Bushpigs in Madagascar: at the crossroad of wildlife, livestock, human and ecosystem health

R. Ramy-Ratiarison¹,², A. Rouillé¹,³, J. Ravaomanana⁴, E. Rakotomalala¹, V. Grosbois⁵, S. Molia¹,⁵,⁶, R. Rakotoarivony¹,², F. Roger⁵, F. Jori⁵, M. Pedrono¹,⁵
¹ CIRAD, UPR AGIRs, Antananarivo 101, Madagascar; ² Université d'Antananarivo, Faculté de Médecine Vétérinaire, Antananarivo 101, Madagascar; ³ Université de Rennes I, 35042 Rennes Cedex, France; ⁴ FOFIFA-DRZV, Antananarivo 101, Madagascar; ⁵ CIRAD, UPR AGIRs, 34398 Montpellier, France; ⁶ Institut Pasteur de Madagascar, Antananarivo 101, Madagascar

Introduction: about bushpigs...

• Largest land vertebrate in Madagascar, introduced from Africa by human
• Very little is known thus far about bushpigs in Madagascar
• Our objective = obtain information on:
  1) the drivers of their presence near human settlements
  2) their diseases and ability to transmit diseases to pigs and humans
  3) their importance as a source of animal protein and income through studies conducted around Ankarafantsika national park

1) Ecological study

• MM
  - Abundance of bushpigs assessed through transect survey of footprints and feces
  - Impact of environmental factors on abundance tested through GLM models

• Results
  - Abundance of bushpigs increased in savannahs during the fruiting period of monkey orange (Strychnos spinosa)

2) Pathological & epidemiological study

• MM
  - Investigate the presence of pathogenic agents in blood samples, organs and feces from bushpigs (n=29, sufficient to detect a 10% prevalence)
  - Questionnaire survey of hunters and butchers

• Results
  - High prevalence of internal parasites
  - Null seroprevalence of African swine fever
  - Null prevalence of hepatitis E virus
  - One report of bushpig with cysticercosis
  - Possible transmission of diseases to both pigs (85% of hunted bushpigs captured alive and brought back to villages) and humans (no protection during slaughter or meat processing)

3) Socioeconomic study

• MM
  - Questionnaire survey of bushpig hunters (whether occasional or professional hunters)

• Results
  - Mean of 3.7 bushpigs hunted/hunter/year
  - Mean reason for hunting: protection of crops
  - Mean of 0.5 bushpigs sold/hunter/year
  - 1 bushpig sold = 18US$ = 0.5 minimum monthly wage
  - Bushpig meat twice cheaper as pig meat

Conclusion

• Main findings
  - Depending on the season, bushpigs feed mainly on monkey orange or crops (cassava, corn, sugar cane) when venturing outside the forest
  - They have a low to null prevalence for African swine fever, hepatitis E or cysticercosis but they are hunted in ways favoring disease transmission
  - They are mainly hunted to protect crops but the demand for bushpig meat is increasing because it is cheap

• Further work
  - Study the sustainability of the hunting pressure (risk for food security? risk for the conservation of other bushmeat species such as lemurs?)
  - Set up surveillance systems for bushpig-related diseases in humans and livestock