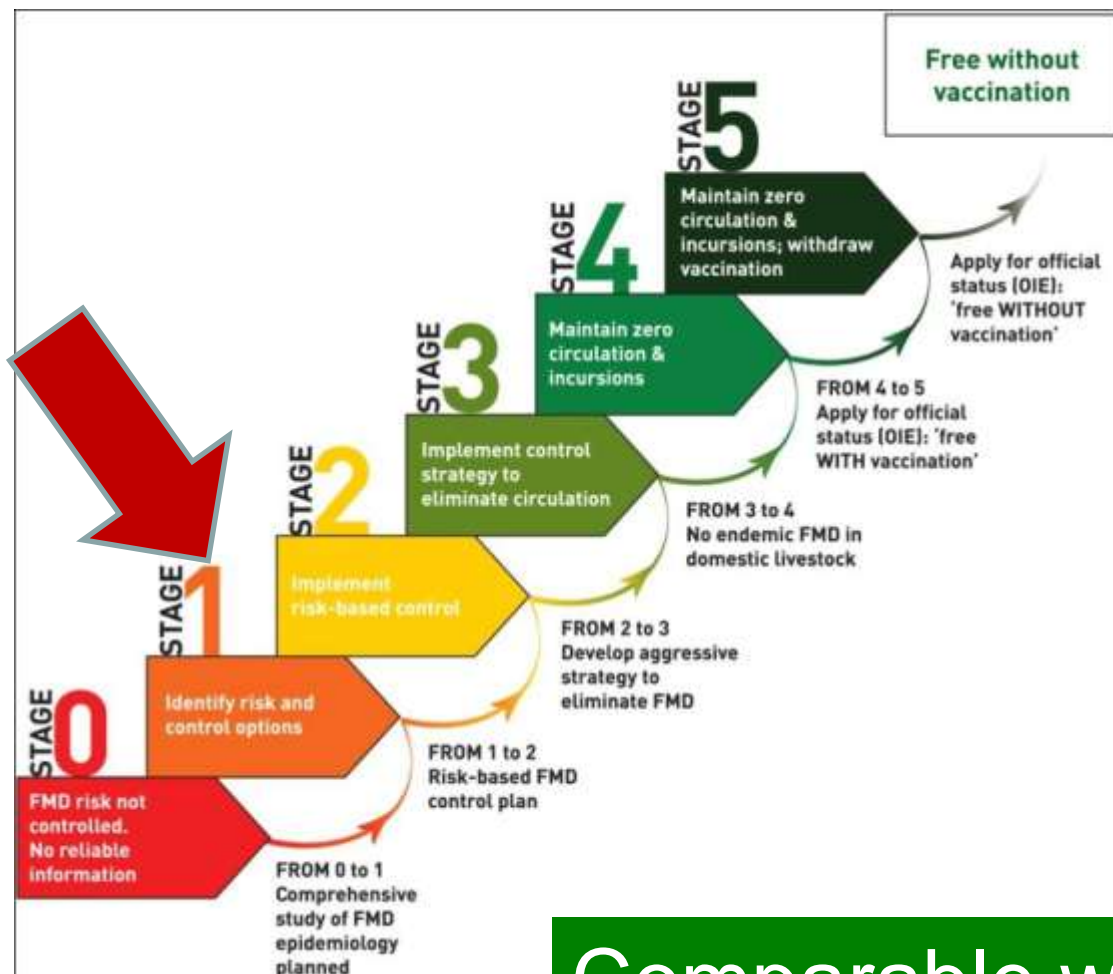
- Find your enemys weakness
- Plan your attack
- Stick to your strategy but re-assess regularly
- Measure progress
- Stop the opponent scoring
- Below the required run rate – they cannot win



Progressive Cricket Pathway

- One size does not fit all
 - Specialised teams and Strategy for EACH form of competition
- Accept the Road to the Top has steps – and temporary reverses
- Remember the opposition evolves, especially under pressure
- The higher you rise, the less you can relax – needs continual management support and investment
- And
- Sponsorship helps...but
 - noisy national support even more!
 - And media attention!!





PCP Stage 1 Focus: “To gain an understanding of the epidemiology of FMD in the country and develop a risk-based approach to reduce the impact of FMD ”

Comparable with Risk Assessment



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Comparable with Risk Assessment

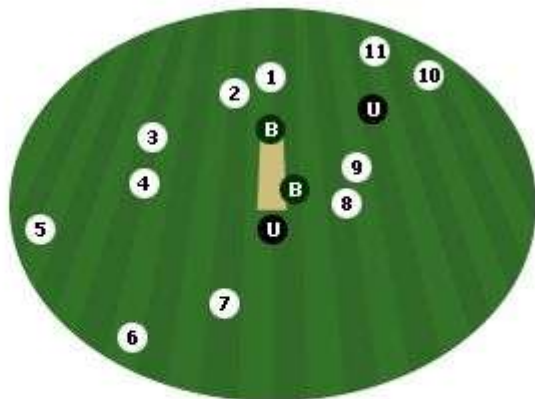


PCP Stage 2 Focus: “To implement risk based control measures such that the impact of FMD is reduced in one or more livestock sectors and/or in one or more zones”

Comparable with sector level Risk Management

Setting a defensive field

- 1 Wicketkeeper
- 2 First slip
- 3 Gully
- 4 Cover
- 5 Deep extra cover
- 6 Long off
- 7 Bowler
- 8 Mid-on
- 9 Mid-wicket
- 10 Deep square leg
- 11 Fine leg
- B Batsman
- U Umpire



A defensive field is often used if a team is conceding too many runs or if a bowler is struggling to bowl a regular line and length.

This field will limit the batsmen's run-scoring opportunities.

PCP Stage 2 Focus: “To implement risk based control measures such that the impact of FMD is reduced in one or more livestock sectors and/or in one or more zones”

Comparable with sector level Risk Management

PCP Stage 2 - examples of national strategies

- FMD as a public good
 - State supported vaccination to reduce DISEASE
 - State supported FMD control zones to protect the rest of the population (HIGH RISK areas)
- FMD as a private good:
 - Emphasis on private sector action to protect themselves
 - Private sector (stakeholders) can purchase quality vaccines
 - Public role is to monitor FMD risk, license vaccines, and communication.

PCP Stage 2 : other examples relevant to South Asia

- FMD control as private and public good:
 - Define sectors that can pay for their vaccination (smallholder dairy?)
 - Define zones where public funded control is for public good: e.g along borders, zones supplying animal markets.....
 - Reach stakeholder consensus, implement and monitor impact in each sector/zone
 - Examples:
 - State funded buffer zone vaccination, private sector vaccination elsewhere (Georgia)

