



WORLD ORGANISATION FOR ANIMAL HEALTH

Protecting animals, preserving our future

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EBO-SURSY

OIE Regional Representation for
Africa

Bamako, Mali

OIE Webinar

World Wildlife Day

Global wildlife health

3 March 2022

Early detection systems for wildlife

Spotlight on the World
Organisation for Animal
Health (OIE)

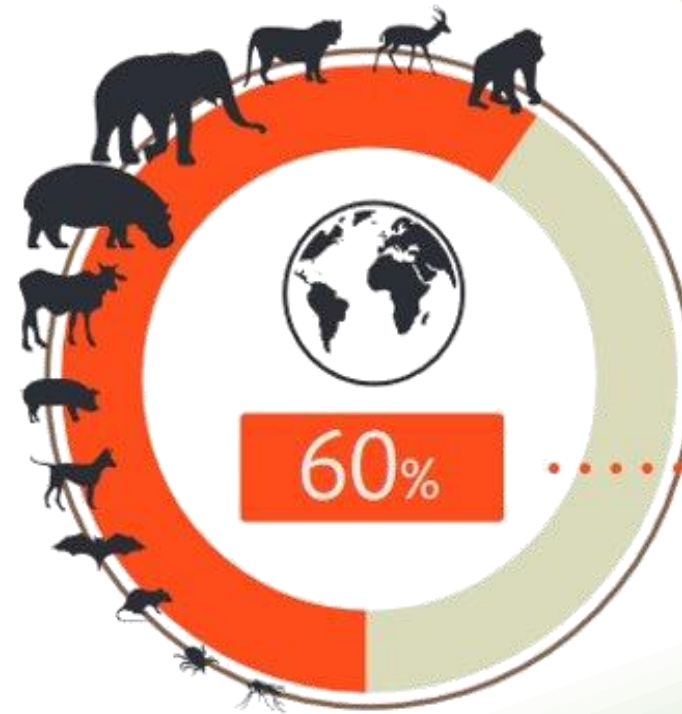


WILDLIFE SURVEILLANCE: WHY BOTHR ?



AT LEAST 3 OUT OF 4 PATHOGENS

of *emerging* infectious diseases in man (including Ebola) are of animal origin : they are **ZOOONOSES**



Fighting zoonotic pathogens at the animal source remains by far the most efficient and cost-effective way to protect people



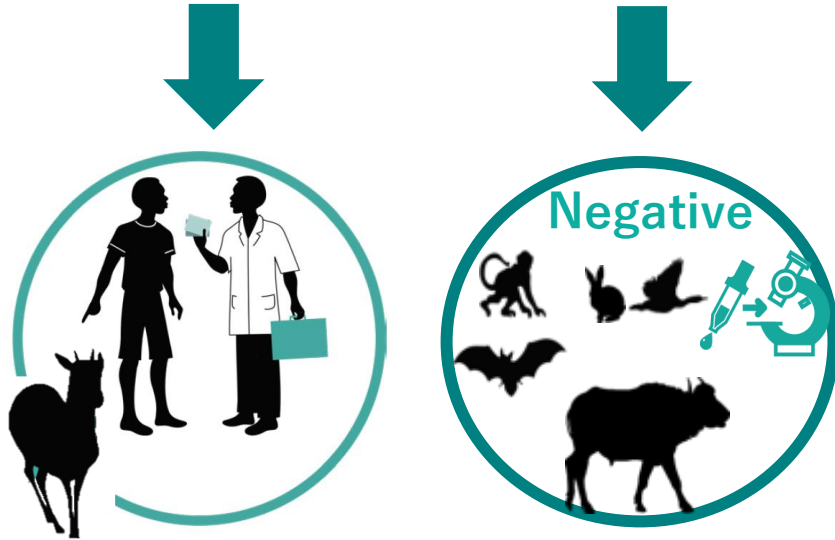
60% of infectious diseases in people are of animal origin



GOALS OF WILDLIFE SURVEILLANCE

One distinguishes 4 major goals of surveillance, based on whether a disease is present or not in a country

