FMD virus pools and the regional programmes

Virus Pool 2 - South Asia

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Overview

- South Asia as a Region
- Livestock demand and production
- Socio-economic issues
- FMD status in the region
- Regional initiatives in disease control
- FMD status using PCP
- Conclusions
South Asia Region

- Eight countries belong to a regional organization South Asian Association for Regional Cooperation (SAARC)
- 2.5% of global land mass and approx 25% of global population
- Approx 790 mill ruminants and 15 mill pigs
- Low income and high poverty (>80% depend on agriculture)
- Rapid economic growth, widening inequalities
- High level of mal-under-nutrition
- Wide diversity in preference for animal products
Per capita consumption of meat:
Asia and the World

Kg/year


Asia

World
Per capita meat consumption: South Asia

**Graph:**
- Categories: Poultry, Small ruminants, Bovines, Others.

**Years:**
- 1970
- 1980
- 1990
- 2000
- 2007

**Kg/capita/year**
Meat production in South Asia: million tons

- Poultry
- Small Ruminants (SR)
- Bovine
- Others

- 1970
- 1980
- 1990
- 2000
- 2009
Milk consumption

East Asia
South Asia
South East Asia
World

gms/day

Milk production (million tons)
Livestock population excluding poultry

Cattle: 45%
Buffaloes: 17%
Sheep: 20%
Goats: 21%

1970: Cattle = 29%, Buffaloes = 13%, Sheep = 21%, Goats = 45%
1980: Cattle = 21%, Buffaloes = 19%, Sheep = 20%, Goats = 33%
1990: Cattle = 19%, Buffaloes = 17%, Sheep = 19%, Goats = 33%
2000: Cattle = 19%, Buffaloes = 17%, Sheep = 20%, Goats = 33%
2009: Cattle = 29%, Buffaloes = 21%, Sheep = 21%, Goats = 33%
Some productivity parameters

Beef and Small ruminant meat
(kg output/kg bioamss/year)
Some productivity parameters

Milk kg/cow/year

- Developed countries
- E/SEA
- WANA
- LAC
- SA
- SSA
Livestock/livelihoods/opportunities

- >75% of the livestock production in small holdings of <1 hectre
- Livestock contributes to the livelihoods of poor farmers
- Doubling of demand for meat and milk by 2025 provides a potential for rapid productivity gains and equitable growth (livelihoods, food and nutrition security)
- However, with over 700 mill susceptible animals to some high impact pathogens, disease control is vital
- FMD is recognized as one of the most important diseases in the region.
- The impacts are particularly significant in small holder sector where it is estimated that between 20-30% loss in milk production due to FMD
SA: FMD virus gene pool-2
The FMD virus serotypes detected in 2010

Prepared by Regional Epidemiology Centre from WRL and PD-FMD reports
Cattle and buffalo movement routes in South Asia

- Significant intra-regional movement
- Also movement outside the region
- Sheep and goat movement linked with pastoralists and nomadic people
- Feral pigs in several countries
- Role of small ruminants and pigs not well defined
Estimated economic losses due to FMD

- **India**: Direct losses ≈ $4.45 billion per year
- **Bangladesh**: ≈ $60 million per year
- **Nepal**: ≈ $60 million per year

- Social, livelihoods, and food and nutrition security impacts need to be determined
Improved Regional Coordination

- FAO/OIE GF-TADs programme
  - Several regional consultations of disease prioritization and needs assessments
  - FMD, PPR and HPAI priorities, others such as sheep pox, brucellosis, HS are also important
  - Recommendation to establish a regional programme to control FMD and other priority diseases
Regional Coordination Mechanism

- Establishment of a Regional Programme on TADs with SAARC and overall guidance by GF-TADs
  - Regional Support Unit (Kathmandu, Nepal)
  - Regional Epidemiology Unit (Kathmandu, Nepal)
  - Identification of Regional Leading Diagnostic laboratories
    - FMD in India
    - PPR in Bangladesh
    - HPAI in Pakistan

- Supported by the EU-HPED Programme and coordinated by FAO
Evaluation of FMD control programmes in South Asia

- Disease control is sporadic and non-uniform
- High-grade animals are routinely immunized, but the total vaccine coverage is less than 10%
- India has initiated a large scale national FMD control program through vaccination using a zonal approach
- Pakistan has initiated control programme through USDA funding in 2011
- Bangladesh has developed a National Control Strategy in 2011
- Nepal has initiated in 2012 a regional control programme in Eastern Nepal following PCP principles
Regional Leading Diagnostic Laboratory

- SAARC Regional Leading Diagnostic Laboratory has been identified at PD-FMD, Mukteswar, India (is also part of the global FMD lab network)

- Consultation for establishing a network of diagnostic labs in SA was held in 2011
Regional Laboratory training on FMD

1. Two rounds of Laboratory training on foot and mouth disease diagnosis was conducted at SAARC Regional Leading Diagnostic Laboratory on foot and mouth disease, Mukteswar, India

2. The following materials were provided
   - Manual of techniques provided to participants
   - Kits for Typing ELISA reagent for testing 500 clinical samples.
   - LPB ELISA reagent for testing 3000 serum samples
   - DIVA ELISA reagent for testing 900 serum samples
   - Coating capsule and OPD substrate buffer tablets
   - ELISA Plate
   - Finntip and Finnpipette Stepper
Workshops and trainings

• First Laboratory Directors’ Meeting and Workshop on Laboratory Networking and Proficiency Testing for Priority HPEDs in SAARC Countries, 23-24 January 2012, Dhaka, Bangladesh

• Regional Training on Proficiency testing for Veterinary Diagnostic Laboratories in SAARC countries, 21- 26 May 2012, Mukteswar, India
International conference on FMD

- International Conference on Scientific Developments and Technical Challenges in the Progressive Control of FMD in South Asia’ held on 13-15 February, 2012 at New Delhi, India

- Strong support for regional cooperation and collaboration
- SAARC to play a leading role
- PCP-FMD endorsed as a way forward
- Development of national and regional roadmaps
- Establishment of FMD coordination unit with in SAARC
- Broader support for more resources to strengthen veterinary services
Country level support

- Bangladesh to review the FMD situation and discuss the modalities of developing PCP strategy in June 2011

- Bhutan laboratory support, ELISA. PCR training and enhancing infrastructure to support epi work on TADs
## Self-evaluation of PCP-FMD in SAARC countries-2011-2020

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* Afghanistan and Pakistan are participating in the West Eurasia roadmap
Overall main observations

- In the SAARC region India has embarked on a large FMD control programme through vaccination.
- Other countries are committed towards the same goal and are at different stages of progressive control pathway (PCP).
- Afghanistan and Pakistan already have linkages with Eurasian programme.
- However there is increasing need for regional cooperation for:
  - Epidemiology, Surveillance and early warning system
  - Regulatory policies and plans for diagnosis and control
  - Awareness programmes
Observations and Conclusions

1. Increasing evidence of regional commitment and cooperation
2. SAARC is engaged and a formal RSU has been established with a SAARC team
3. Further establishment of a regional FMD programme under RSU
4. Major challenges
   • Sustained regional cooperation/resources
   • Improved understanding of the epidemiology, combining socio-economics, animal movement, value chains
   • Awareness and farmer buy in
   • FMD as part of a multiple disease control strategy
   • FMD control in the context of overall animal health improvement
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