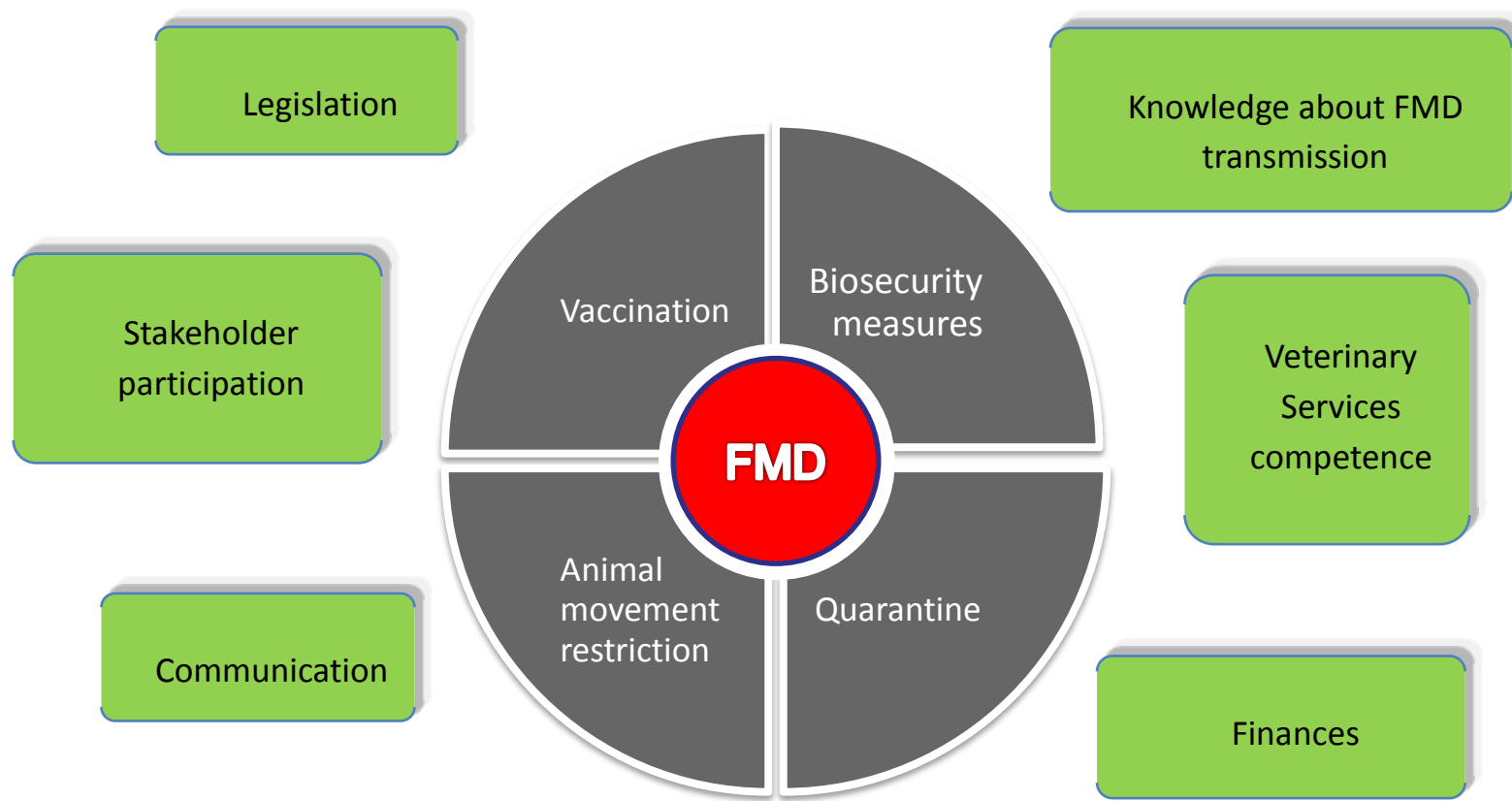
Stage 2 of the PCP: 5 outcomes

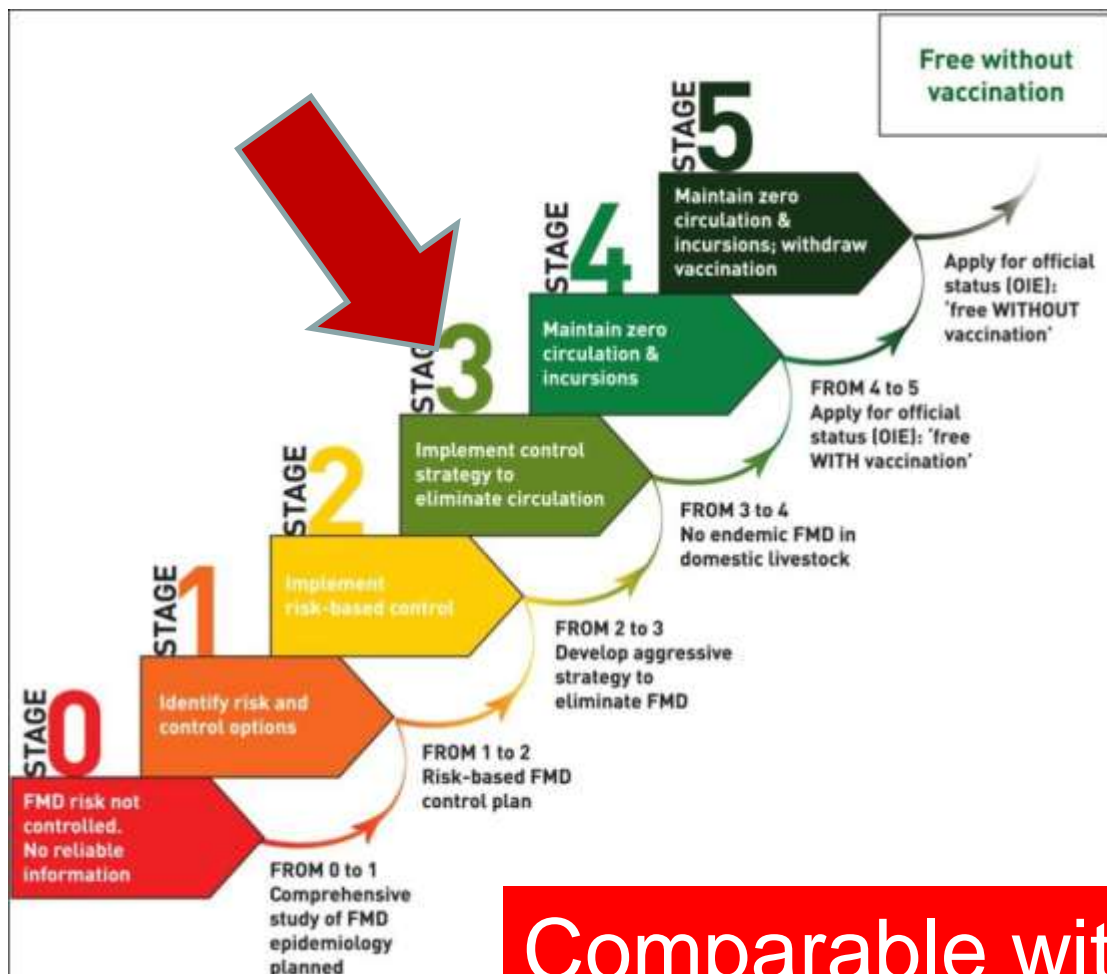
1. **Ongoing monitoring** of circulating strains and risk in different husbandry systems
2. Risk-based **control measures are implemented** for the sector or zone targeted, based on the FMD strategic control plan developed in Stage 1
3. It is clearly established that **the impact of FMD is being reduced** by the control measures in at least some livestock sectors and/or zones
4. There is further development of an **enabling environment** for control activities

AND TO PROGRESS TO STAGE 3:

5. A revised, more aggressive control strategy that has the aim of eliminating FMD from at least a zone of the country has been developed

Risk management FMD control





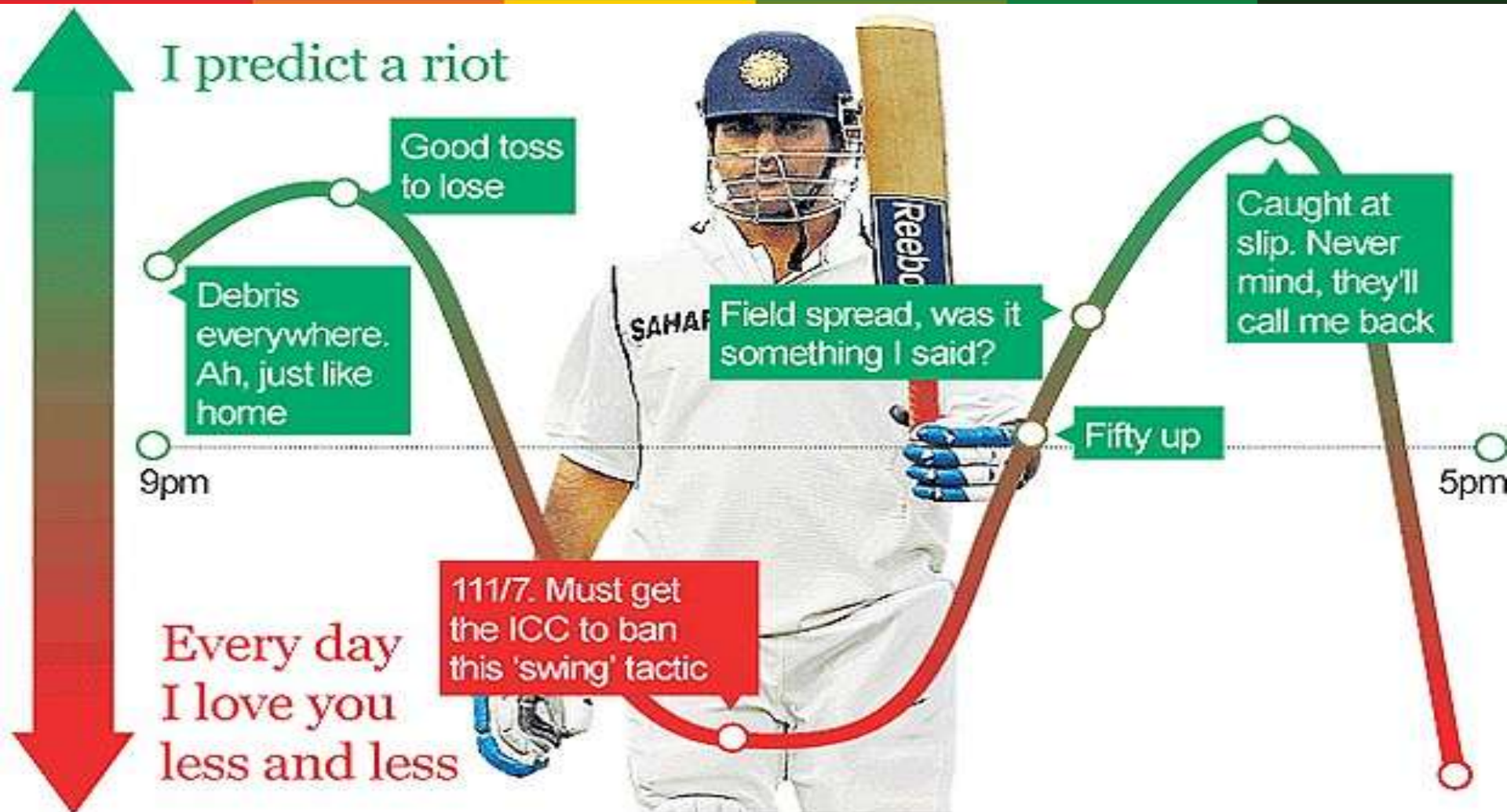
PCP Stage 3 Focus:

“Progressive reduction in outbreak incidence, followed by elimination of FMD virus circulation in domestic animals in at least one zone of the country”