Disease is absent



Early detection of
an incursion

Demonstrating
freedom from disease



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Disease is present



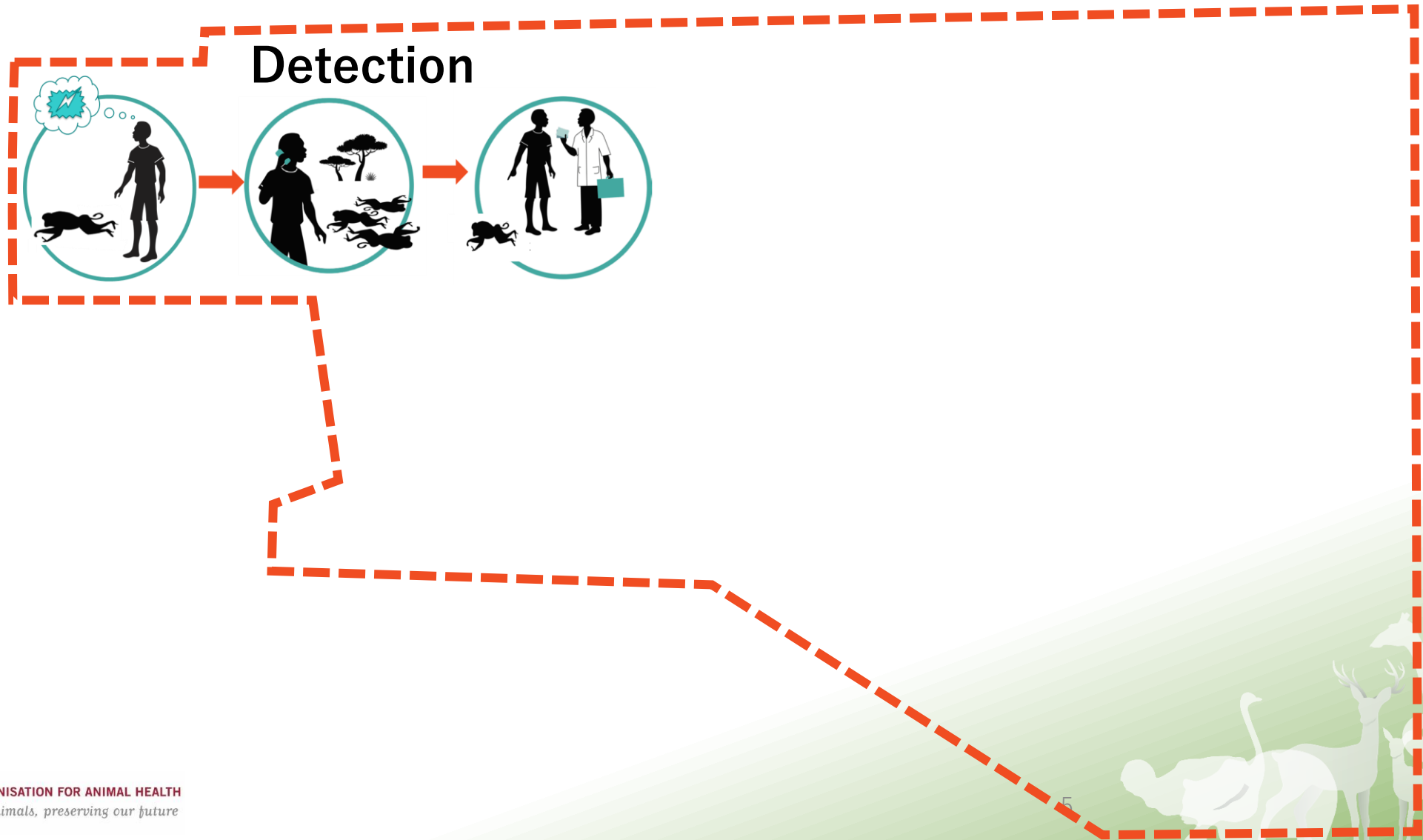
Monitoring disease progression (prevalence, distribution, ...)



