RIFT VALLEY FEVER: CHALLENGES, PREVENTION AND CONTROL IN SOMALIA.

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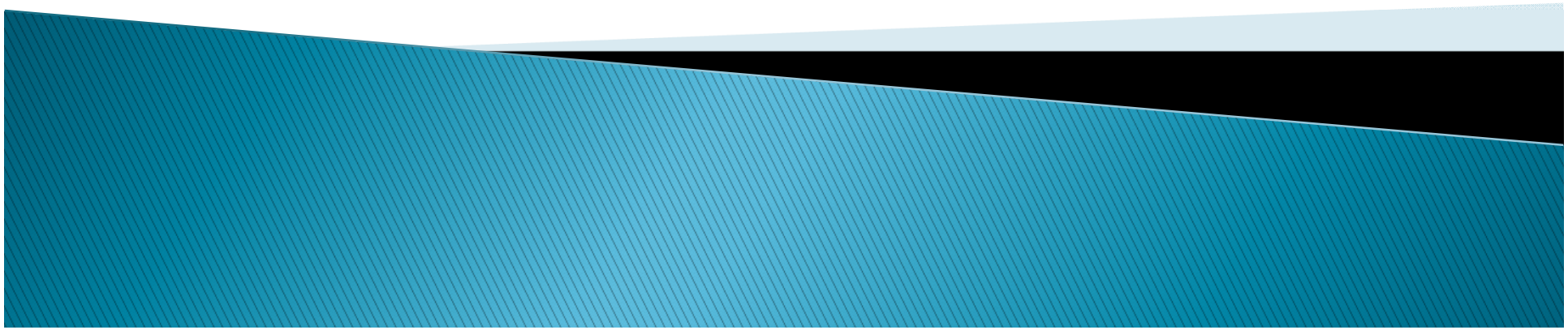
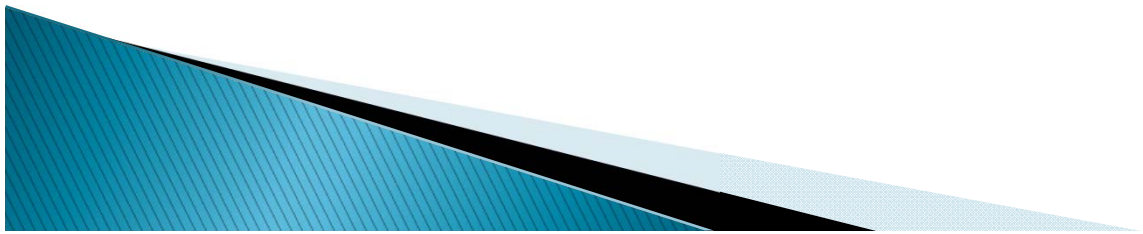


Overview of the presentation

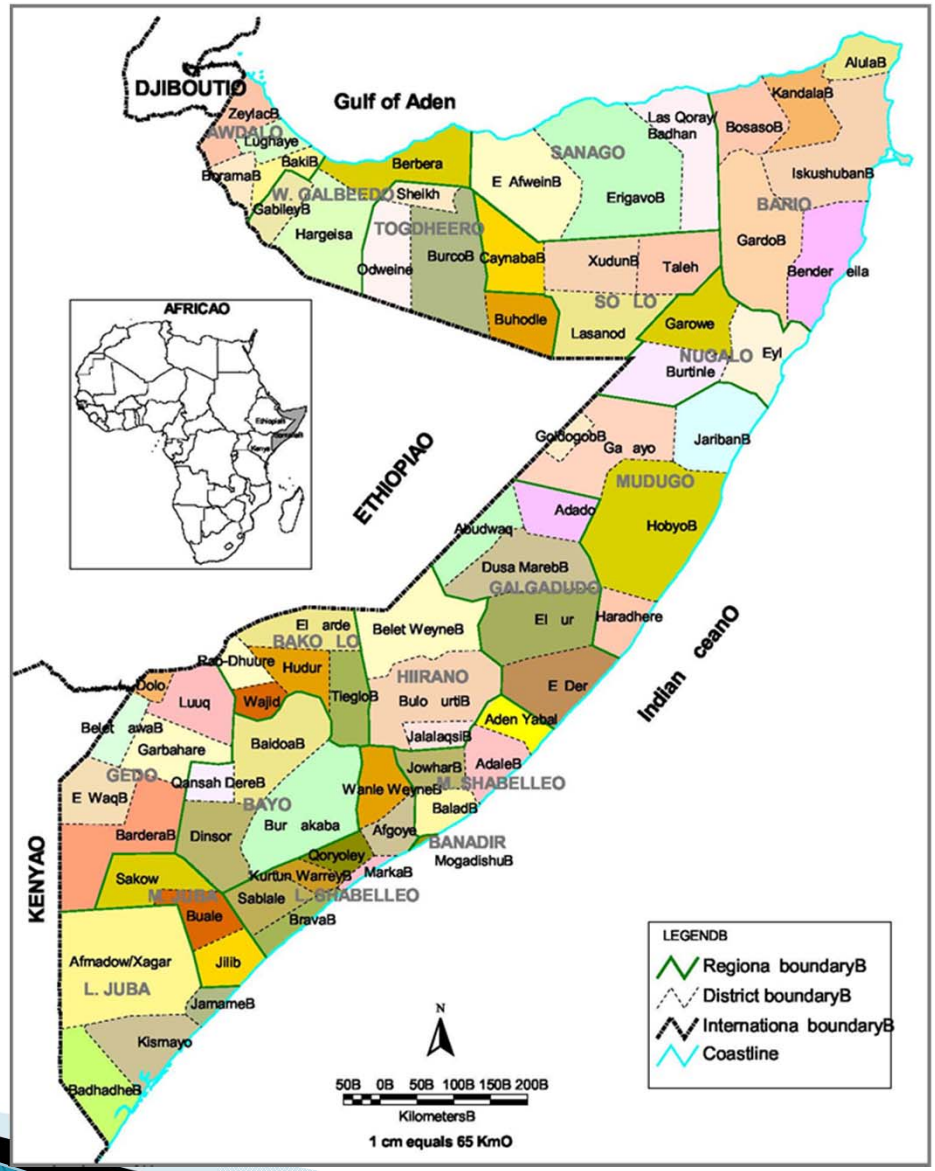
- Overview of Somalia
- Somali livestock sector,
- Review of RVF outbreaks
- Emergency preparedness plans
- RVF surveillance (Animal / vector
- Co-operation between Veterinary Services and Human health Departments
- Vaccination and vaccine banks.