Comparable with population level Risk Management

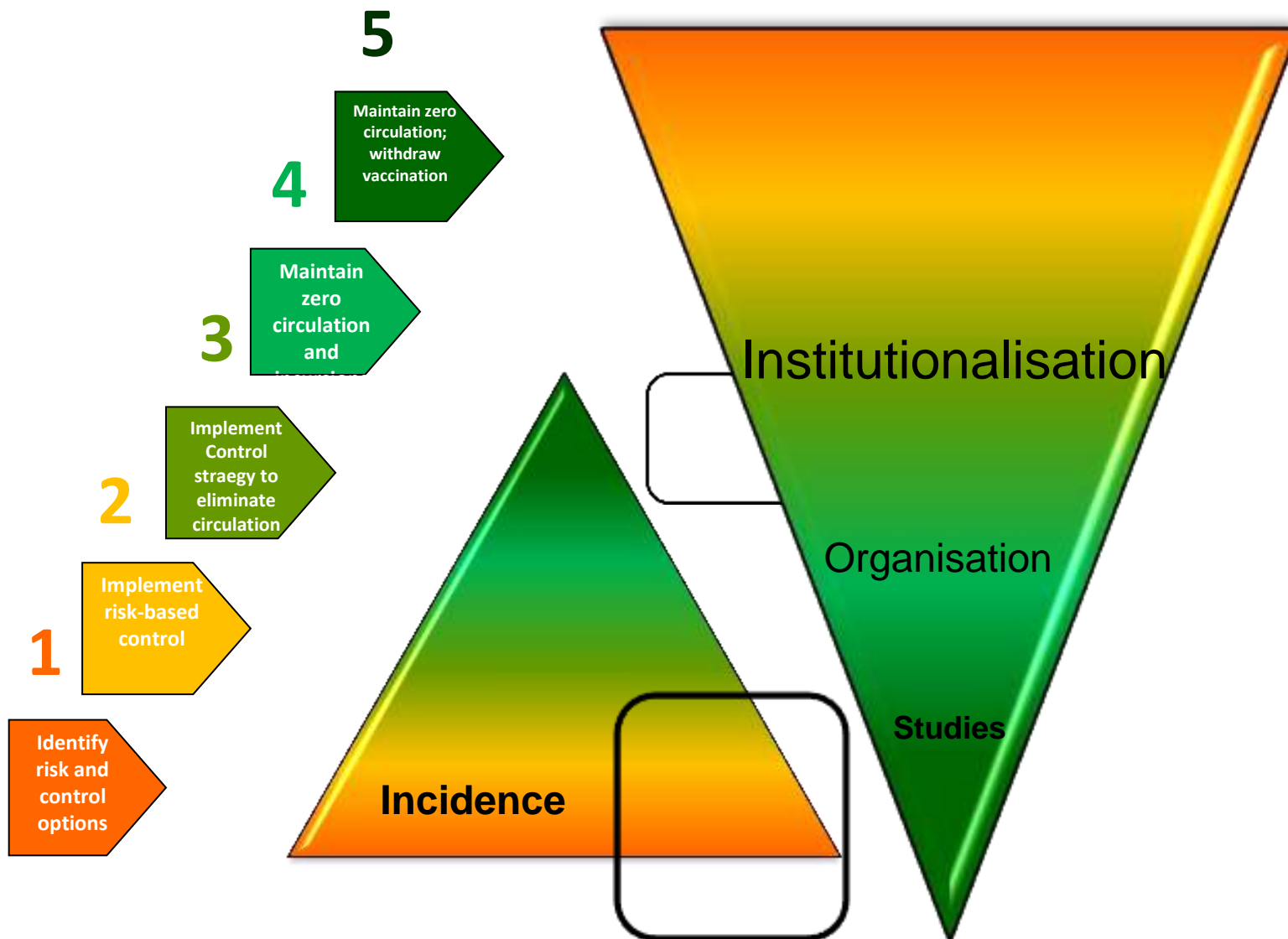


Comparable with population level
Risk Management



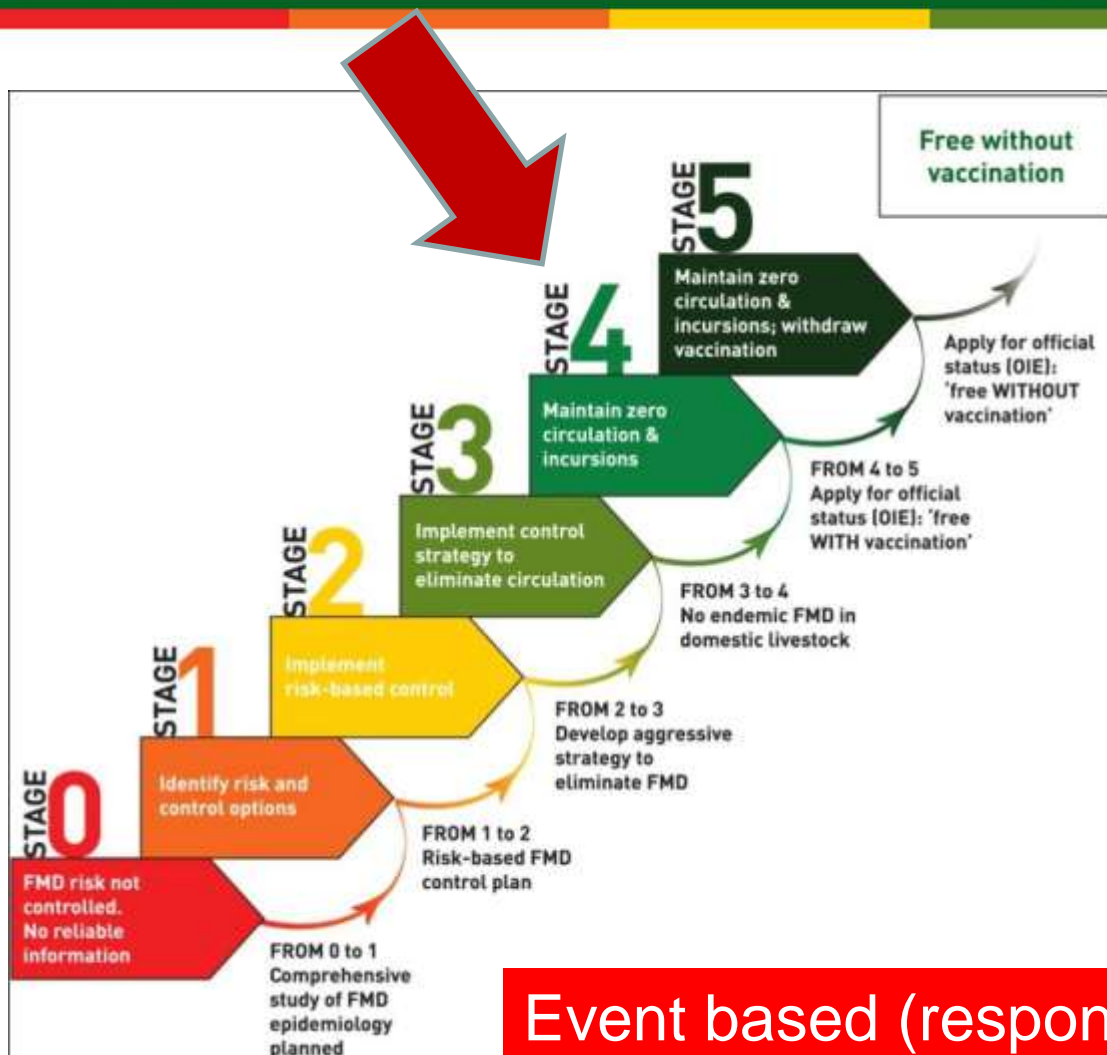
Comparable with population level
Risk Management

Moving up means institutionalisation of FMD control



AND (TO Repeat) – to PROGRESS TO STAGE 4:

There is a body of evidence that FMD virus is not circulating endemically in domestic animals within the country or zone



PCP Stage 4 Focus: “To maintain ‘zero tolerance’ of FMD within the country or zone and eventually achieve OIE recognition of FMD-free with vaccination”

Event based (respond/eliminate) control - in addition to population level risk management



PCP Stage 4 Focus: “To maintain ‘zero tolerance’ of FMD within the country or zone and eventually achieve OIE recognition of FMD-free with vaccination”

