



# Developing One Health Approaches in India

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**Roadmap to Combat Zoonoses in India**  
*A multisectoral initiative for 'integrated' prevention and control of zoonoses*

# Outline

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- Systemic gaps & Vulnerabilities
- Strengths / Opportunities
- Existing models
  - Inter sectoral coordination for policy and response
  - Research and capacity building partnerships
  - State level administrative collaborations
- Conclusions



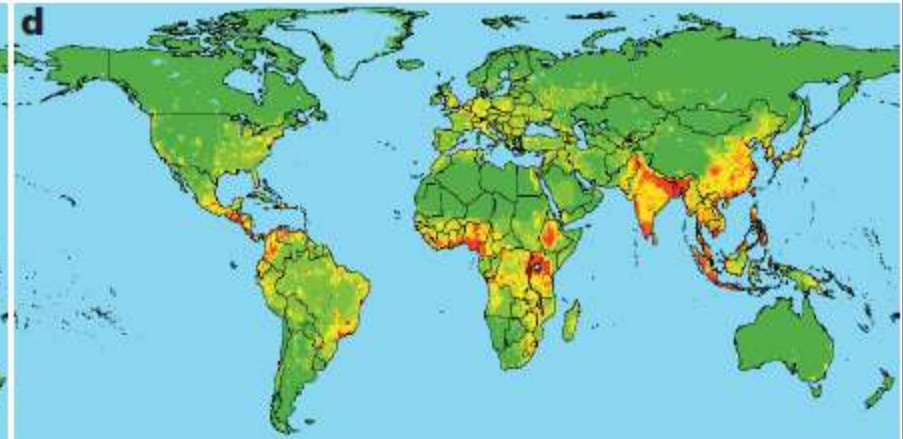
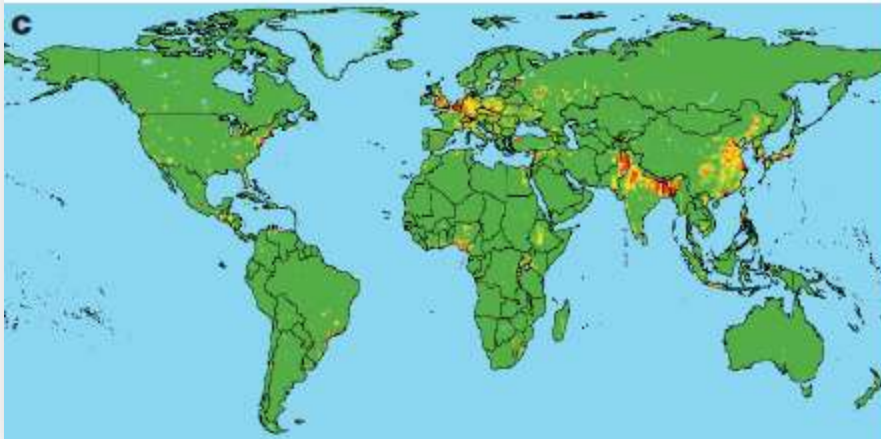
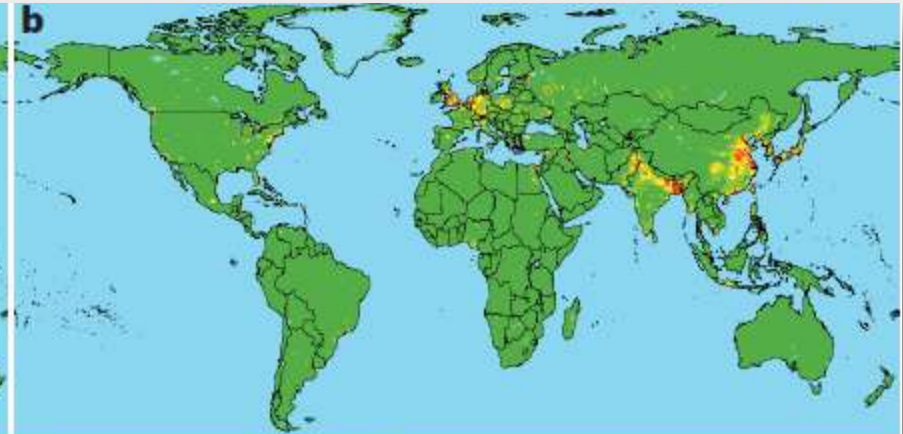
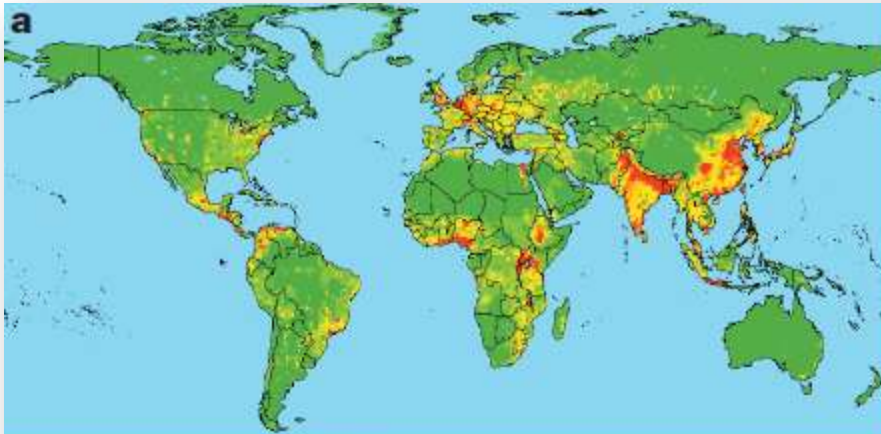