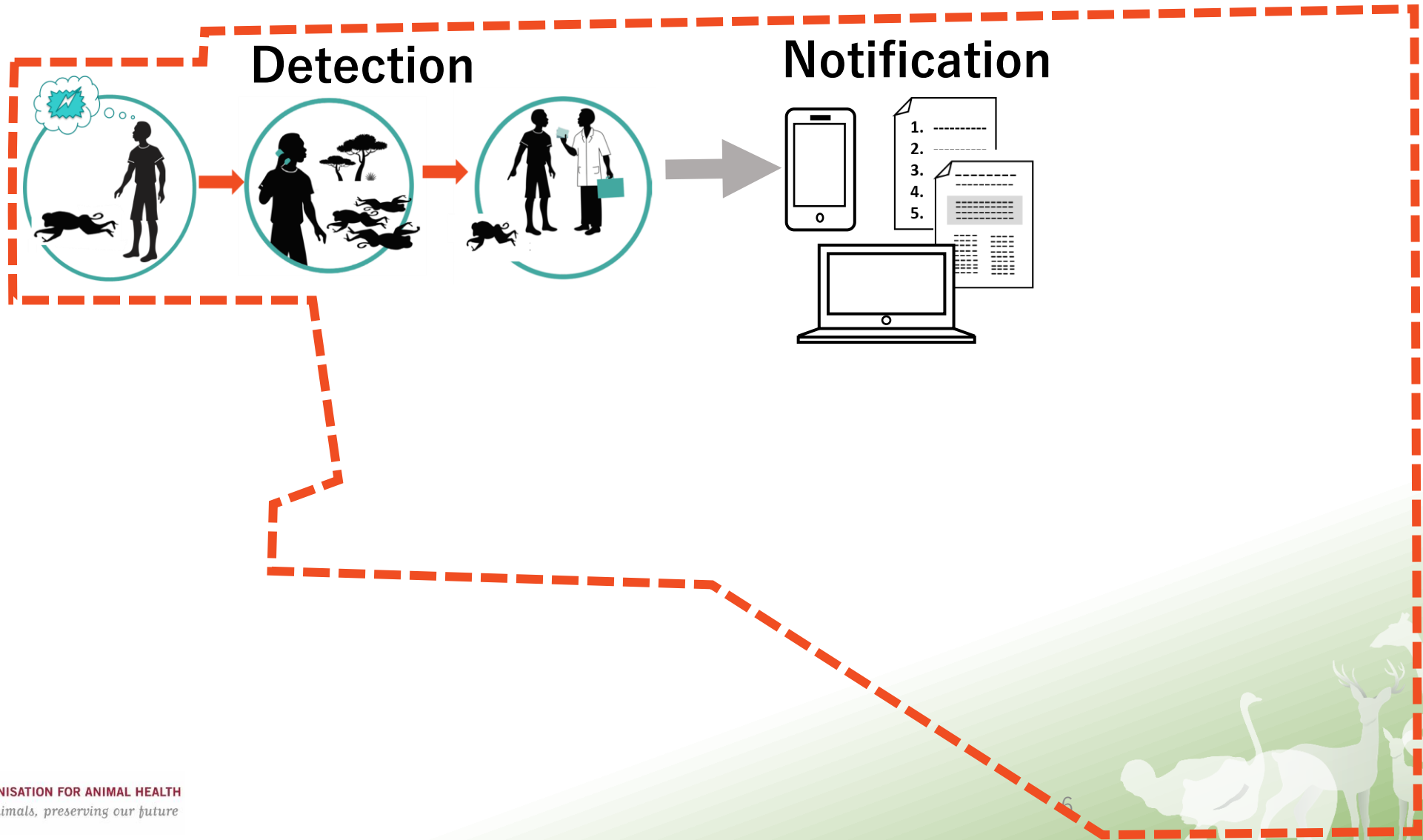
Early detection of cases in view of control