(/eliminate) control - in
level risk management

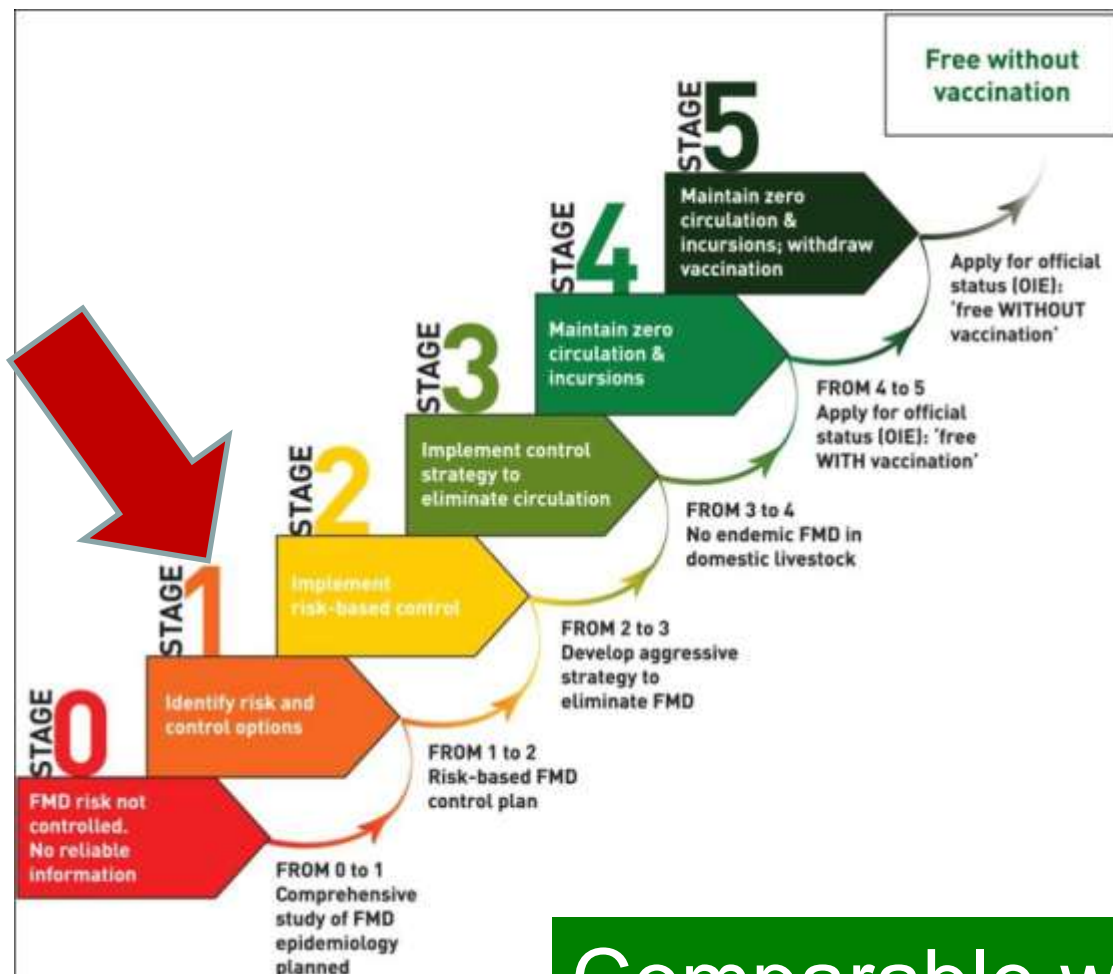


PCP Stage 5 Focus: “To maintain ‘zero incidence’ of FMD within the country/zone and eventually achieve OIE recognition of FMD-free without vaccination”

Event based (respond/eliminate) control - in non-vaccinated populations

The PCP in practice

Use as a Tool - defining activities and gaps.
Assessment.



PCP Stage 1 Focus: “To gain an understanding of the epidemiology of FMD in the country and develop a risk-based approach to reduce the impact of FMD ”

Comparable with Risk Assessment

AND TO PROGRESS TO STAGE 2:

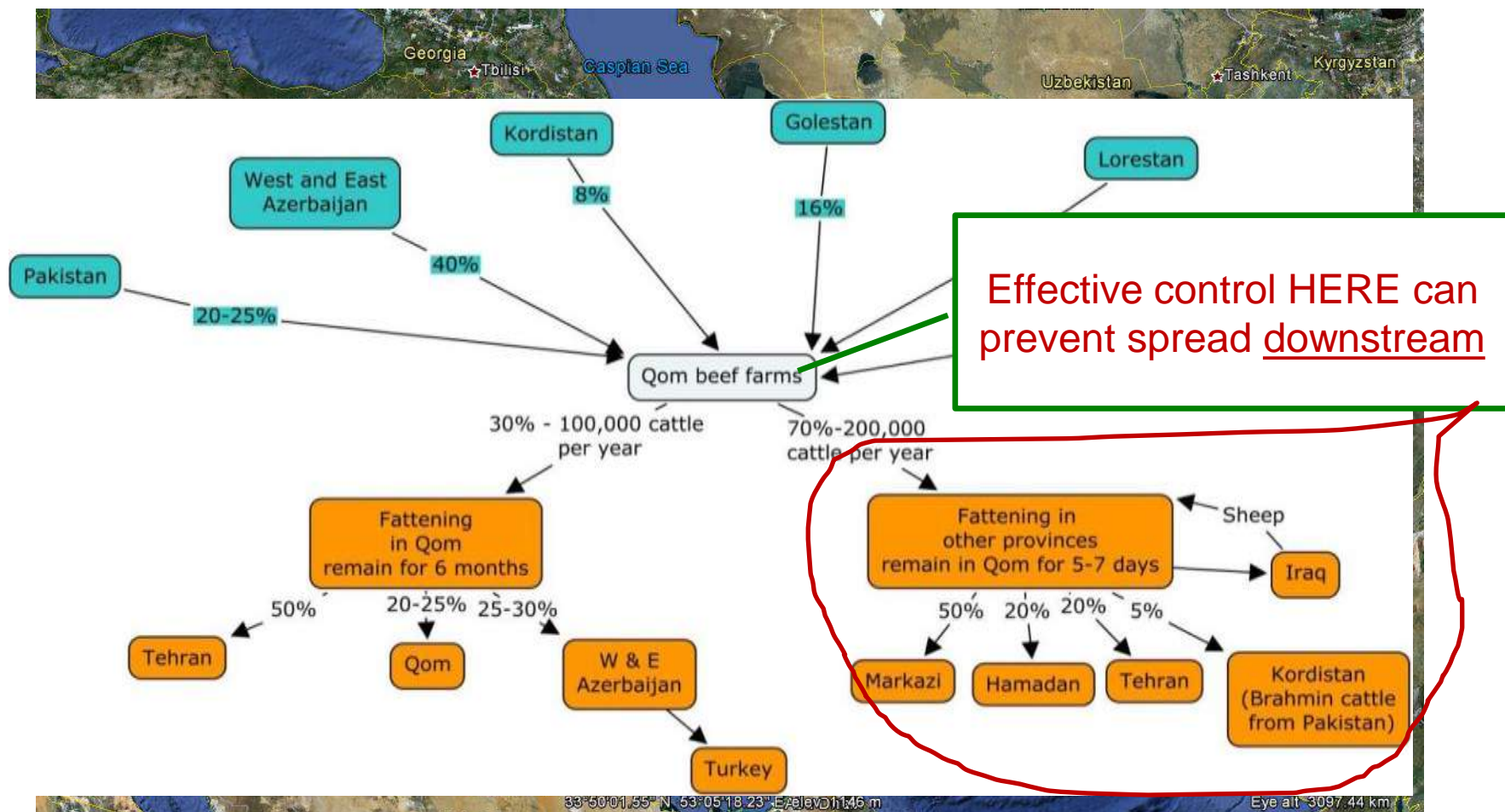
- 8. A strategic FMD control plan that has the aim of reducing the impact of FMD in at least one zone or husbandry sector is developed***

Stage 1 of the PCP: 8 outcomes

1. Husbandry systems.....are described and understood
2.a 'working hypothesis' of how FMD virus circulates in the country has been developed
3. Socio-economic impacthas been estimated
4. The most common circulating strains of FMDV identified
5.progress towards an enabling environment for control activities
6. transparency and commitment toregional FMD control
7. Important risk hotspots for FMD transmission are identified

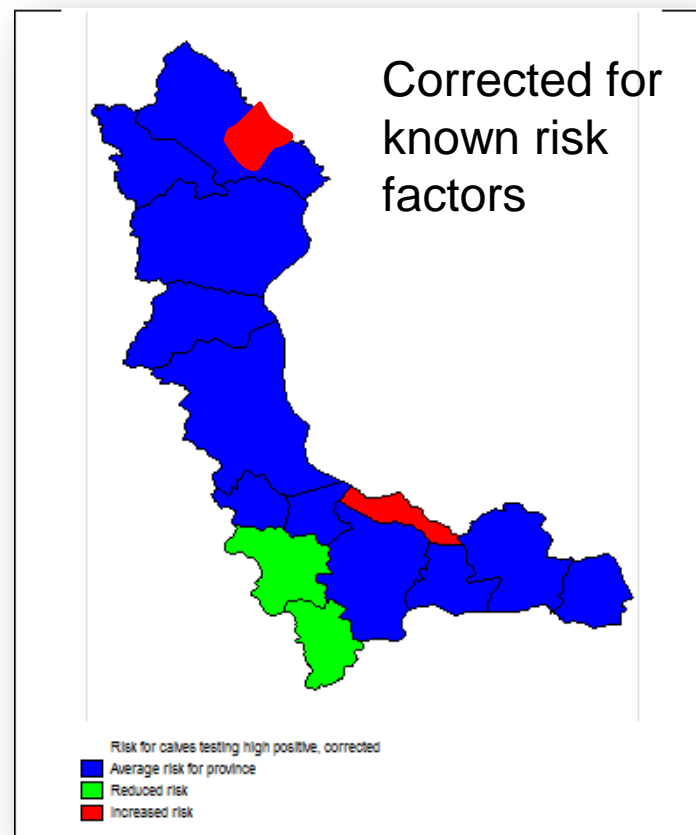
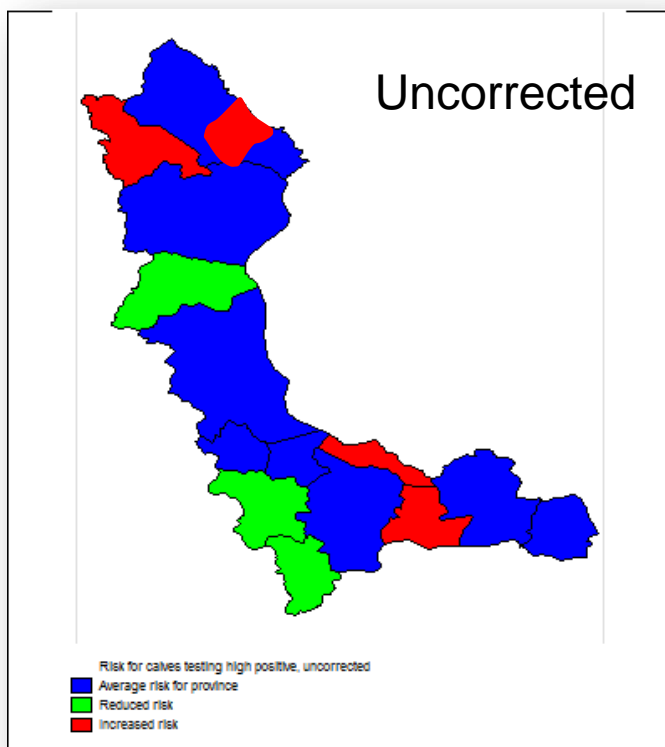
Stage 1 examples: Value chain analysis in Iran

- Understanding animal movement patterns can be critical for planning effective FMD control



Iran serosurvey

Risk of NSP seropositivity in West Azarbaijan province



- Can be useful to target control
- Baseline for comparison after interventions introduced

Strategic FMD control plan written

(1)

(2) میزبان حساس Susceptible host : میزبانی که عامل بیماری در آن بتواند ایجاد بیماری بالینی بنماید.