# INDIA AND EIDs: SYSTEMIC VULNERABILITIES

# India's vulnerability to EIDs

*Zoonotic pathogens from wildlife*

*Zoonotic pathogens from non wildlife*



*Drug-resistant pathogens*

*Vector-borne pathogens*

# Systemic Vulnerabilities to developing One Health partnerships

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- Intersectoral collaboration
- Technical capacity
- Research-informed policy-making (or lack thereof!)
- Surveillance and response

# Systemic vulnerabilities

## Inter sectoral coordination

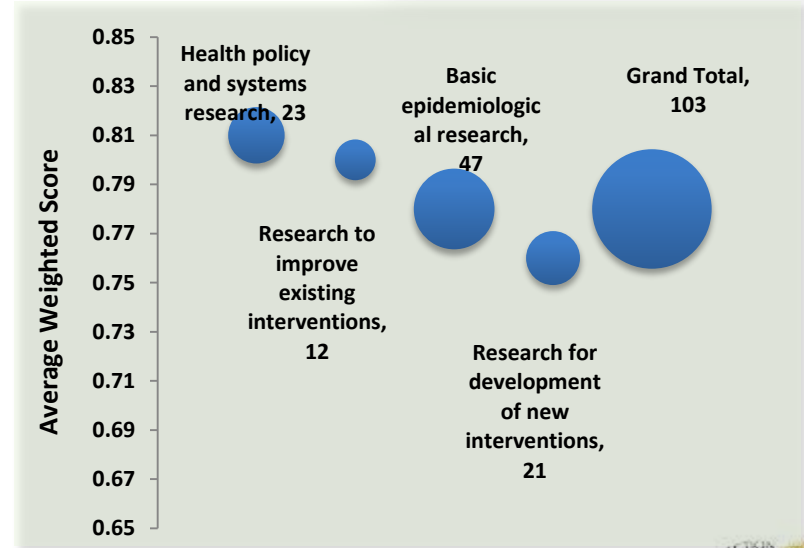
- Limited national level mechanisms; no effective coordination sub nationally

## Human resource capacity

- 33 veterinary colleges in 23 states vs. 192+ medical colleges
- 'Infectious Diseases' or MPH not recognized as PG specialty by MCI
- Limited Field epidemiology capacity – human and veterinary

