

Geomatics in Pakistan

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3rd Meeting of ECO Geomatics Committee held on 18 October, 2021 at Tehran-Iran



Outline

- **Introduction**
- **Policies**
- **Projects/Activities**
- **Opportunities for Regional Cooperation**
- **Conclusion & The Way Forward**



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Introduction

- Geomatics present useful analysis tools in several technical-scientific fields (Hay et al., 2017)
- World Health Organization (WHO) underscore the importance of Geomatics to control and prevent diseases (Jebara, 2007)
- Geomatics data/tools can help to analyze issues & increase agricultural yield, policy-making and combat terrorism (Asmat & Imran, 2021 ; Asmat, 2010)



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Geodesy, Photogrammetry, topographic survey & mapping, digital mapping, gravity measurements, remote sensing, image processing, geo-spatial information system, geo-database, spatial data infrastructure (SDI) and research & development, as well as disaster management



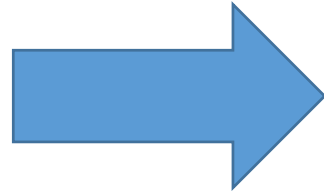
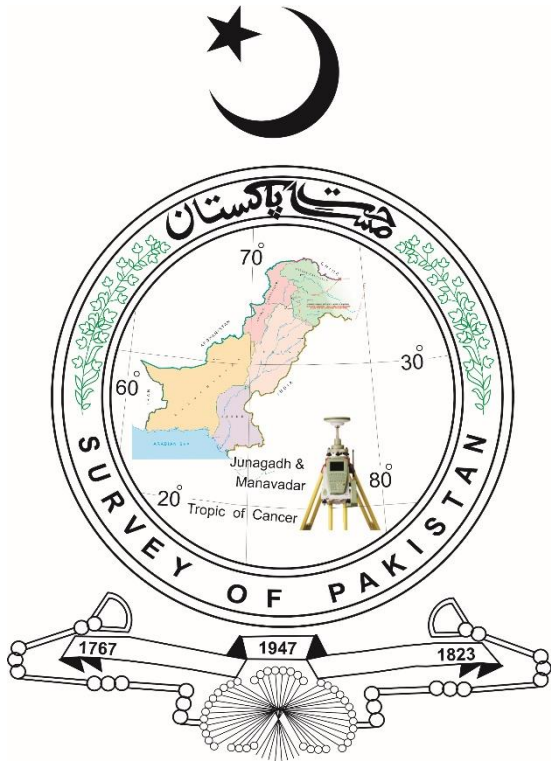
Geomatics



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Survey of Pakistan (SoP)



National Mapping Organization (NMO)

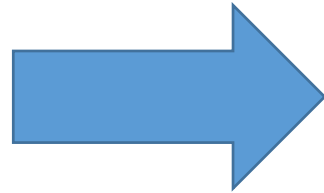
- Geodesy
- Photogrammetry & RS
- Topographic Survey & Mapping
- Geo-database
- SDI
- R & D



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Geological Survey of Pakistan (GSP)



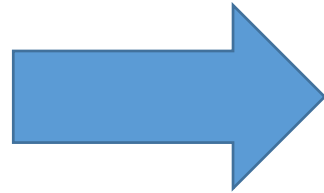
- Geological Mapping
 - Mineral Exploration
- Remote Sensing
- GIS
- Disaster Management
 - Seismic Hazards
- R & D



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Space & Upper Atmosphere Research Commission (SUPARCO)



- Remote Sensing
- GIS
- Disaster Management
- R & D



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National Policies

❖ SURVEYING AND MAPPING ACT, 2014

- All basic data or information comprising geodetic data, gravity data, magnetic data, topographical or geographical data, aerial photographs, and all relevant records, both analog and digital, prepared and possessed by Survey of Pakistan shall be maintained in the form of a national geospatial database.