انتقال بیماری در اثر تماس Contact transmission : نوعی از انتقال که در اثر تماس مستقیم یا غیر مستقیم بین حیوان آلوده و حیوان حساس ایجاد می شود. انتقال از طریق تماس مستقیم (direct contact) در بیماریهای آمیزشی می باشد و انتقال از طریق تماس غیر مستقیم (Indirect contact) در اثر آلودگی حیوان

Assessment of national PCP stage



Tool 1: Self Assessment

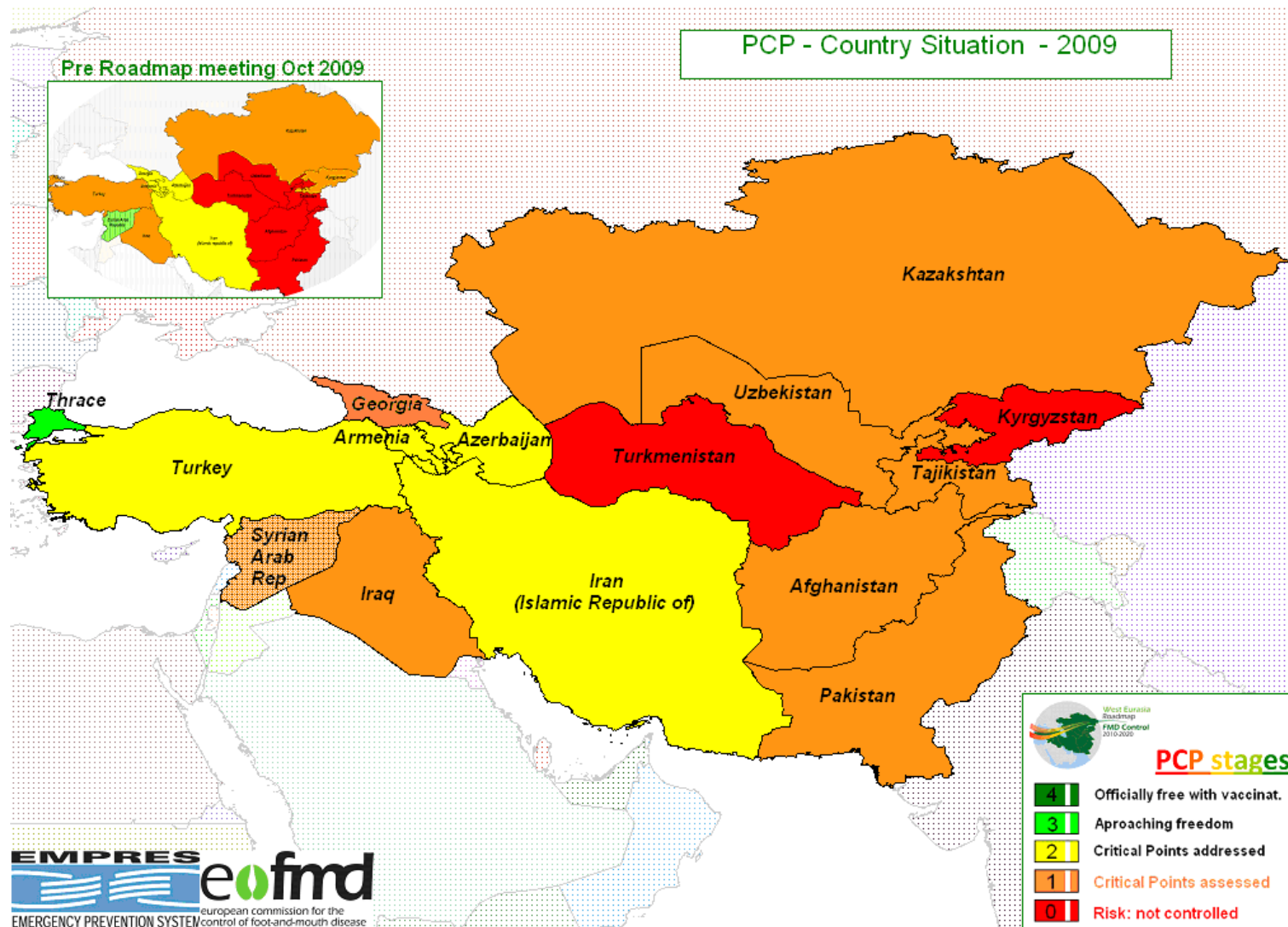
- Written questionnaire for veterinary services:
 - Follows PCP Guidelines – Outcomes for each Stage
 - Questions based on defined criteria and questions -each Outcome
 - Yes/no answers explained by manual
 - Minimum Requirements differ by outcome
 - Yearly completion - to retain status, demonstrate commitment
- Enables PCP- Gap Analysis
- Enables review/revision of forecast progress
- Yearly completion recommended

Tool 2: External Assessment

- External assessment includes
 - FAO (and OIE experts) reviewing national self-assessments
 - Expert review with national authorities - FAO/OIE Workshops
 - Country visits – assessment with national representatives
 - Regional Meetings with opportunities for countries to assess presented progress reports -peer-to-peer scrutiny
- Comparison of progress on paper – with evidence from monitoring and surveillance reports
- Year to Year change -both “paper” and direct measures (incidence)

Assessment of PCP Stages –West Eurasia FMD Roadmap

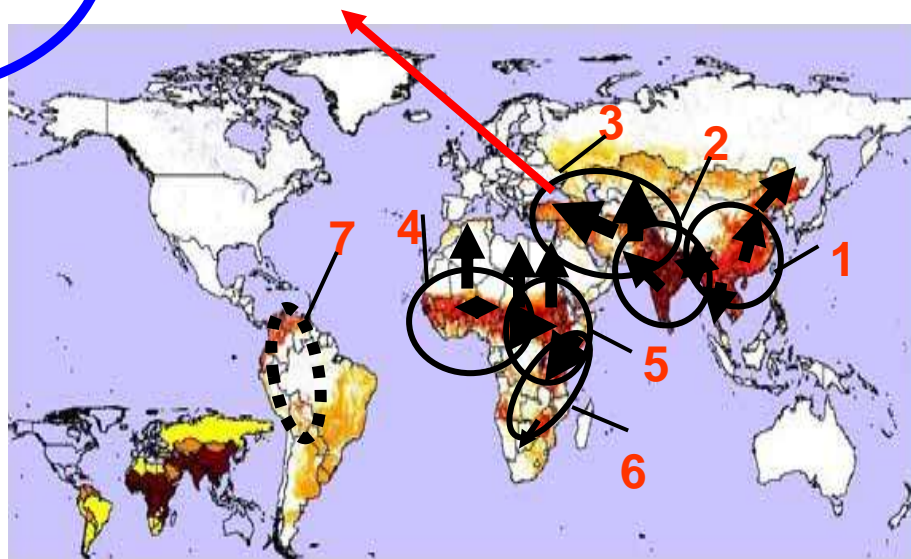
- 2008: self-assessment by countries with peer review (FAO)
- 2009 (Istanbul):
 - upon submission of evidence of actions required at each stage
 - presentation/review at Regional Meeting
 - 2 month period post-Meeting to supply information , if required
- 2009: Roadmap progress *on track*
- 2010: second Progress Review . Used modified PCP following October 2010 review.