Overview of Somalia

- With no central government Somalia operates as three zones – Somaliland in the northwest, Puntland in the northeast and Central and Southern Somalia.
- Largely dominated by arid and semi-arid rangelands.
- Pastoralism and agro-pastoralism are the most appropriate form of land use.
- Livestock sector accounts for over 40% of GDP and provides the main source of livelihood.
- Livestock and livestock products account for 80% of exports from Somalia.
- High insecurity in parts of Somalia hinder animal health service delivery.

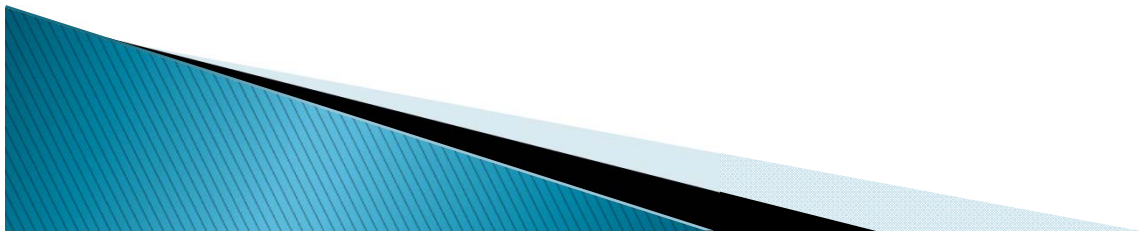
Somalia: Districts



Livestock export trade – Somali economy

- Somali livestock export trade has thrived for hundreds of years with minimal interruptions.

- Key export markets for live animals are the Kingdom of Saudi Arabia, Yemen, Oman, Egypt and United Arab Emirates.



Somali livestock trade

Hargeisa livestock market: Loading of sheep and goats for export to Saudi Arabia during the Hajj season of 2012.

OCTOBER 2012

Somali livestock export trade

Every year (when there is no import ban) millions of sheep and goats are exported through the port of Berbera in Somaliland to markets in the Arabian Peninsula

Livestock quarantine facility in Berbera.

OCTOBER 2012

Somali Livestock export

- Live animal exports through Berbera sea port in 2011 totalled **3,374,050** heads of which:

  - **3,116,978** were sheep and goats;
  - **150,905** were cattle and
  - **106,767** camels.

  The 2011 live animals' exports represented a 15% increase from 2010, despite the severe drought that was experienced in the Great Horn of Africa region in early 2011 (www.somalilandchamber.com)

  Total annual exports could be 5-6 millions.

- **Disruption of this huge export trade by Rift Valley fever and other transboundary animal diseases remain a major threat to Somali livelihoods.**

Impact of trade-limiting diseases on livelihoods

- Trade-limiting animal diseases and zoonoses pose a major threat to Somali livestock export trade and livelihoods.
- Since the 1997/98 RVF epizootic/epidemic in Somalia livestock export trade has been interrupted by bans imposed by some of the main importing countries.
- Livestock import bans have serious economic consequences on household and national economy.

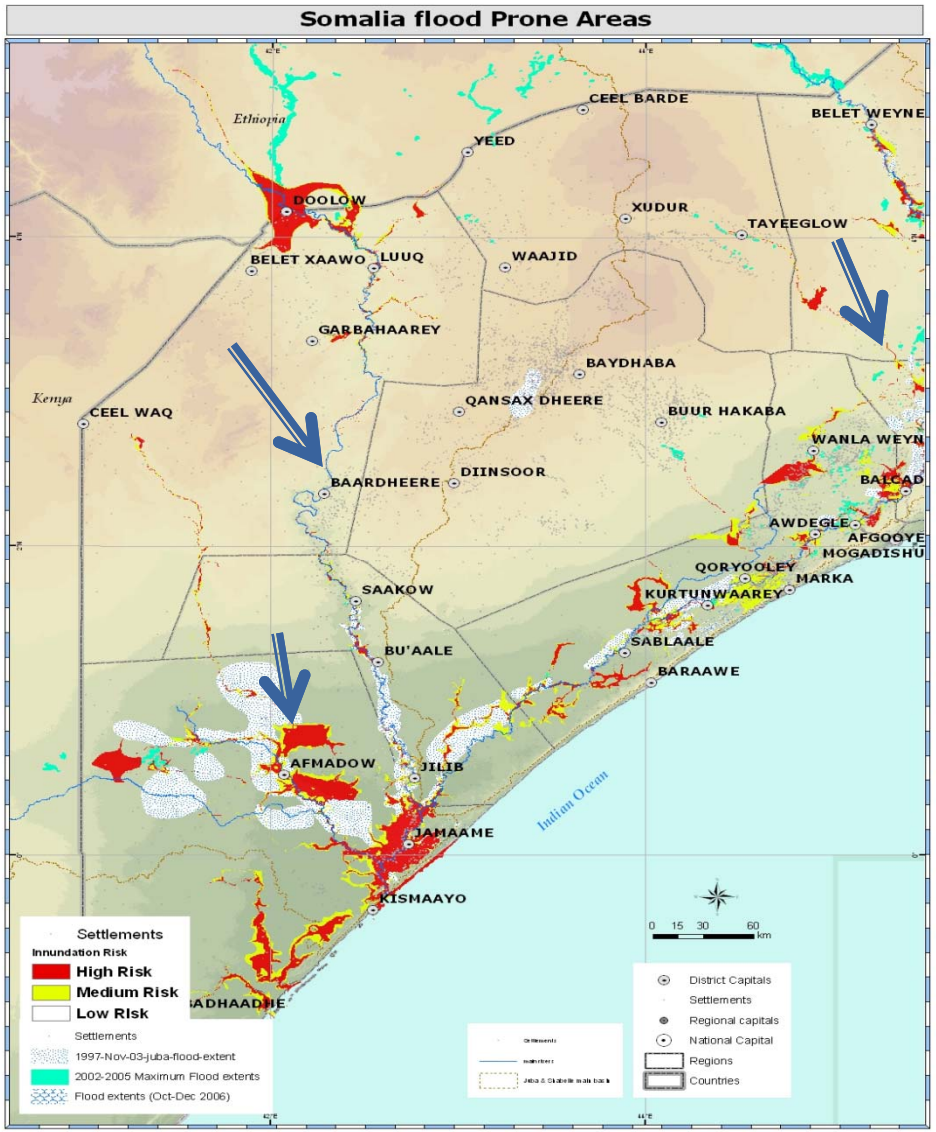
Rift Valley fever

- Originally recognized in sheep and cattle farms in Rift Valley (Naivasha / Nakuru area) in the 1920s.
- Vector-borne viral disease affecting sheep, goats, cattle, camels and humans.
- Virus persistence in the environment is linked to the life cycle of floodwater *Aedes* mosquitoes that deposit their eggs in breeding places subject to periodic inundation or flooding.
- Periods of heavy rainfall and prolonged flooding (and other important ecological factors) trigger final development of *Aedes* eggs (infected with RVF virus) leading to huge increase in vector population and transmission of RVF virus to livestock and humans.

