



Reflection on the economic impact of animal diseases

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Outline

- Background
- Institutions and disease control
- Key actors
- Socioeconomic impacts of animal diseases
- Example of FMD SAT2 in NE & WE
- The GF-TADs context
- Public-private partnership applied to disease control
- Concluding remarks



Background: continued risk of TADs

Despite ongoing efforts,
TADs such as ASF, FMD,
HPAI, LSD, PPR, RVF, CBPP,
etc. are still important
biothreats and cause
substantial socioeconomic
losses in affected countries



Source: https://www.bloomberg.com/



Source: https://www.gao.gov/



Source: https://sentientmedia.org/



Source: https://theconversation.com/



Institutions and disease control

Disease risks and outbreaks can be characterized and controlled by institutional structures

Institutions: national governments and supranational/multilateral bodies: FAO/WOAH /WHO/WTO/EU/EuFMD

Communities of practice: farmers/producers/vets/labs/consultants

Laws and codes of practice: domestic & international

Customs and uncoded practices including traditional beliefs

The market including insurance



- An approach to understanding organizations and management practices as the product of social rather than economic pressures
- It is shared across social sciences provides vital context for evaluating the effectiveness of veterinary interventions, they can be formal and informal in nature
- Context (e.g., developed versus developing country or endemic versus free settings) can have an important effect on the nature and effectiveness of institutions



Key actors in disease control

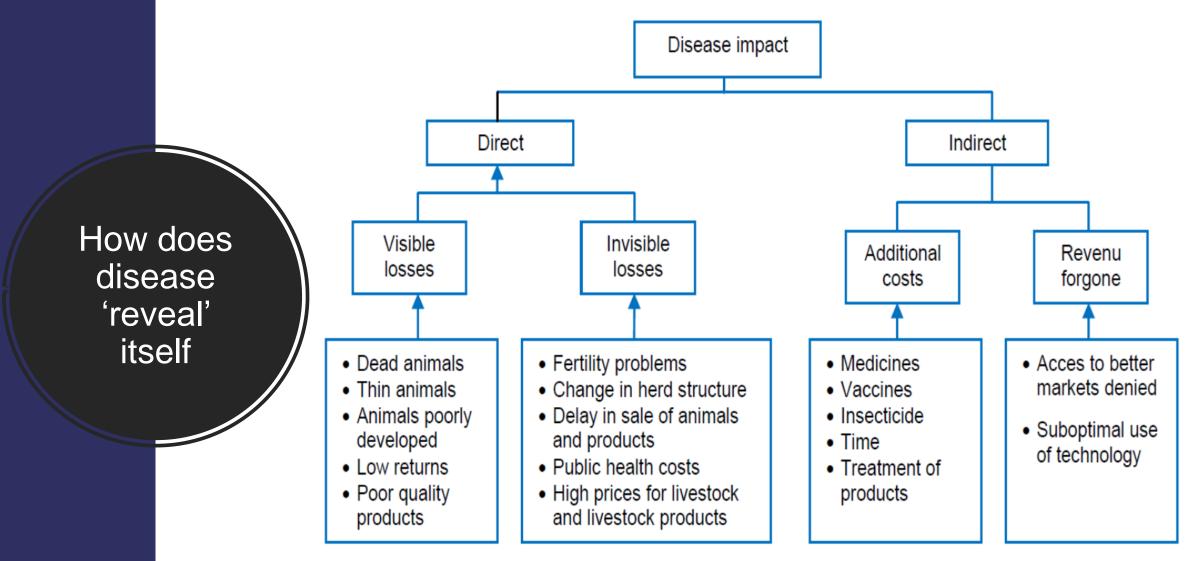
- Farmers, animal owners and animal keepers
- Veterinarians (private vets, clinics & labs) and consultants
- Governments: local, regional, provincial and national
- International institutes such as FAO, WOHA, WHO, etc.
- Research institutes and academics
- Farmers' unions and associations
- Insurance industry and levy boards
- Vaccine and drug manufacturers
- Veterinary authorities
- •
- Wider society?