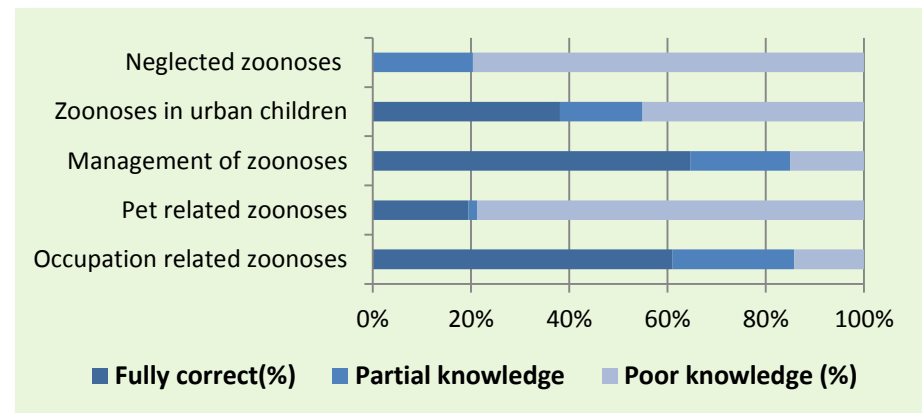
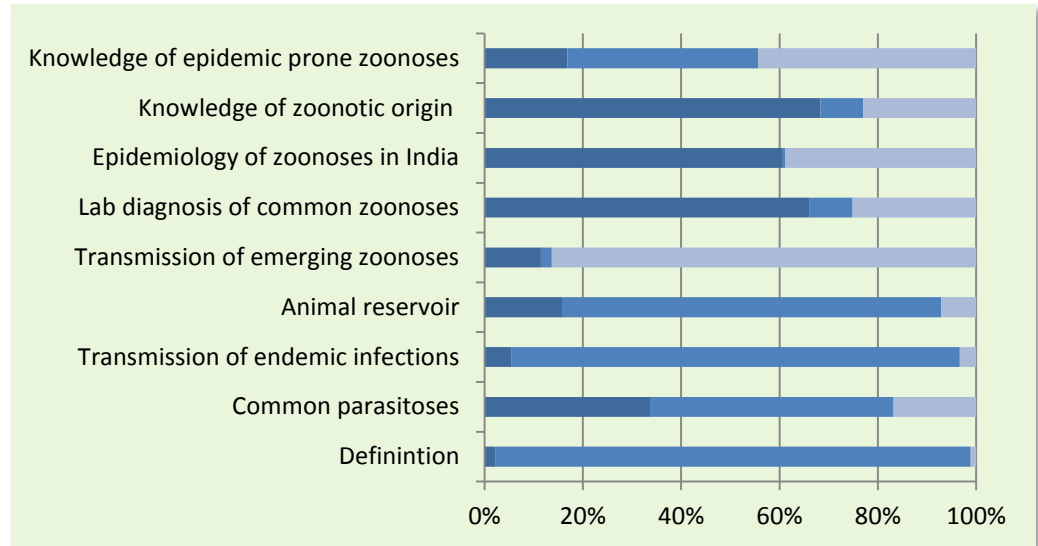
## Public health research

- <5% of total health related research papers in 2007
- Driven by 'biomedical model'
- Knowledge gaps in basic epidemiology (risk profiling), health policy and systems research



# Knowledge & Practices among medical graduates

- 2-4% able to define zoonoses accurately (n=364)
- 50% students in private medical college (23% in public) could not link H5N1 with birds
- 60% respondents in public medical college (20% in private) able to correctly state all steps involved in the management of Rabies
- During clinical practice, 76%-80% respondents did not think of zoonoses as differential diagnosis
- On an average, a medical student/graduate knows only 40-60% of what is needed



# Surveillance & response capacity

## Public Health

- Zoonoses not an organized effort in national program
- Mainly follows major outbreaks/ disasters

## Veterinary

- No regular detection of disease; only following events of disease morbidity/ mortality

## Wildlife

- Mainly conceptual & amateur
- Census reporting and disaster type reporting

## Laboratory capacity

- Tertiary laboratories well equipped
- Limited capacity at primary and secondary level
- Limited convergence between research & public health labs





# Disease Information Systems, India

## Reporting in human sector (2008)

- Cholera Cases & Deaths
  - Total cases = 2680
  - Total deaths = 1
  - No report received = 5 states
  - 'Zero' case reported = 18 states
- Rabies
  - Total deaths = 244
  - No reports received = 2 states
  - 'Zero' deaths = 22 states