Somalia flood prone areas

In Somalia, areas with high risk for flooding and large susceptible host populations have a high risk for occurrence of RVF.

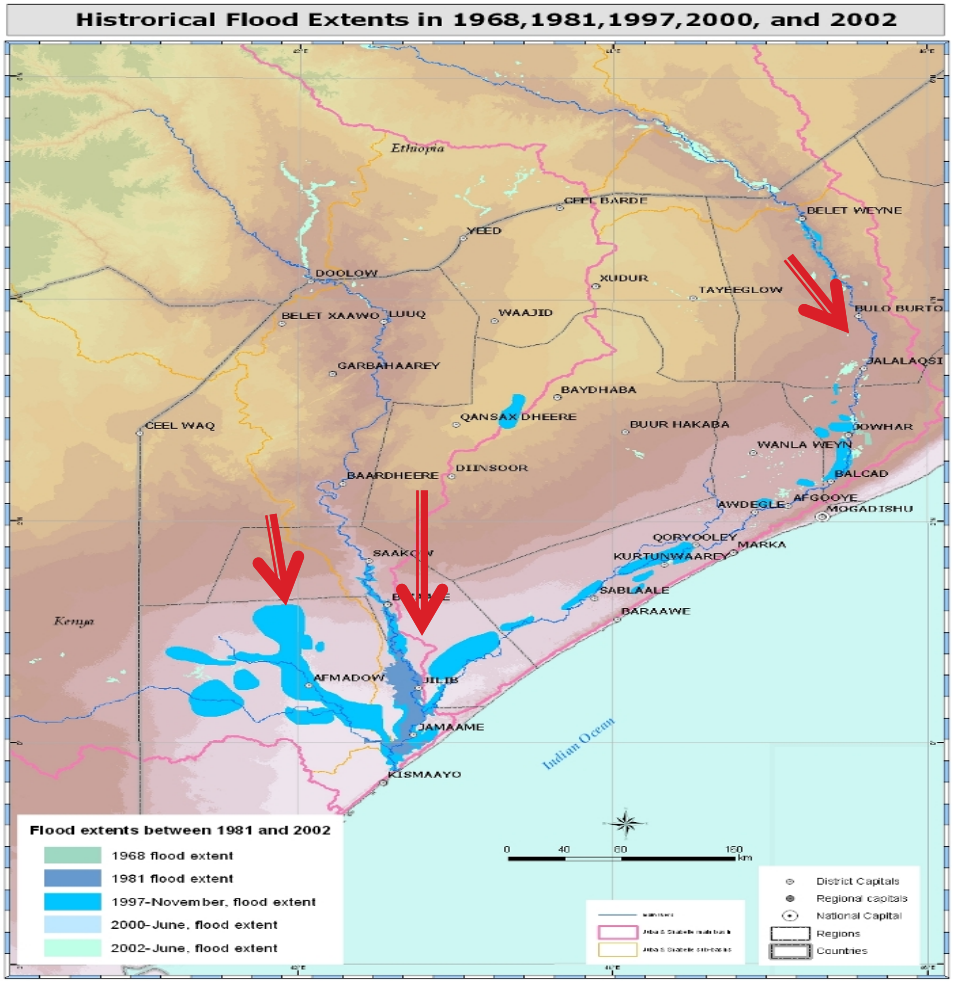
Rain in Ethiopian highlands contribute to flooding Juba and Shabelle river basins.



High flood risk areas of Somalia

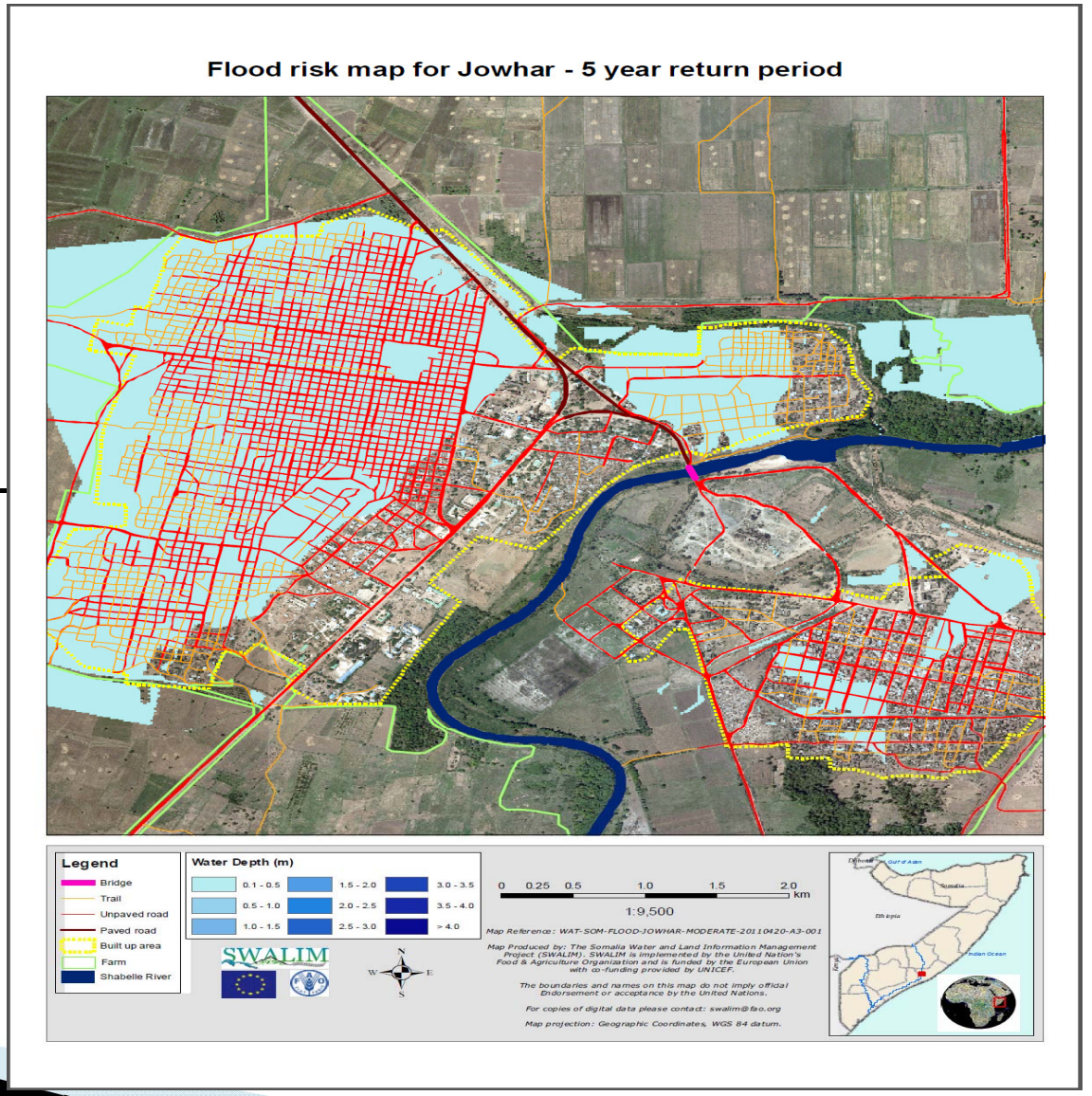
Historical flood extents in 1968, 1981, 1997 and 2002 in Juba and Shabelle river basins.