Socioeconomic impacts of livestock diseases & control

- Direct financial losses
- Indirect consequential losses mainly due to national/international control policies
- Impact on international trade
- Impact on consumers' purchasing behaviour and hence on market
- Psychological and (mental) well-being of animal owners/ handlers
- Animal welfare consequences
- Impact on other industries such as food processing and tourism
- Cost of surveillance and control measures

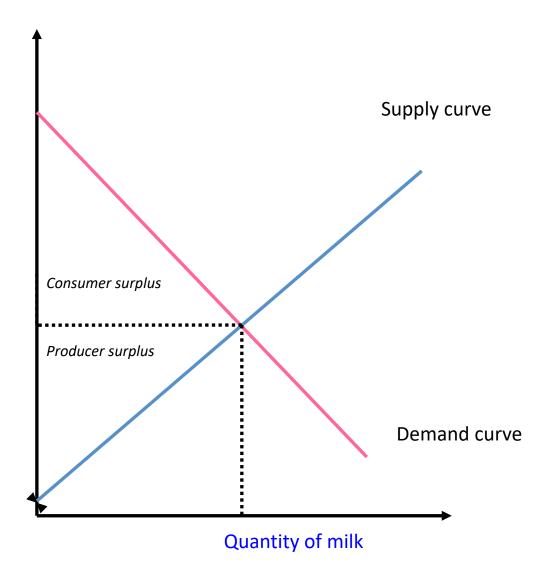


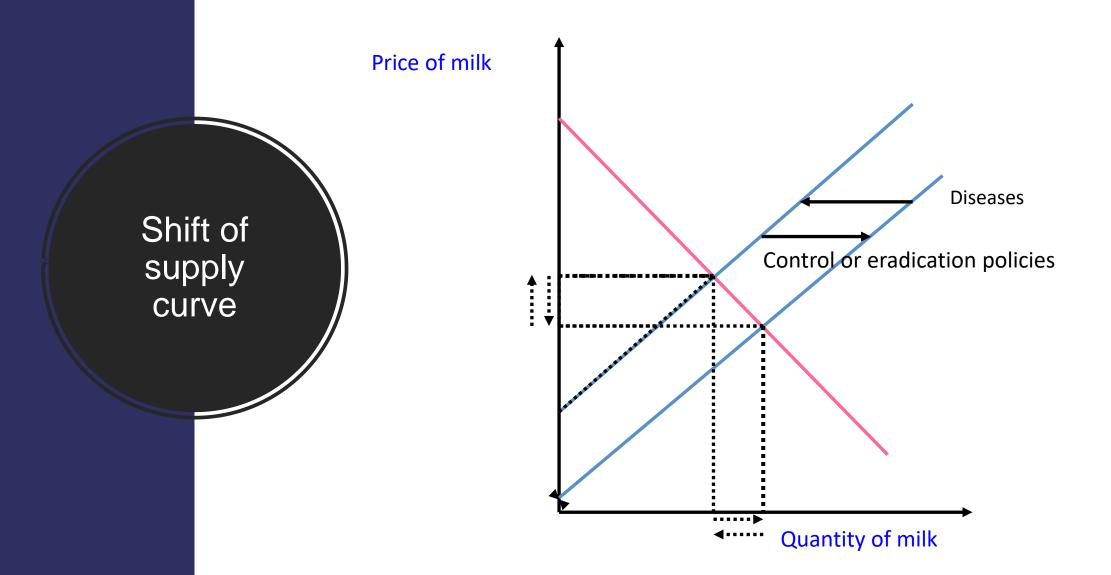


Source: (adapted from Rushton et al., 1999).