## Reporting in veterinary sector

Year	Anthrax	Rabies	Brucellosis
2003	839	47	24
2004	519	152	46
2005	668	84	13
2006	616	43	551



# Brucellosis in Punjab, India

- No case of Brucellosis reported in Punjab
- Limited diagnostic capacity
- Not perceived as public health problem

## Human Health

- GADVASU has an extension program
- BBPCP but ? Penetration & impact
- Vaccination not state priority

## Animal Health

- Increased demand for dairy products
- Intensive farming
- Very high livestock unit density (>40/sq km)
- Pressure on safe farming practices

## Environment

- 12-24% sero-prevalence of bovine brucellosis
- Sero-prevalence up to 11% in human occupational groups
- Economic loss – human life, animal health, resources

## Results

- Limited evidence to policy translation
- Capacity constraint for effective implementation
- Weak communication & advocacy, including horizontal communication

## Constraints



## STRENGTHS & OPPORTUNITIES

# Strengths

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- Technical capacity
  - 600 + institutes in different sectors including biotechnology
  - Laboratory capacity
  - Epi capacity
- Federal structure / decentralization
  - Well rolled out and spread out public health and animal health systems
- IT infrastructure
- Strong private sector

# Opportunities for one health partnerships

Health system and program implementation

- National Rural Health Mission (NRHM)
- Decentralized and integrated health planning

Surveillance

- Integrated Disease Surveillance Project (IDSP)
- Involvement of veterinary & wildlife officers at district level in IDSP
- Livestock health: Central & Regional Disease Diagnostic laboratories (RDDLs and CADRAD)
- International Health Regulations (2005)

Newer Institutions

- Public Health Foundation of India
- Facilitating innovative trans disciplinary partnerships for policy relevant research and capacity building

Existing Inter-sectoral coordination mechanisms

- H5N1 collaborations
- National Standing Committee on Zoonoses (GoI)
- ICMR-ICAR Collaboration
- **Road Map to Combat Zoonoses in India (RCZI) Initiative**





## EXISTING MODELS

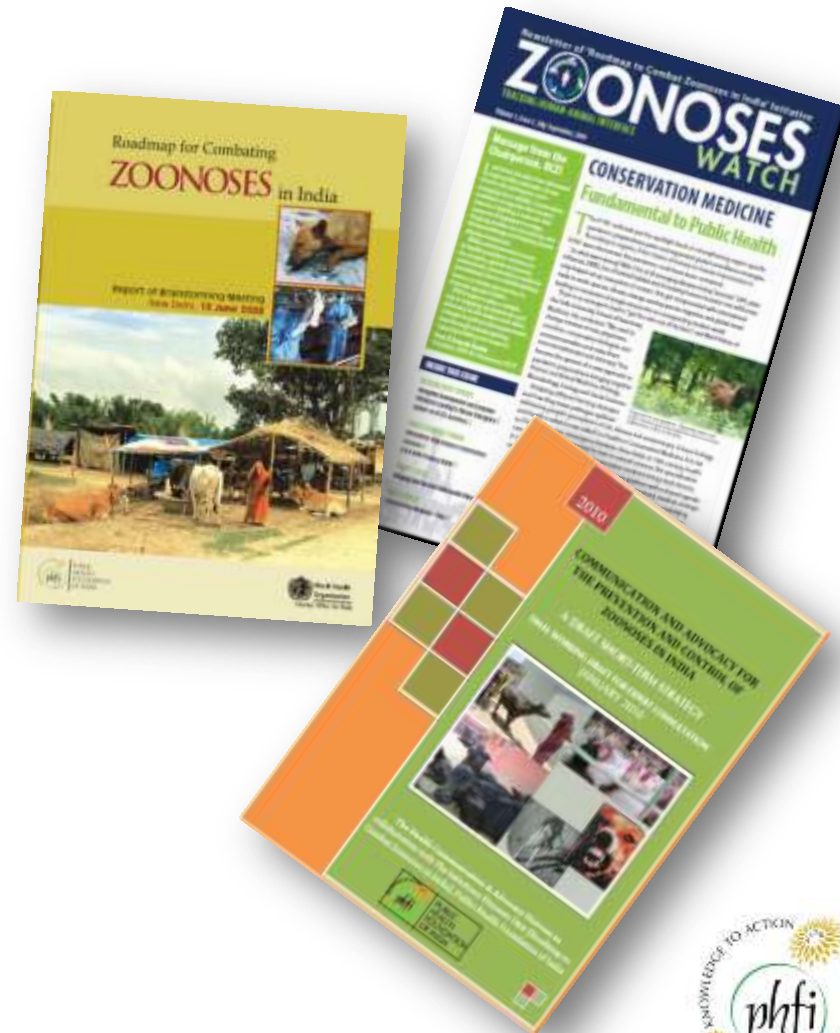
# Inter sectoral coordination for policy and response