Flooding in these areas has started.

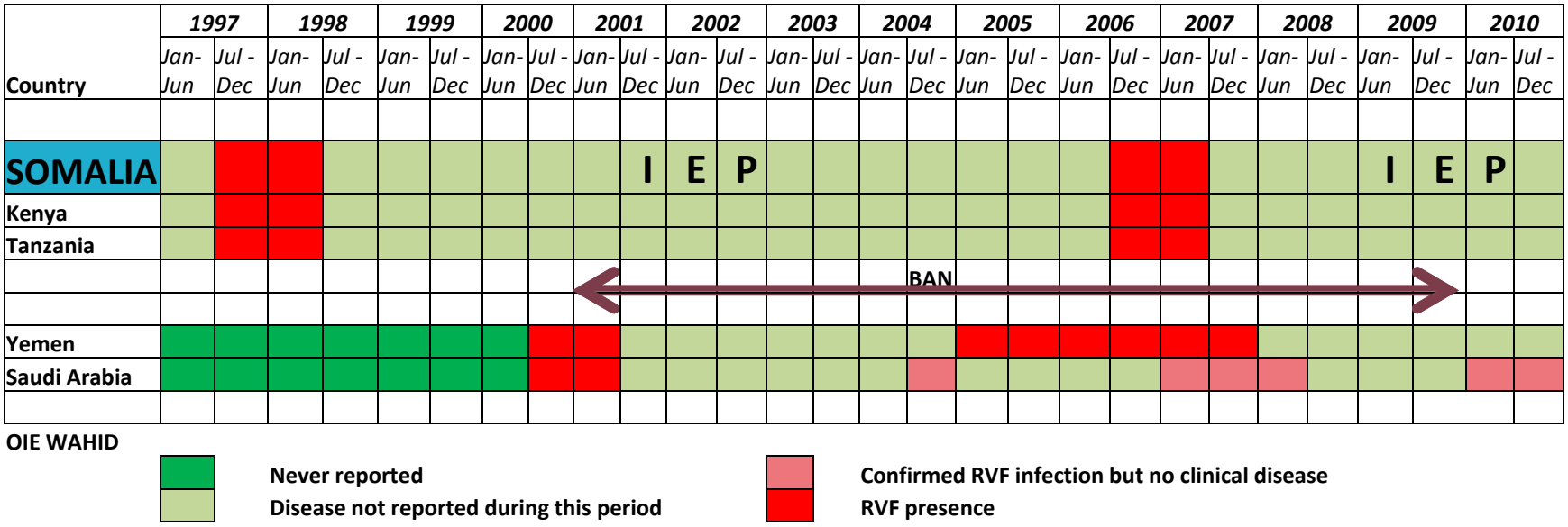


Flood risk map for Jowhar

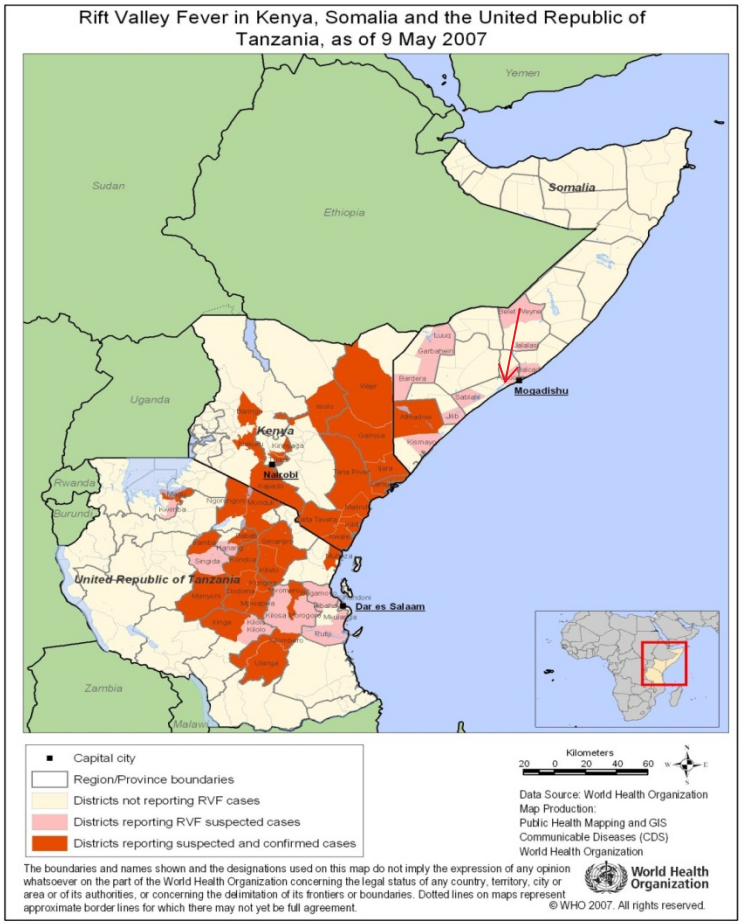
5 year return for flooding in Jowhar along Shabelle river – Agro-pastoral area.