West-Eurasia regional roadmap

		West Eurasia Regional Roadmap												
		2008 Shiraz	2009 Istanbul	2010 Istanbul	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
West Eurasia	Afghanistan													
	Armenia													
	Azerbaijan													
	Georgia													
	I.R. Iran													
	Iraq													
	Kazakhstan													
	Kyrgyzstan													
	Pakistan													
	Syria													
	Tajikistan													
	Turkey													
	Turkey Thrace													
	Turkmenistan													
Uzbekistan														

	N	Z
Level 0		
Level 1		
Level 2		
Level 3		
Level 4		
Level 5		

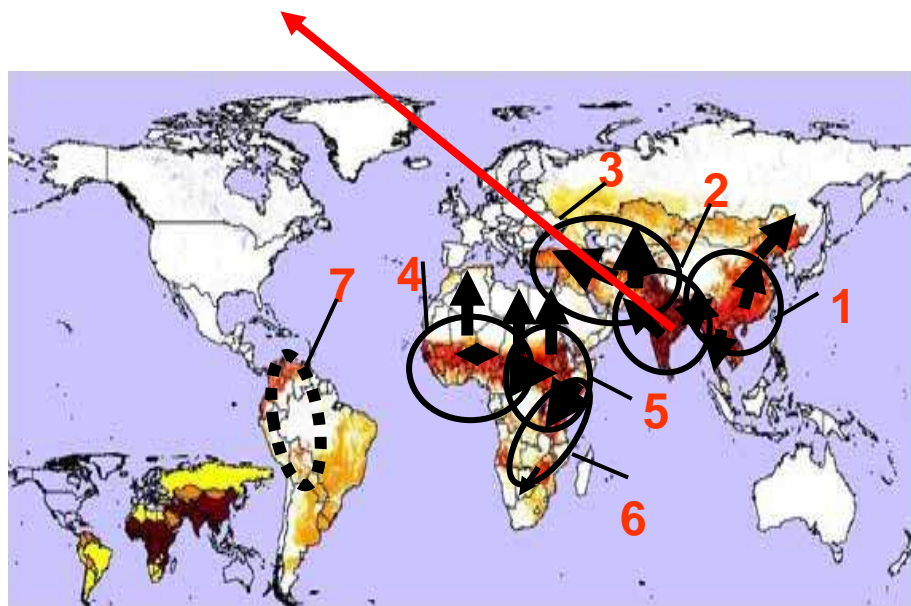


Regional Roadmap (2010 – prior to Regional Consultation) (South Asia - Pool 2)(To be updated at Delhi – Feb 2011)

Countries		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
South Asia	Afghanistan*											
	Pakistan*											
	India											
	Nepal											
	Bhutan											
	Bangladesh											
	Sri Lanka											

* Afghanistan and Pakistan are participating in the West Eurasia roadmap

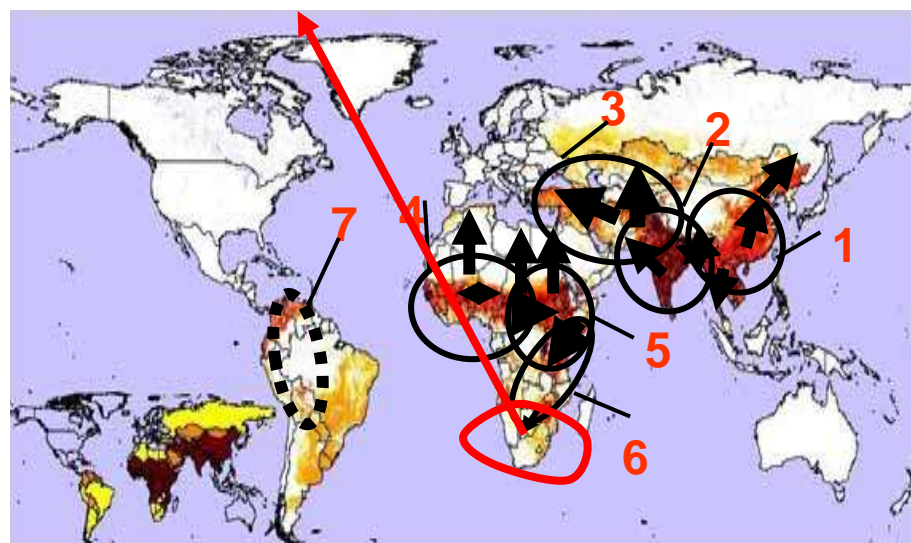
	N	Z
Level 0		
Level 1		
Level 2		
Level 3		
Level 4		
Level 5		



Outlook of Southern Africa Regional Roadmap (FAO-OIE meeting in Gaborone, March 2011)

Countries	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Congo (Dem. Rep. of the)	1	1	1	1	2	2	2	2	2	3
Angola	1	1	1	2	2	2	3	3	3	3
Angola zone						3	3	3	3	3
Tanzania	1	1	2	2	2	2	2	2	2	3
Islands (Mafia, Zanzibar, Pemba)	1	1	2	2	2	3	3	3	3	4?
Malawi	3	3	3	3	3	3	3	3	3	3
Malawi zone				4	4	4	4	4	4	4
Mozambique	2	2	3	3	3	3	3	3	3	3
Moz zone (Tete, Manica)						5	5	5	5	5
Moz zone (south)					4	4	4	4	4	4
Seychelles	HF	5	5	5	5	5	5	5	5	5
Swaziland	5	5	5	5	5	5	5	5	5	5
Zambia	2	2	3	3	3	3	3	3	3	3
Zambia zone				5	5	5	5	5	5	5
Zambia zone (East)						5	5	5	5	5
Zimbabwe	1	2	3	3	3	3	3	3	3	3
zonal (highest PCP)			3	3	5	5	5	5	5	5
Botswana	3z/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5

	N	Z
Level 0		
Level 1		
Level 2		
Level 3		
Level 4		
Level 5		

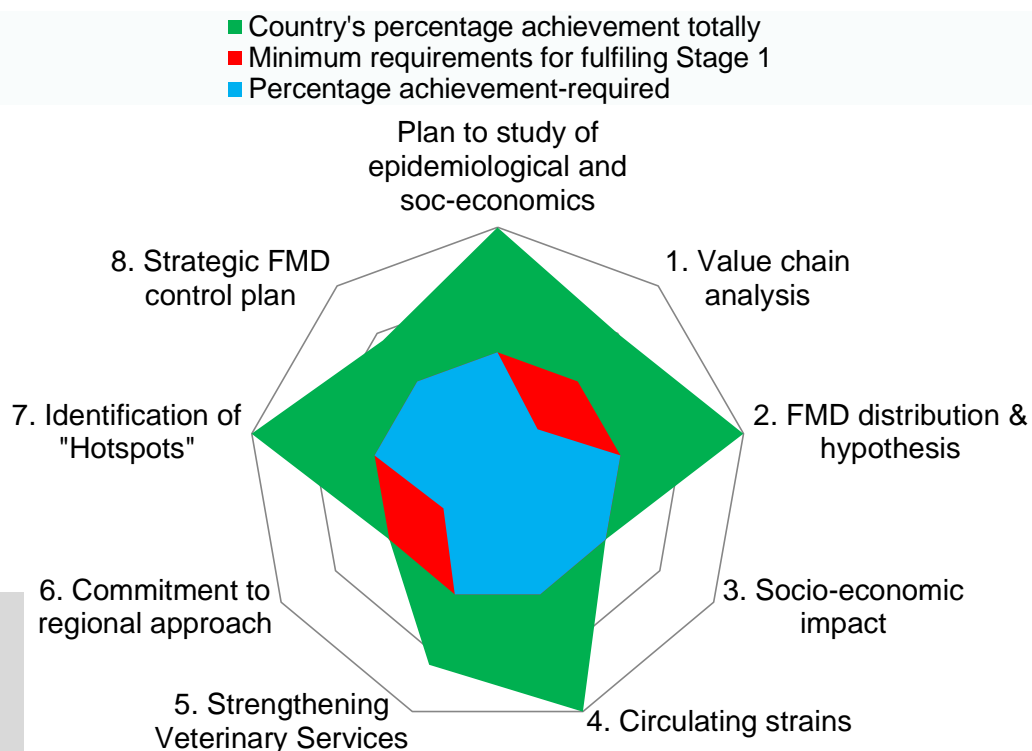


Assessment of PCP Stage 1: checklist for the 8 Outcomes

	Achievement	Total number of issues asked for	Minimal number of issues required	Additional number of issues requested
To enter Stage 1	To have a comprehensive plan to <u>study epidemiology and socio-economics</u> of FMD	7	4	3
Outcome 1	All husbandry systems, the livestock marketing network and associated socio-economic drivers are well described for FMD susceptible species	12	10	2
Outcome 2	Describe the FMD distribution and develop <u>working hypothesis</u> of how FMD circulates	9	5	4
Outcome 3	Estimate <u>socio-economic impact</u> on different stakeholders	3	3	0
Outcome 4	ID circulating strains	3	1	2
Outcome 5	Development of enabling environment, strengthening VS	8	3	5
Outcome 6	Demonstrate transparency and <u>commitment</u> to FMD control in region	2	2	0
<u>Outcome 7</u>	<u>Identify</u> important risk <u>hotspots for FMD transmission</u>	3	1	2
Outcome 8	To adopt a <u>strategic FMD control plan</u> , based on risks and soc.econom. impacts	10	3	7

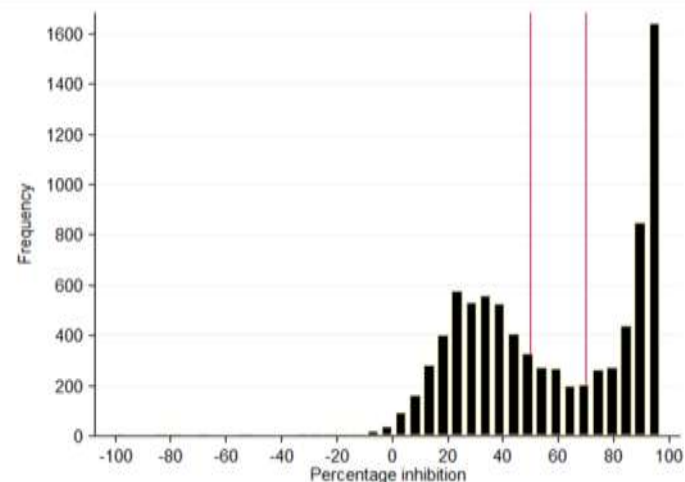
Assessment checklist –and output as spiderweb chart