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National Policies

❖ SURVEYING AND MAPPING RULES, 2015

- Standards
- Metadata
- Spatial database
- Geoportal



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Some Key Projects/Activities

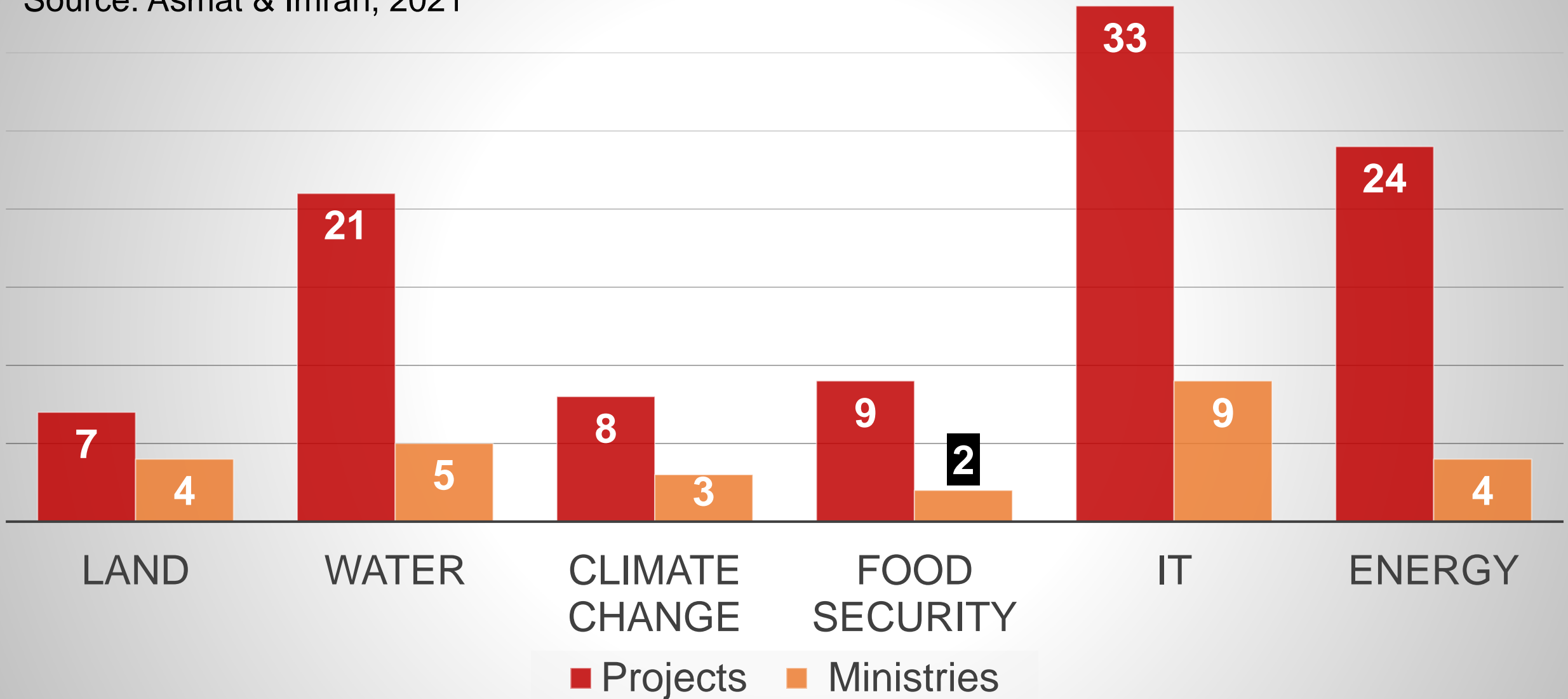


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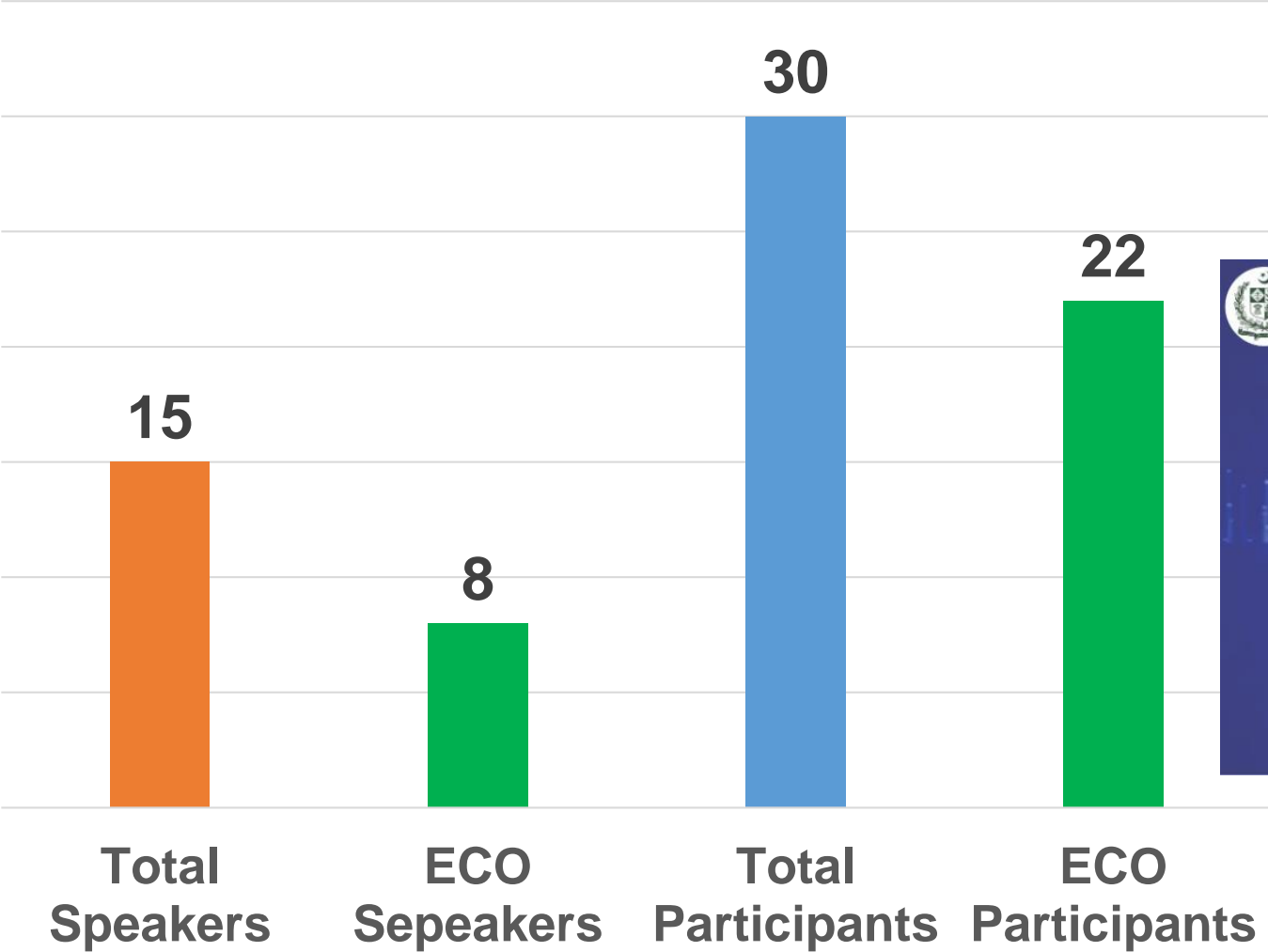