Recent RVF outbreaks in Somalia



Districts reporting suspected and confirmed RVF in May 2007



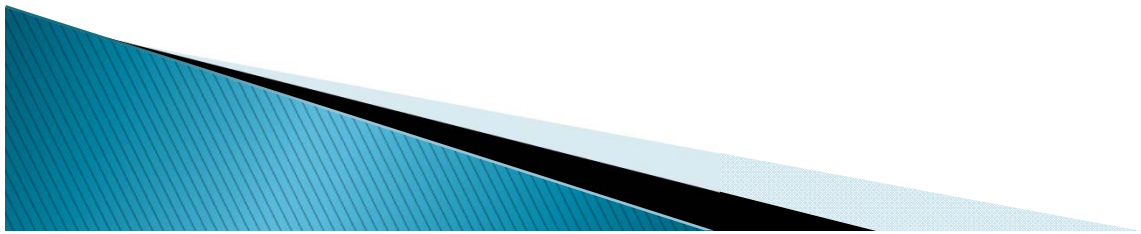
Suspected and confirmed cases of RVF occurred along the Shabelle and Juba river basins and other areas with high risk for flooding.

RVF outbreaks in Somalia

- In the 2006/2007 RVF epizootic in Somalia was confirmed in humans and livestock in many regions including:
  - Gedo,
  - Lower and Middle Juba,
  - Lower and Middle Shabelle,
  - Hiran.

RVF and livestock import bans

- Livestock import ban persisted through prolonged inter-epizootic periods (IEP) with the lowest risk of virus transmission.
- In September 2009 KSA officially lifted the livestock import ban for Somalia.
- Live animal exports from Somalia has increased tremendously since the official lifting of the trade ban.
- Surveillance for RVF and other trade-limiting diseases needs to be strengthened to safeguard livestock export trade.



RVF surveillance

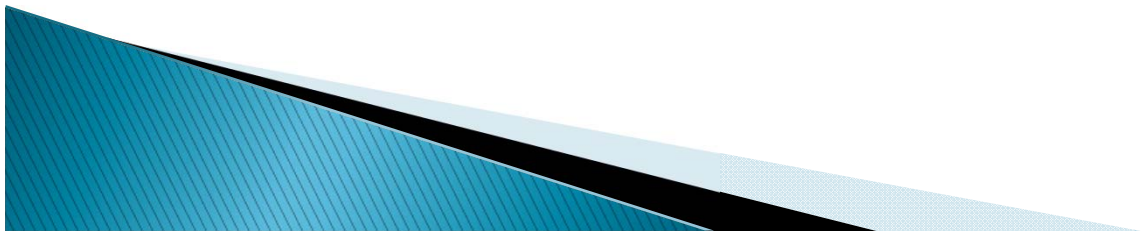
- Data on disease outbreaks in Somalia is mainly gathered through passive surveillance.
- Surveillance and laboratory diagnosis is supported by Somali Animal Health Services Project (SAHSP) through public/private partnerships.
- Monthly disease outbreak reports are submitted to AU-IBAR.
- Timely 6-months reports on presence or absence of OIE listed diseases in Somalia are submitted to OIE.
- RVF cases were last reported in July 2007 at the end of the 2006/2007 epizootic in Eastern Africa.

RVF surveillance

- The SAHSP project conducted serological surveys in 2001, 2003 and 2007 after the 1997/98 and the 2006/7 RVF epizootics /epidemics, respectively.
- The survey was done in the flood prone areas in Puntland and Somaliland and in central and southern Somalia.
- ELISA and virus neutralization assays were used for detection of antibodies to RVF virus.
- IgG antibodies to RVF virus were detected in Somalia as follows:
  - In Puntland and Somaliland the RVF antibody prevalence in 2001 and 2003 ranged from 1.7% to 8.2% in goats and sheep, respectively.
  - In central and southern Somalia in 2007 IgG prevalence ranged from 5.7% to 26.6% in goats and sheep.
  - In all cases RVF antibody prevalence was highest in sheep.

RVF Sentinel Surveillance

- Two sites with a history of RVF were selected for RVF sentinel surveillance;
  - Shabelle river basin between Jowhar and Balcad (Agro-pastoral areas): 120 households were surveyed.
  - Nugal valley in Puntland/Somaliland (pastoral area); 100 households were surveyed.
- 1,200 sera were collected from ewes between the age of 1 to 5 years in central Somalia.
- Sera were tested using an inhibition ELISA for detection of antibodies to RVF virus in livestock.
  - *RVF vaccination is not done in Somalia.*