Outcome	Criteria	Questions	Checklist -Y/N -Not applicabl e
To enter Stage 1	Plan is comprehensive	1.1 Is there a written plan in place to study the epidemiology and socioeconomic impact of FMD?	1
		1.2 Does the plan include a study of the structure of livestock production throughout the country for all FMD susceptible species (cattle, sheep, goats)?	0
To have a comprehensive plan to study epidemiology and socio-economics of FMD		1.3 Does the plan include activities to estimate FMD prevalence?	1
	Quality indicators	1.4 Does the plan include a timeline for activities?	1
		1.5 Does the plan include a budget estimate for each activity?	1
		1.6 Does the plan describe the organisational structure to carry out the study (defined roles and responsibilities, nominated persons)?	1
		1.7 Have any of the activities described in the plan been initiated?	1
Outcome 1	stakeholders	Stake holders include farmers/producers PLUS all of the main players (people, organizations, companies) involved in breeding, transport of animals, milk/meat processing, feeding and marketing of animals. There could be scoring for these questions: identified all, most, some, none	
		1.8 Have key stakeholders involved in cattle production been identified?	0
		1.9 Have key stakeholders involved in small ruminant production been identified?	0
All husbandry systems, the livestock marketing network and associated socio-economic drivers are well described for FMD susceptible species		1.1 Have key stakeholders involved in swine production been identified?	0
		Information should be available about numbers, origin and destination, drivers or motives for the movement and any seasonal patterns there could be scoring based on how completely movements have been described (eg origin and destination known but not numbers, or for commercial farms only...)	
		1.1 Are movements of animals within the country well understood for cattle?	0

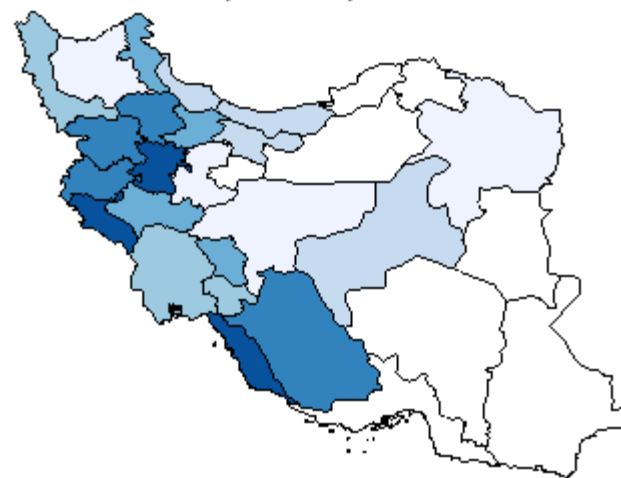


Verifiable indicators: results from monitoring

- **Sero-monitoring:**
 - Incidence (NSP serology, options)
 - Year-on-year change
 - Performance of vaccination
- Auditing of vaccination implementation
- Performance of movement control systems
- Surveillance –performance of different components
- Virological – for indicators of incursions and internal movements



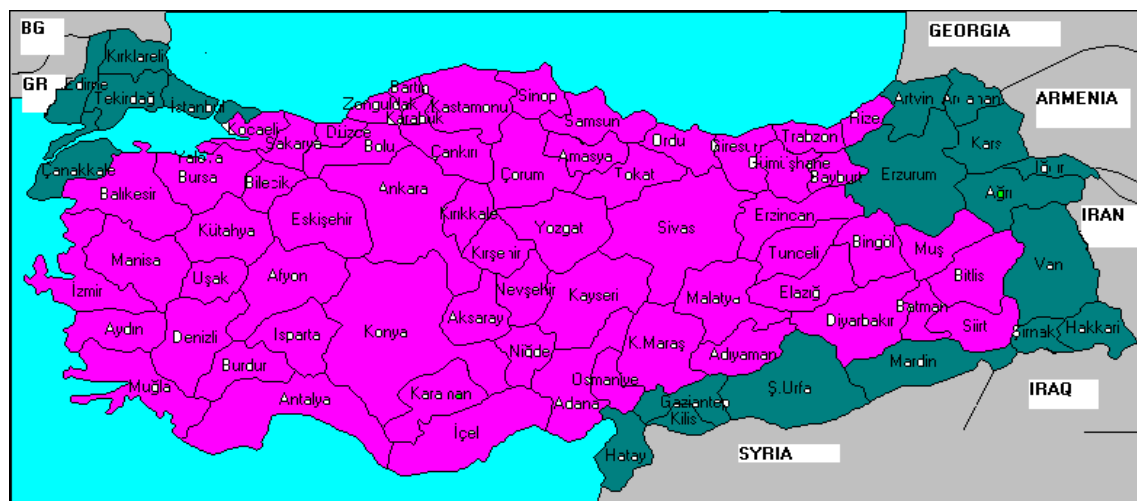
FMD Vaccination Coverage
Epi-Unit, Sept 2011



Example – Turkey

- One zone FMD free with vaccination (Current Status suspended)
- Anatolia – PCP Stage 2
- Mass vaccination programmes – all LR (twice), SR (once)
- 4 times more SR than LR in infected zone
- 2009-2010: **RECORD achievement** in vaccination coverage
- 2010: massive epidemic type O (Panasia 2, ANT-10 lineage)

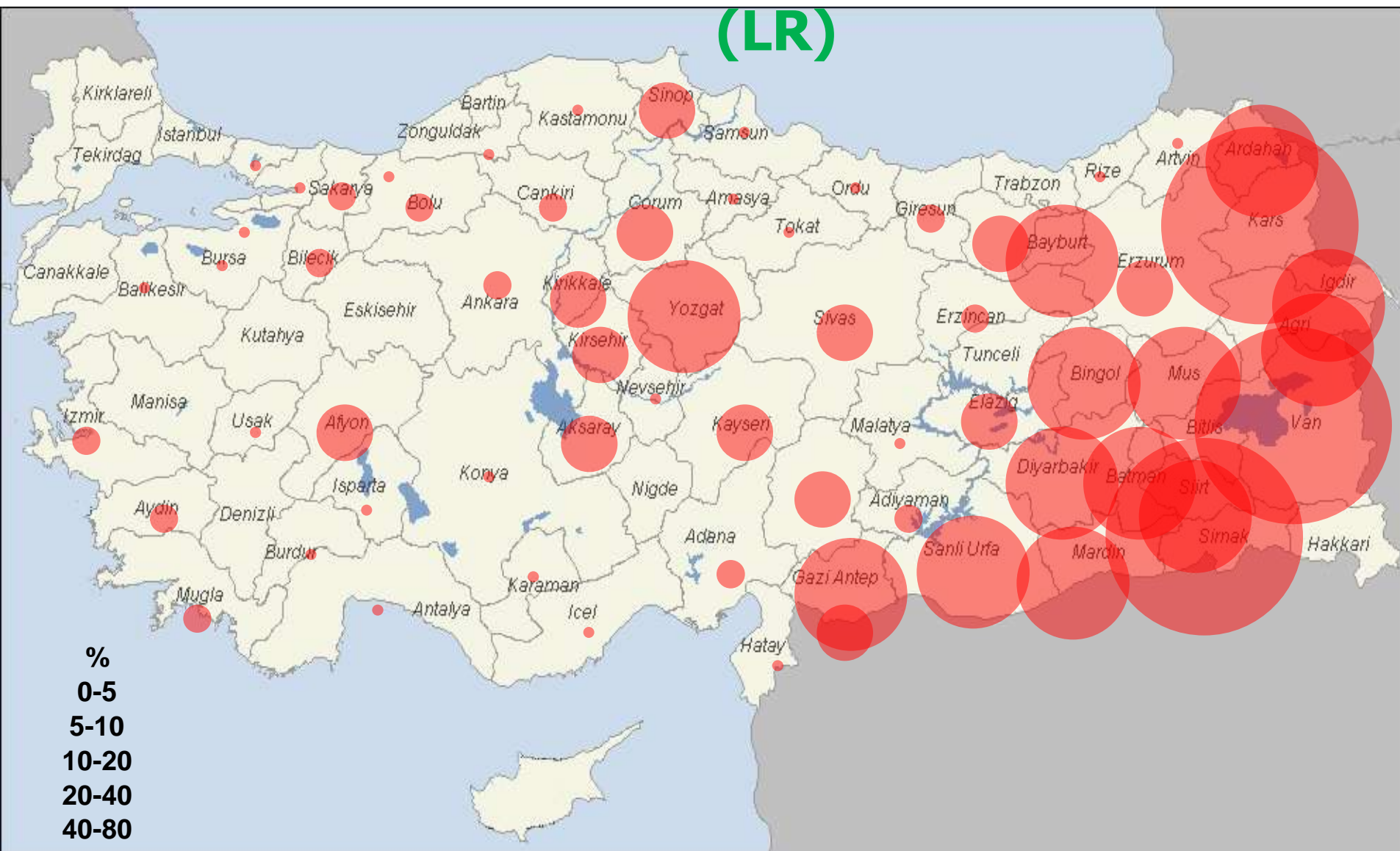
- **1715 outbreaks**
- **Spread to EU**
- **Political disaster**