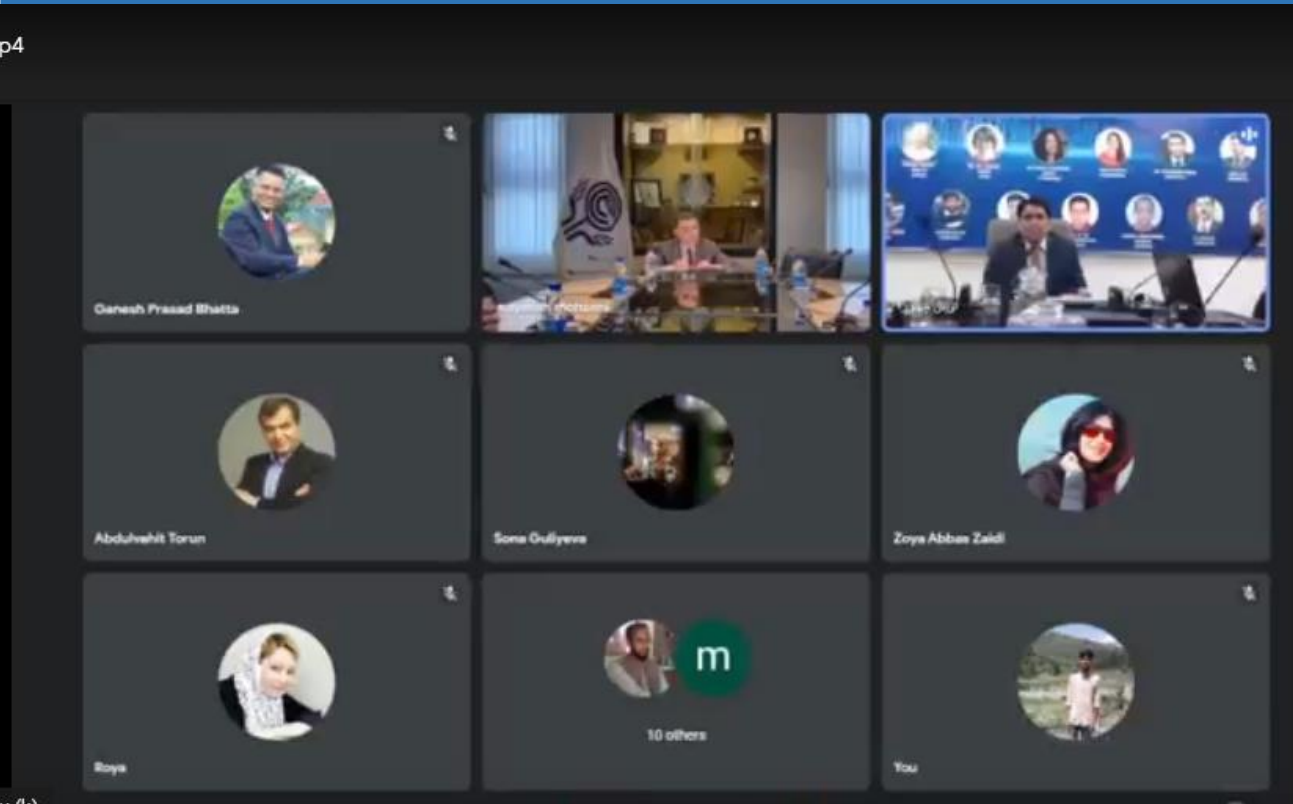
Projects

Source: Asmat & Imran, 2021



Capacity Building Workshop on Geomatics (13-15 Sep)





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New Geodetic Datum

- Geodetic reference serves as a foundation
- Pakistan is in the process of establishment of a new geodetic datum for the country.
- The purpose and goal of the project are to provide a highly accurate and consistent geocentric coordinates system so that provision of good quality geospatial information can be ensured throughout the country.



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Cadastral Mapping Project

8th Sep, 2021

“The Survey of Pakistan was assigned the task of cadastral mapping. In the first phase, digitisation of revenue records of three major cities Karachi, Lahore and Islamabad and state land data of the country will be done”.

<https://www.dawn.com/news/1645242>



Prime Minister Imran Khan addresses the launching ceremony of cadastral map of Islamabad in the capital on Wednesday. — PID



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National Naming Authority

Pakistan also proposed a National Naming Authority in November 2019 Under Section 19 Para (1) of Surveying & Mapping Act-2014.



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National Spatial Data Infrastructure

The Government of Pakistan (GOP) mandated the Survey of Pakistan to develop national spatial data infrastructure (NSDI) with the collaboration of relevant stakeholders for the country in 2014 (GOP, 2014). Accordingly, Survey of Pakistan is in the process of implementing the NSDI (Ali & Imran, 2021).



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Opportunities for Regional Cooperation

- The Geomatics Committee can help **young professionals** to give them skills, experiences, and networks necessary to transform them into a Eco Community of Change-makers & Nation Builders
- The ECO Geomatics Committee can provide opportunity to **seasoned professionals** to share and transfer their knowledge to young ones



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Conclusions & The Way forward

- Geomatics is a rapidly growing industry
- Pakistan is actively implementing various projects to boost Geomatics
- Iran & Turkey are leading in ECO region
- Setting up a Coordination Committee of NMOs of ECO region is recommended
- Various working groups under this committee be constituted
- ECO Geoportal to be launched for data sharing
- To solve socio-economic problems of ECO region such as COVID-19 & beyond
- ECO Geomatics Journal



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Thank You



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References

- Ali, Asmat. (2010). “The Role of Remote Sensing in Fighting against Terrorism- A Case of Pakistan.” In *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences - ISPRS Archives*. Vienna, Austria: ISPRS.
- Ali, Asmat, and Muhammad Imran. (2021). “National Spatial Data Infrastructure vs Cadastre System for Economic Development: Evidence from Pakistan.” *Land* 10 (2): 188.
- Hay, SI, RW Snow. (2017). “From Predicting Mosquito Habitat to Malaria Seasons Using Remotely Sensed Data: Practice, Problems and Perspectives.” *Elsevier* 14 (8): 306–13. [https://doi.org/10.1016/S0169-4758\(98\)01285-X](https://doi.org/10.1016/S0169-4758(98)01285-X).
- Jebara, K. B. (2007). “The Role of Geographic Information System (GIS) in the Control and Prevention of Animal Diseases.” *Conf. OIE 2007*, 175–83. <http://www.oie.int/doc/ged/D4545.PDF>.