RVF sentinel surveillance: Central Somalia

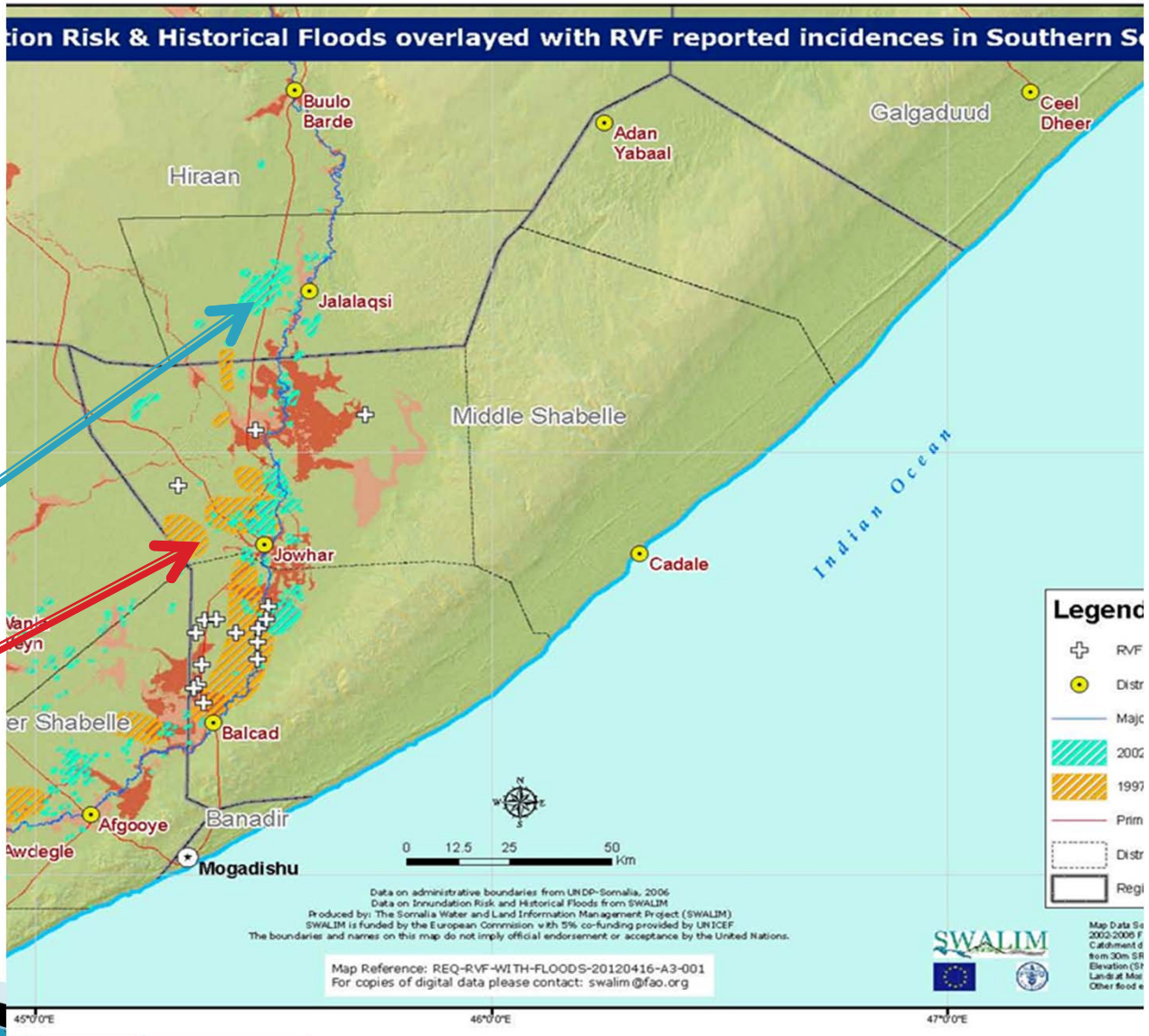
- Number of flocks positive for antibodies to RVF virus - 34% (41/120)
- Prevalence between households ranged from 5% (1/20) to 20% (4/20).
- 53% of the seropositive ewes were between 1 and 2 years of age and 47% of the ewes were over 2 years old.
- The overall prevalence was 5.3% (64/1200).
- Serology results were used to select sentinel flocks – two RVF virus positive sites and two RVF virus antibody negative sites.
- Access to the flock and cooperation of the livestock owner were other factors considered.

RVF virus activity in high flood risk areas

RVF virus activity in areas with high risk for flooding.