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- Joint Task Force & Joint Monitoring Group on avian influenza
  - Policy formulation
  - Joint action plan, response and monitoring
  - Exchange of surveillance information from sub district to national level
- National Standing Committee on Zoonoses
  - Policy recommendations
  - Operation research
  - Inter-sectoral collaboration

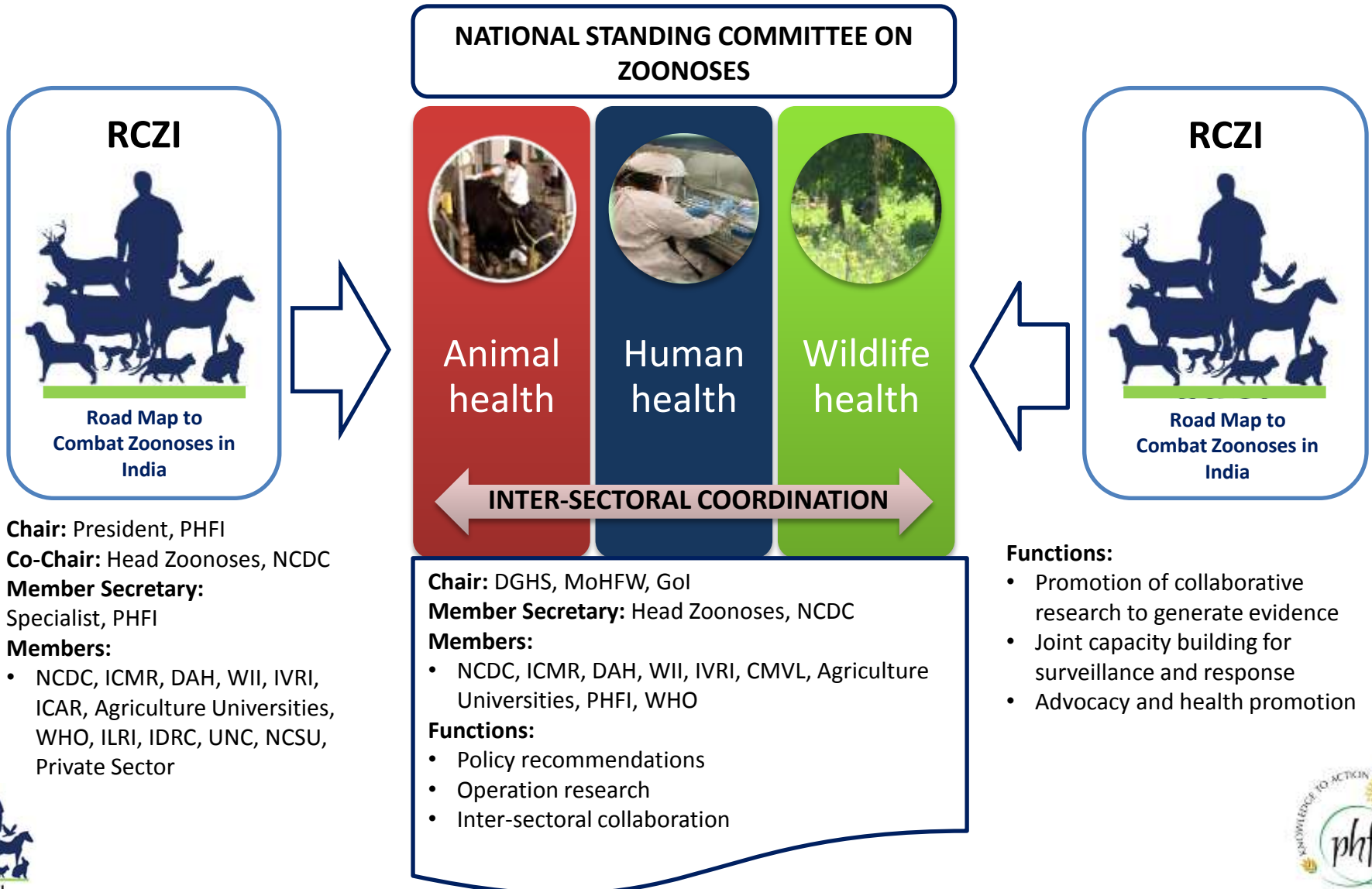
# Research and capacity building partnerships