Price of milk

Market and animal diseases

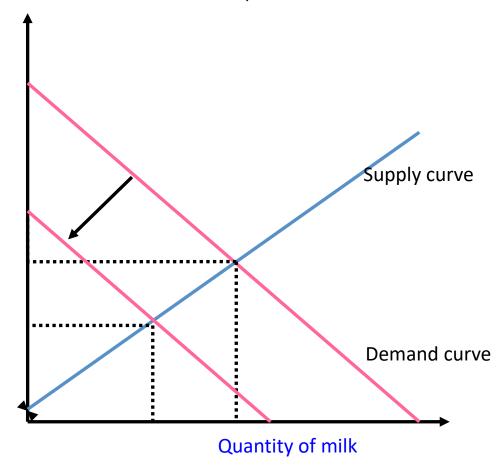


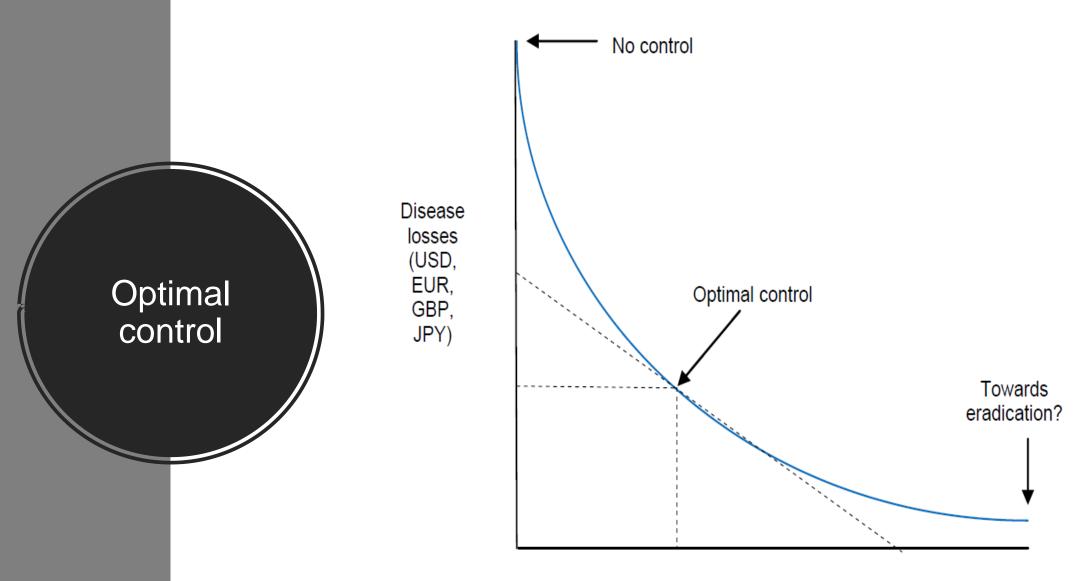


Changes in preferences, income or other markets (e.g. zoonotic diseases)

Price of milk

Shift of demand curve

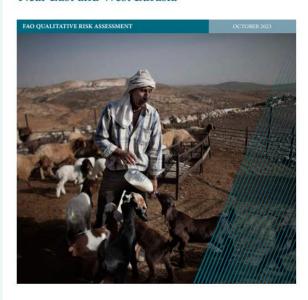


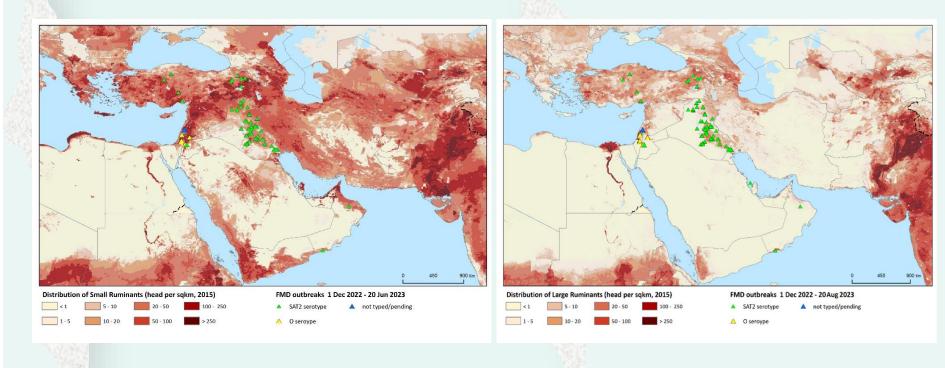


Control expenditure (USD, EUR, GBP, JPY)



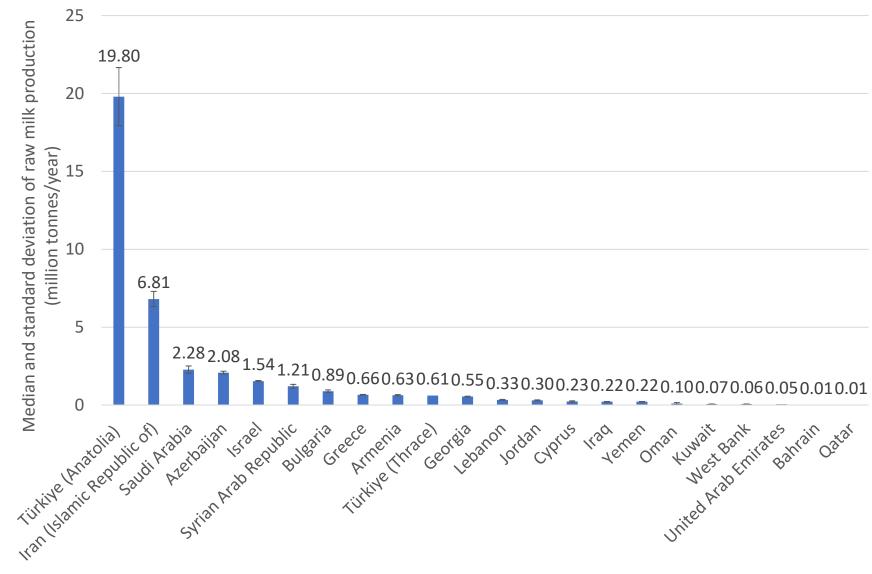
Risk of foot-and-mouth disease SAT2 introduction and spread in countries in the Near East and West Eurasia