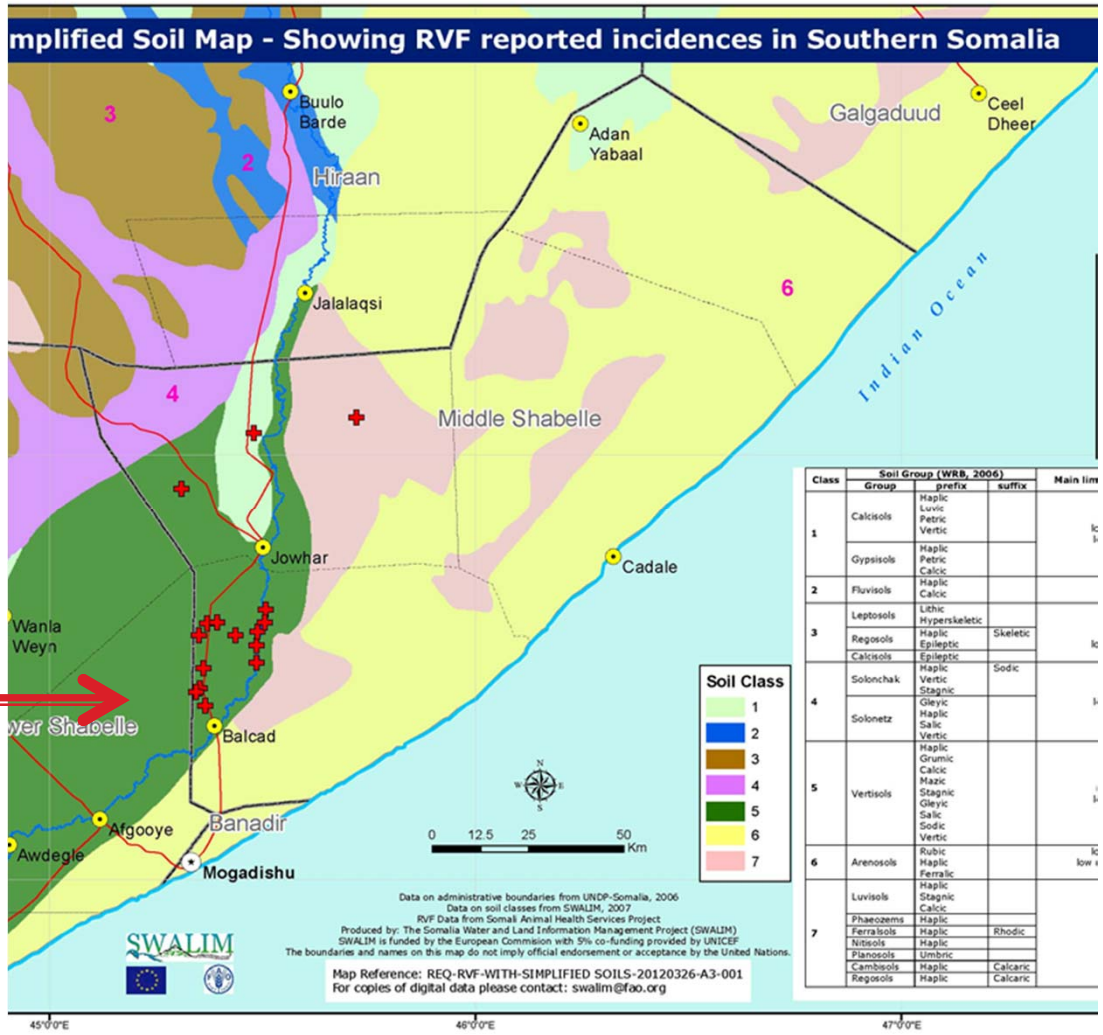
2006

1997

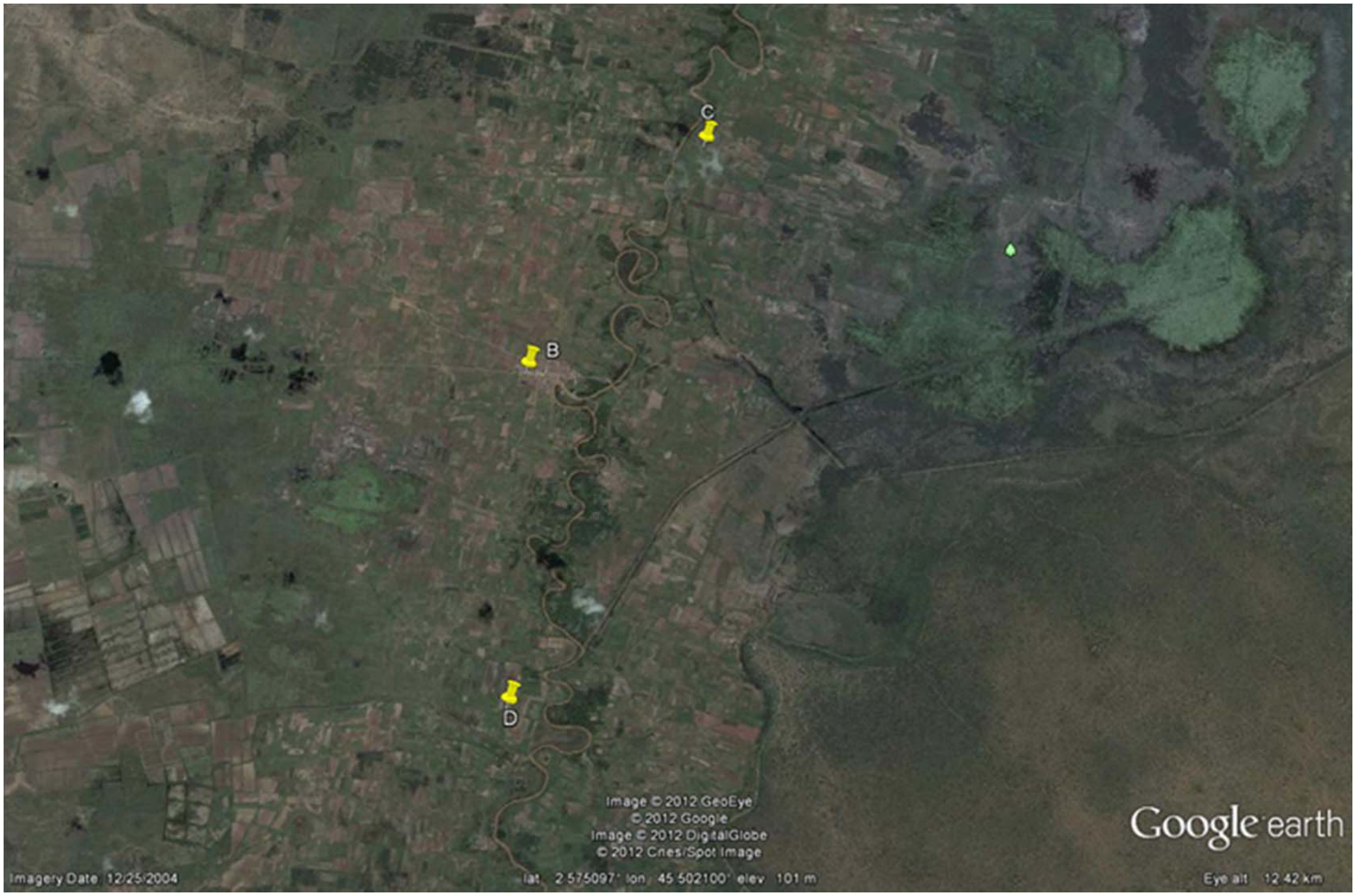


RVF virus activity in Shabelle river basin

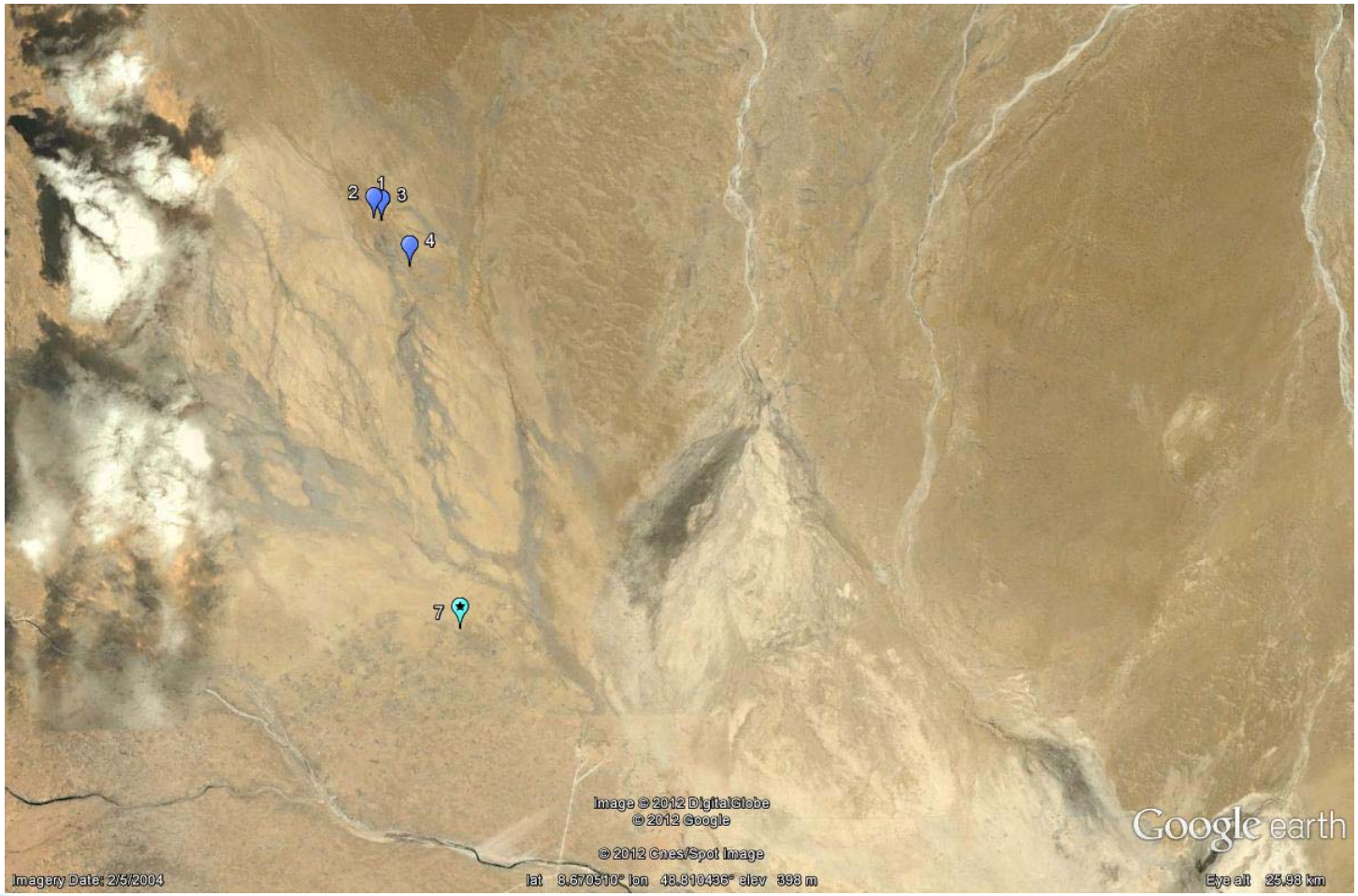
87.5% of the RVF virus activity positive sites were on poorly drained vertisol soils.



Sites with RVF virus activity in 2011

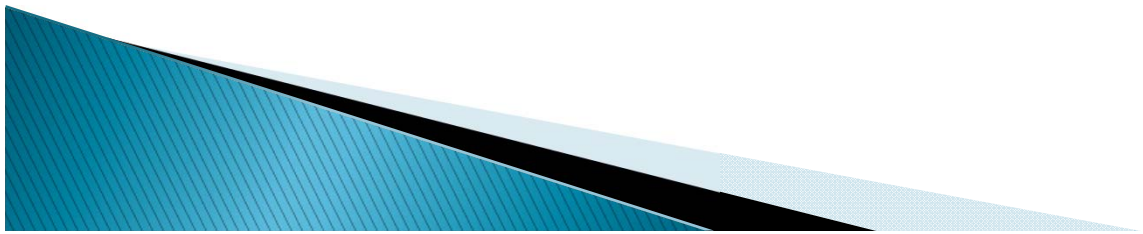


RVF virus activity in pastoral areas in Nugal Valley



RVF sentinel surveillance

- Sentinel populations comprised of:
  - 60 ewes in a flock that was negative for antibodies to RVF virus,
  - 60 ewes in a flock that was positive for antibodies to RVF virus.
  - The two sentinels are within areas with a history of RVF in central Somalia where agro-pastoralism is the mainstay.
  - A similar set of sentinels was established in the pastoral area of Nugal valley.
  - The flocks are monitored for clinical disease by area veterinary coordinators working with members of Livestock Profession Associations.
  - Serum samples collected at the beginning of the rains are to be tested at KARI Biotechnology laboratory.



Emergency preparedness for RVF

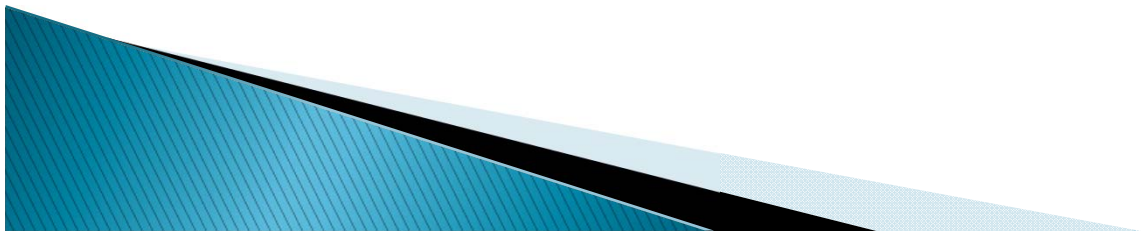
- The Somali Animal Health Services Project has assisted veterinary authorities to develop contingency plans for several trade-limiting animal diseases including RVF.
- Rapid response teams were formed and trained on response strategies.
- Table-top simulations have been conducted to provide training and feedback.
- Awareness on RVF recognition and disease reporting has been enhanced.
- A very limited vector control was attempted in the river basins in 2007.