- ICMR-ICAR collaboration to promote zoonoses research
  - Operational research, Basic epidemiological research, Risk communication and health promotion
  - Funded by ICMR (MoHFW)
- National Center for Advanced Research on Zoonoses (proposed)
- Joint trainings by NCDC and IVRI; veterinarians in FETP conducted by NCDC
- Roadmap to Combat Zoonoses in India (RCZI) Initiative
  - Multi-sectoral collaboration
  - Capacity building
  - Collaborative research
  - Advocacy and communication



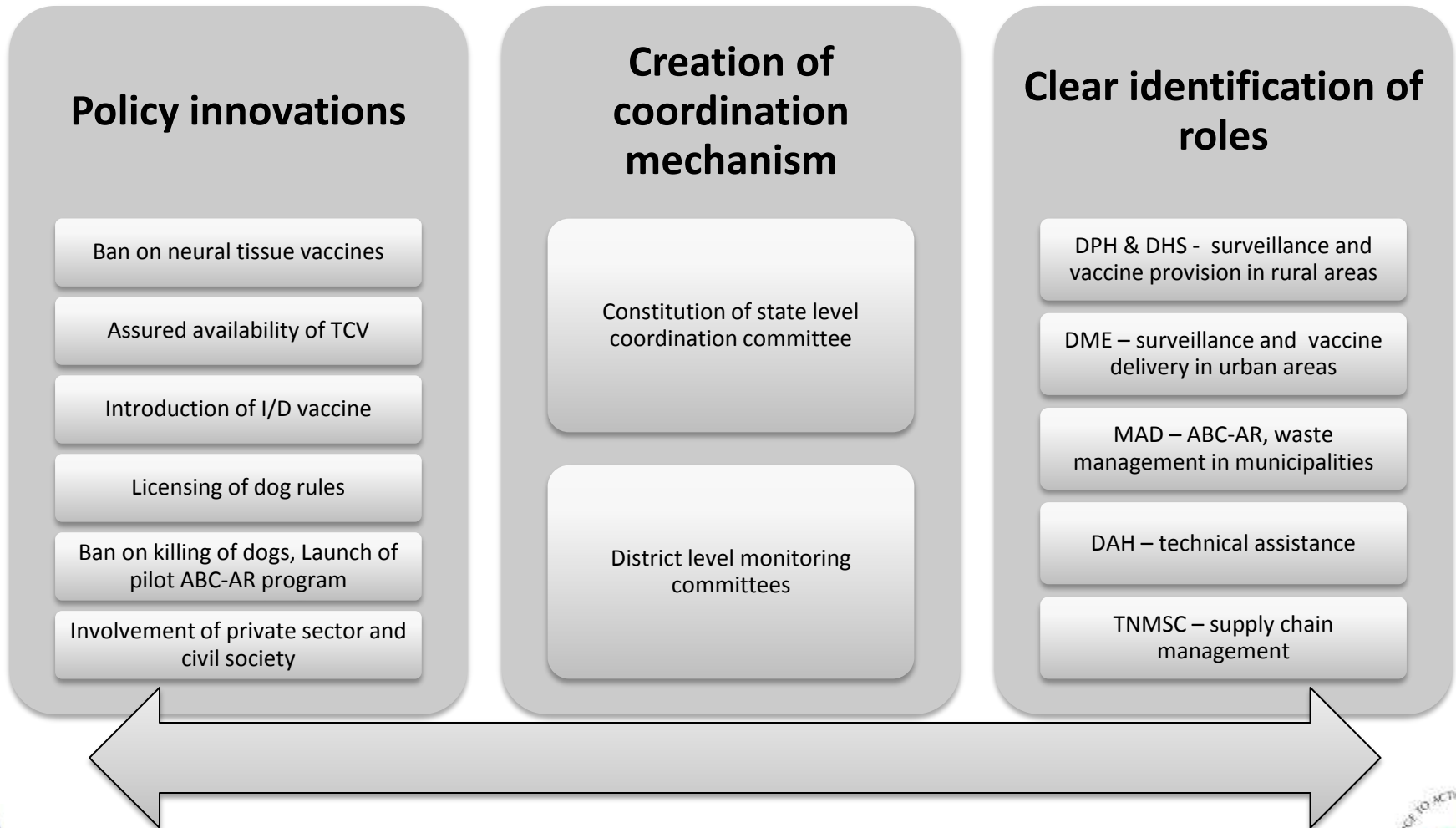


# RCZI: Where does it fit in?



# State level administrative collaborations

## *Rabies Control Initiatives in Tamil Nadu*





## CONCLUSIONS

# Conclusions

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- Reductionist approach of different disciplines a challenge to one health partnerships
- Recognition of interconnectedness of various sectors has grown
- Several mechanisms are being explored to promote these linkages in routine settings including in policy formulation, research, outbreak response and control of endemic zoonoses like rabies.
- Factors contributing to early success:
  - environment of strong political will
  - evidence-based policy innovations
  - clearly defined roles and responsibilities of agencies
  - coordination mechanisms at all levels
  - culture of open information exchange
- Important to encourage interdisciplinary flexibility in research, education and program planning
- In spite of India's vulnerability to EIDs emergence and spread; there are vast opportunities to strengthen one health collaborations





# Roadmap to Combat Zoonoses in India

A multisectoral initiative for "integrated" prevention and control of zoonoses

Did You Know?

- HOME
- ABOUT RCZI
- PARTNERS
- PROJECTS
- RESOURCES
- FAQ's
- CONTACT US

## Making Zoonoses Prevention Part of the National Public Health Agenda

Zoonoses prevention and control programmes, in their present form, are examples of changing and expanding set of diseases that fall too often between the cracks of public health, environmental management, public safety and veterinary fields.