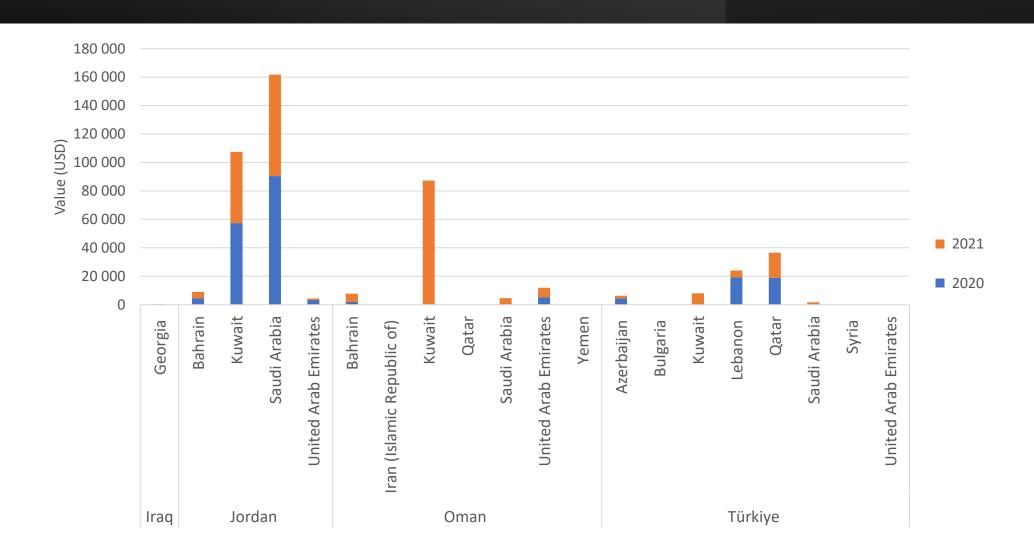


https://www.fao.org/documents/card/en?details=CC8173EN



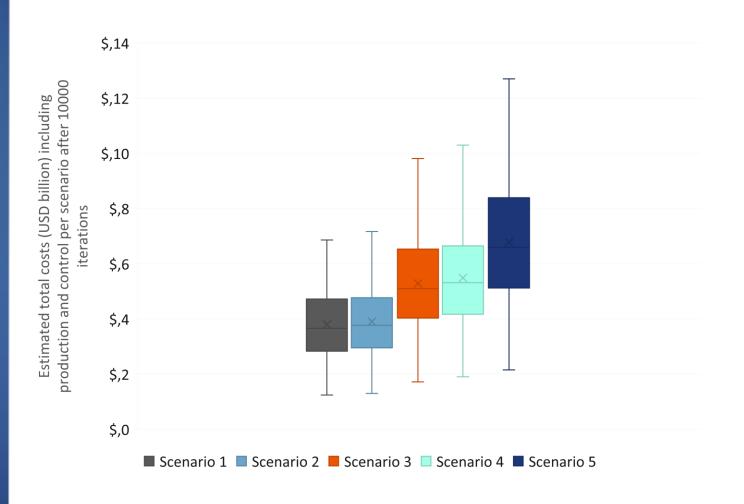


Trade

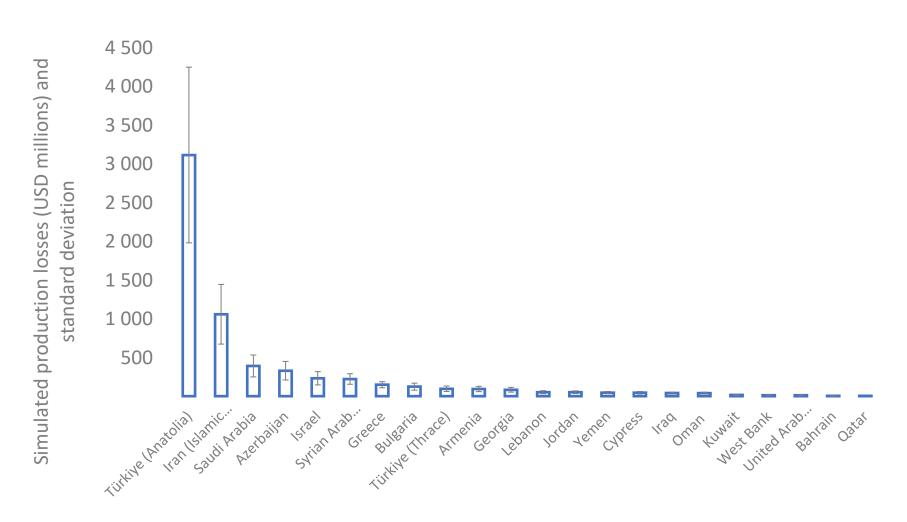


Spread scenarios

- Scenario 1: Jordan, Iraq, Oman, Türkiye
- Scenario 2: Jordan, Iraq, Oman, Türkiye Bulgaria, Greece, Cyprus
- Scenario 3: Jordan, Iraq, Oman, Türkiye Armenia, Georgia, the Islamic Republic of Iran, the Syrian Arab Republic
- Scenario 4: Jordan, Iraq, Oman, Türkiye the Islamic Republic of Iran, Kuwait, the Syrian Arab Republic, Saudi Arabia, and Qatar
- Scenario 5: all the 20 countries/territories

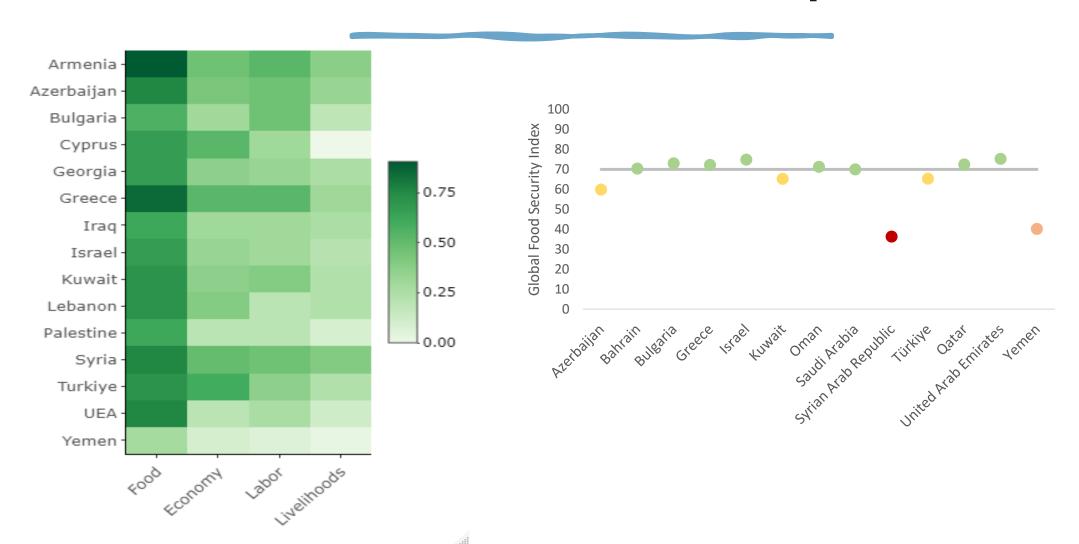


Estimated potential loss



- An incursion of FMD SAT2 would have a substantial negative impact in all countries
- Production losses and cost of control measures estimated at USD 3.6–6.5 billion, depending on the extent of spread within the region.

Socioeconomic impacts

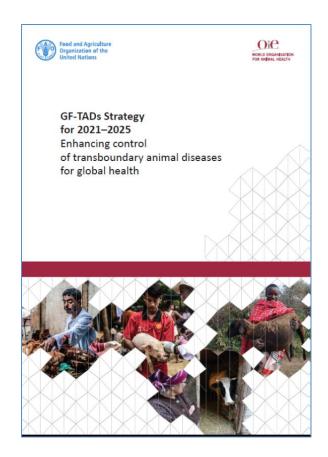




Global Framework for the Progressive Control of Transboundary Animal Diseases (GF-TADs)

- A coordination mechanism jointly established by FAO and WOAH (2004) to reduce the threats from Transboundary Animal Diseases (TADs) re food security, livelihoods and safe trade.
- Strategy adopted for 2021-2025

The GF-TADs coordinates strategies at the global level on FMD, PPR, ASF, Rinderpest post-Eradication programme, Avian Influenza as well as activities on regional priority diseases such as LSD, Rabies, RVF, CBPP, etc.