- Sentinel surveillance is on-going.

Response capacity to disease emergency

- Public institutions in Somalia currently have inadequate human, financial and physical resources to carry out effective response to RVF re-emergence.
- In the past, NGOs and UN agencies have provided the support needed for response to RVF outbreaks.
- Sanitary measures for disease prevention and control remain weak and not easy to enforce in the pastoral and agro-pastoral areas.

Institutional Co-operation

- Veterinary and Public health institutions are inadequately resourced for effective response to an outbreak.
- Response to an outbreak is usually through the Livestock Professional Associations with support from INGOs and UN agencies.
- There are no formal mechanisms for inter-agency cooperation during RVF outbreaks.
- Contingency plans emphasize need for multisectoral response, cooperation and coordination during outbreaks.
- Recent political developments could provide an enabling environment for institutional cooperation in response emergency of zoonotic diseases.



RVF vaccination

- The sporadic nature of RVF outbreaks and the long inter-epizootic periods have made rational and timely use of RVF vaccines challenging.
- Additionally, animal health requirements from some of the importing countries ban RVF antibody positive livestock.
- The negative impact of RVF on the economy of Somalia arising from import bans has made RVF the most feared disease in Somalia.
- In consideration of the important role played by livestock in the economy of Somalia the “silent” Somali policy on RVF prevention is not to vaccinate.

ASANTE SANA