Technical capacity constraints, lack of research-informed policy-making and irregular surveillance continue to limit pandemic preparedness plans. Though efforts are underway through international organizations and others in the health community, much needs to be done to combat what has become a "World problem"



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➤ What is RCZI?

➤ Thrust Areas

➤ Networks

➤ Zoonoses Wiki Portal

➤ Priority Zoonoses

➤ Get Involved

➤ What's



### People, Pathogens and Our Planet

A World Bank report on 'One Health' approach outlines action points to overcome limitations of the present institutional structure and proposes innovative financing mechanisms

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### ALL ABOUT ZOOONOSES

In recent decades, emerging diseases have cast a wide net of fear with new infections breaking into human populations.

[read more...](#)



### Lepptospirosis in North India

Serious complications can affect liver, kidneys, lungs and the central nervous system. Greater vigilance is needed, especially during monsoons, according to a recent study

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### ZOOONOSES FOR:

- Researchers
- Health Professionals
- Veterinarians
- General

### RCZI BLOG

Expert views and opinions on topical issues that relate to the human-animal health interface

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### 'One Health' Developments

The 'One Health' initiative has taken more than 20 years to evolve, emerging as a rich resource pool of countries, think tanks, medical professionals and policy makers who endorse its core philosophy of combating zoonoses through collaborative effort

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### NEWSLETTER



Special Issue on Conservation Medicine

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# THANKS

[H1N1 website](#)

[healthyindia.org.in](http://www.healthyindia.org.in)



<http://www.phfi.org/zoonoses>