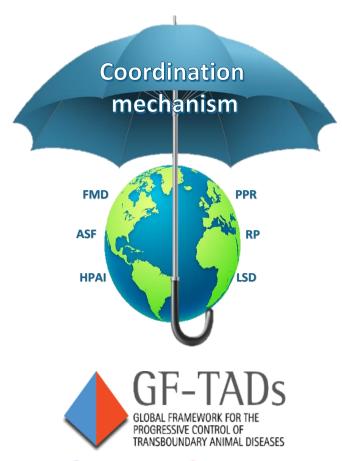


GF-TADs Strategy 2021-2025: objectives

 Establish strategies for priority TADs at the subregional, regional and global level.

 Develop and maintain capacities to prevent and control TADs.

 Improve sustainability of strategies to control priority TADs through multidisciplinary partnerships.







Public-private partnership as a way forward







Results for the public sector

Results for the private sector

Strengthening the organization and execution of vaccination tasks and vaccination certification.

OUTPUT

14 millions animals vaccinated (after 3rd round of vaccination in 2016).

4195 personnel employed (Executives, Veterinarians, Vaccination Certifiers and administrative staff).

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Reliability and Robustness of the vaccination system, related to better compliance with the sanitary provisions by ranchers - Increased livestock vaccination coverage. Country FMD free status with vaccination maintained.

OUTCOME

Exponential increase of the trained personnel capable of carrying out effective vaccination.

Greater proportion of cattle population protected from FMD, less risk of production losses, greater confidence in cattle sector.

Increased access to export markets for beef.

ECONOMY: Livestock contributes 12% of GDP, employs 17% of the economically active population (about 578,000 people on average), and generates exports

tock Sector and the Country.

TRUST: Joint search of Goals and Objectives that benefit the Lives-

worth over \$1.2 billion.

IMPACT



BUSINESS: Increased private revenue.

Ø

TRUST: Harmonious relationship between the Public and the Private Sectors (Cattle Ranchers association). Participation and empowerment of the productive sector (Livestock Producers) in the execution of animal health programs.

IMPACT





PUBLIC-PRIVATE PARTNERSHIP

Governance Mechanism: Animal Health Consultative Forum; MoU



Results for the public sector



Results for the private sector

Availability of funds to implement measures.

Support of producers.

OUTPUT

Fast action and containment of outbreak.

Maintenance of export livestock and meat markets.

Disease control: Maintenance and improvement of FMD control status.

Improved collaboration, synergy:

Buy-in and support of the livestock and meat industry for implementation of disease control measures. OUTCOME

Profit, revenues: Interests of the livestock and meat industry sustained.



National ECONOMY: Livestock sector contribute 3% to GDP. 70% of population dependent on livestock. Maintenance of trade.

TRUST: Meat Board can inform but also assist DVS with implementation and compliance to market requirements.

IMPACT



BUSINESS: Maintenance of existing and entering new lucrative high value livestock and meat markets. Also more business opportunities through better synergy with Government objectives: Meat Board provides direction to the Industry through projections and observing.

Challenges and gaps for PPPs in the ME

Lack or weakness of enabling institutional arrangements

Retaining control of animal health by the public sector

Lack of identification of areas for mutual benefit

Lack of knowledge of private sector's needs

Financial risk for the private sector

Lack of coordination

Report on a Technical Item presented to the 15th Conference of the OIE Regional Commission for the Middle East, Abu Dhabi, United Arab Emirates (10–14 November 2019).



PPR vaccination of Kuchi flocks in Afghanistan © Arif Noori





Opportunities for PPP

- Strengthening and extending public Veterinary Services
- Learning from and drawing on successful examples
- Solving complex issues such as vaccine security and access to quality vaccine
- Empowering private veterinary sector
- Establishing PPP legislation
- Cost and responsibility sharing



Source: getty images.

Conclusions

- Institutional context must be carefully studied & considered in designing control plans
- Human behaviour is part of institutional context as well as epidemiology of diseases
- Economics and social sciences can inform disease control
- Disease control involves trade-offs and requires several policy options
- Understanding the impacts and socioeconomics around who pays and who benefits –
 is crucial to advocacy and develop national strategies
- Effective and sustainable PPPs are crucial for TADs control

TAFS for the opportunity

Acknowledgments

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THANK YOU



Protecting people, animals, and the environment every day