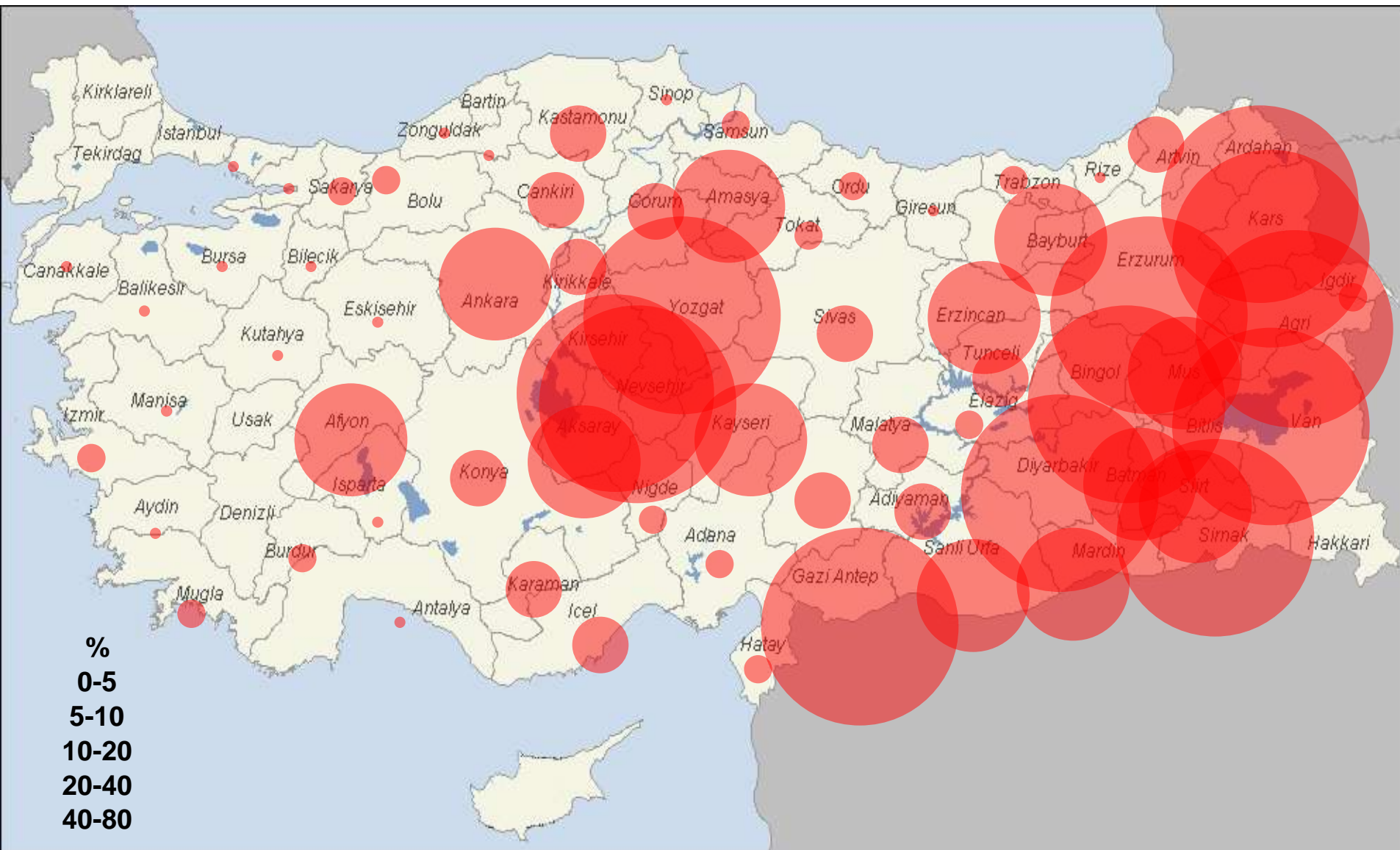
Comparison of FMD Situation in 2009 and 2010

- Sero-surveillance
 - In 2009: 4.7% (LR 4-12 months)
 - In 2010: 12.7% (LR 4-12 mo)
- Number of outbreaks;
 - In 2009: 214 (at spring serosurvey: 81)
 - In 2010: 1715 (at spring serosurvey: 432)
- Average number of animals with clinical disease per outbreak;
 - In 2009: 15,8
 - In 2010: 44,0 (variation - 0.6 to 23%, by Province)
- Epidemic outbreak numbers a poor guide to level of control
- Monitoring -better to use routine report data, sero-surveillance and outbreak investigation in an integrated assessment

2010 : DISTRIBUTION OF NSP PREVALENCE (LR)



2010 : NSP PREVALENCE -SR



Turkey -Estimated Prevalence (NSP) by Age

FOR LR (2009-2010)					
				2010 (%)	2009 (%)
4-12				12,77	4,77
12-18				10,28	10,30
18-24				14,29	14,18
TOTAL				12,34	8,07

For SR (2010)

AGE GROUP	NEG	POS	TOTAL	%
12-18	11730	2749	14479	18,99
18-24	1264	401	1665	24,08
4-12	12419	2033	14452	14,07
TOTAL	25987	5382	31369	17,16

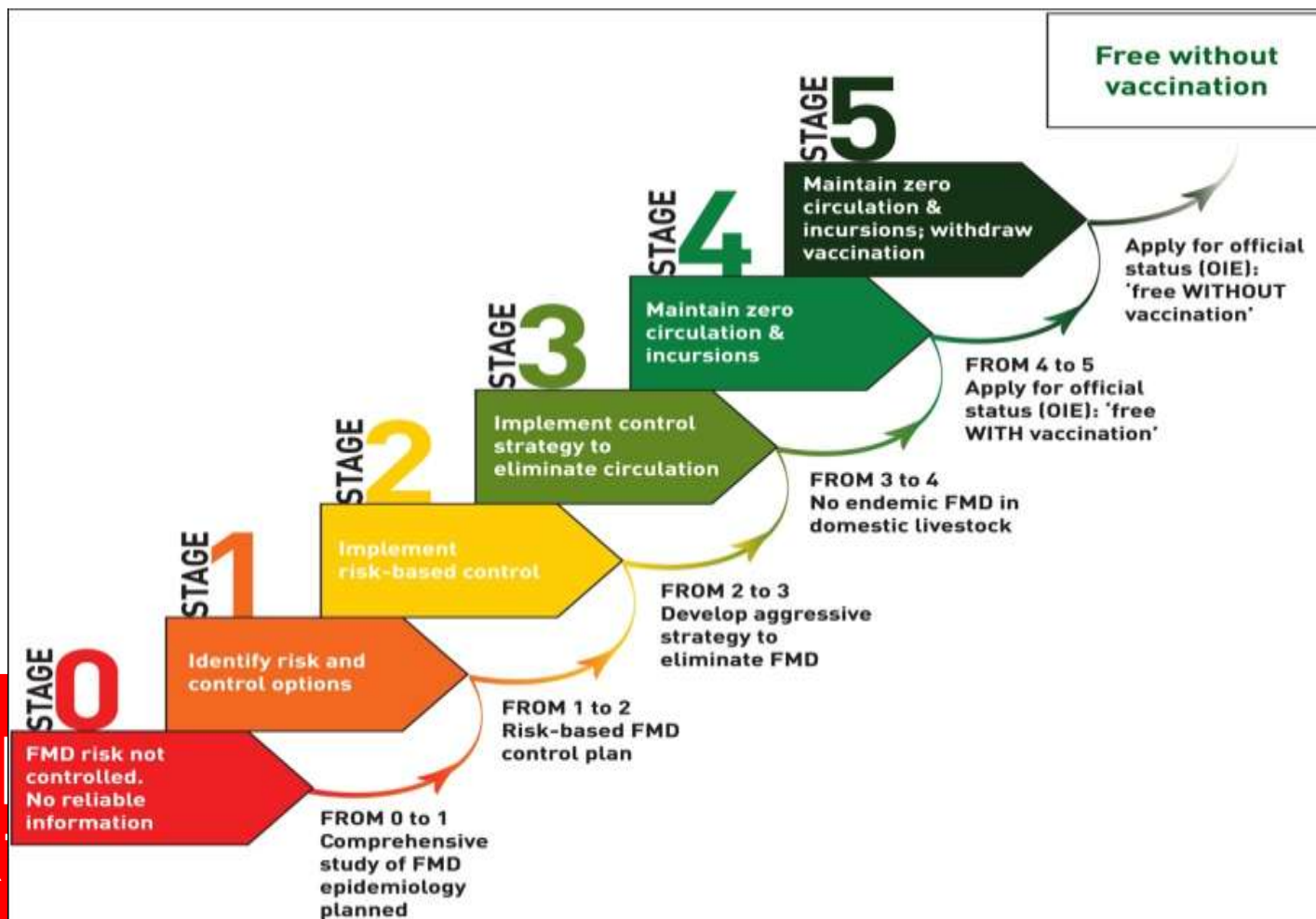
Stage 3 means

- Implementation of surveillance: which differs from monitoring (PCP stage 1-2)
- +ve surveillance finding - results in a response action
- Aim to eliminate circulation in zone/country
- Can have zones in Stage 3 and others at 1-2 in same country
- Assessment therefore requires evidence from surveillance indicators of follow-up actions

PCP – Plenty to Chew over, Properly



Working together



Su
Na

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- FAO World Reference Laboratory (WRL) Pirbright (D Paton, Jef Hammond)

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 - RAHCs in Kathmandu, Beirut, Tunis, FAO Ankara and Cairo