Source : https://www.fp7-risksur.eu/sites/default/files/documents/publications/riskbasedsurv_BPdoc_FINAL_formatted_03.pdf

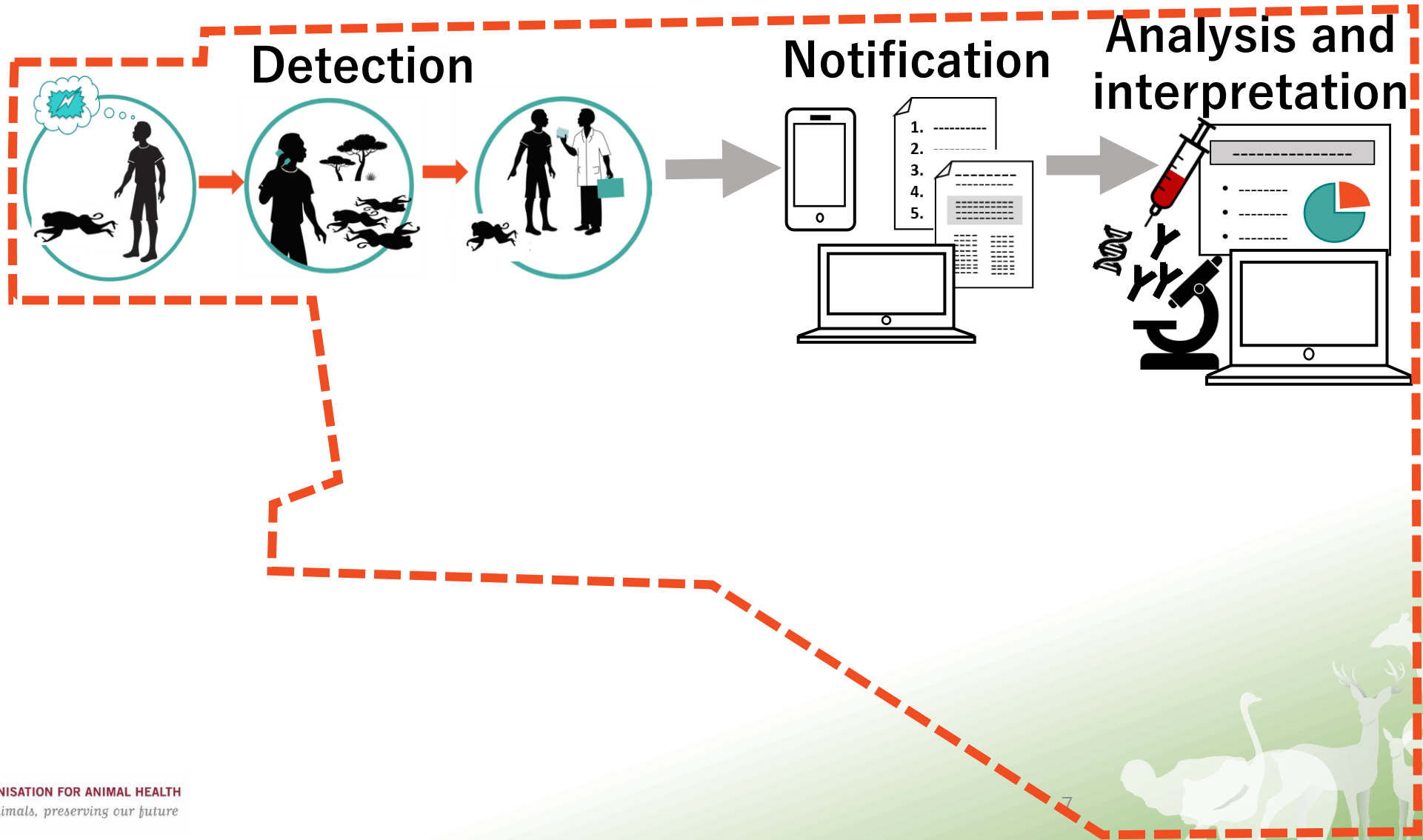
THE PILLARS OF SURVEILLANCE



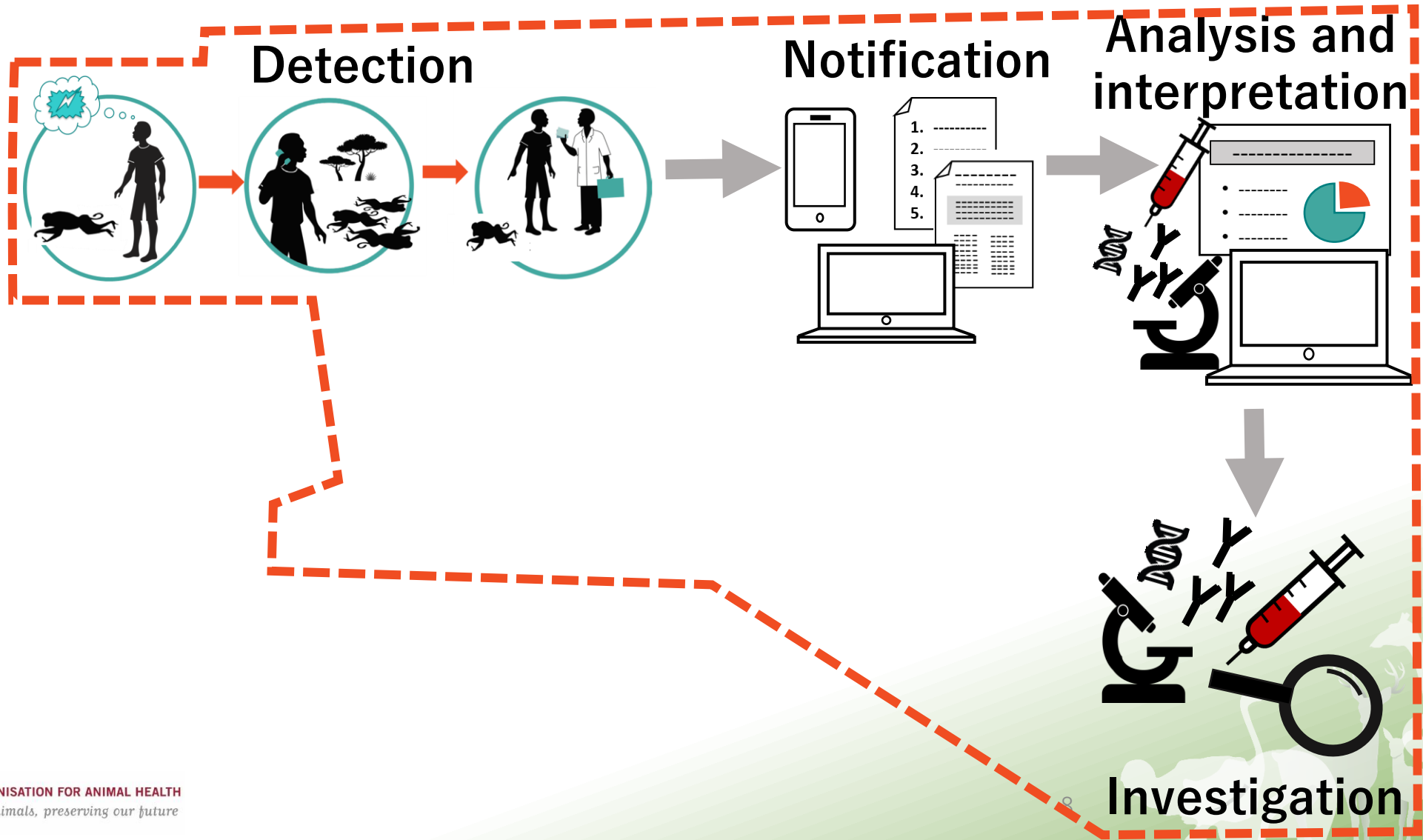
THE PILLARS OF SURVEILLANCE



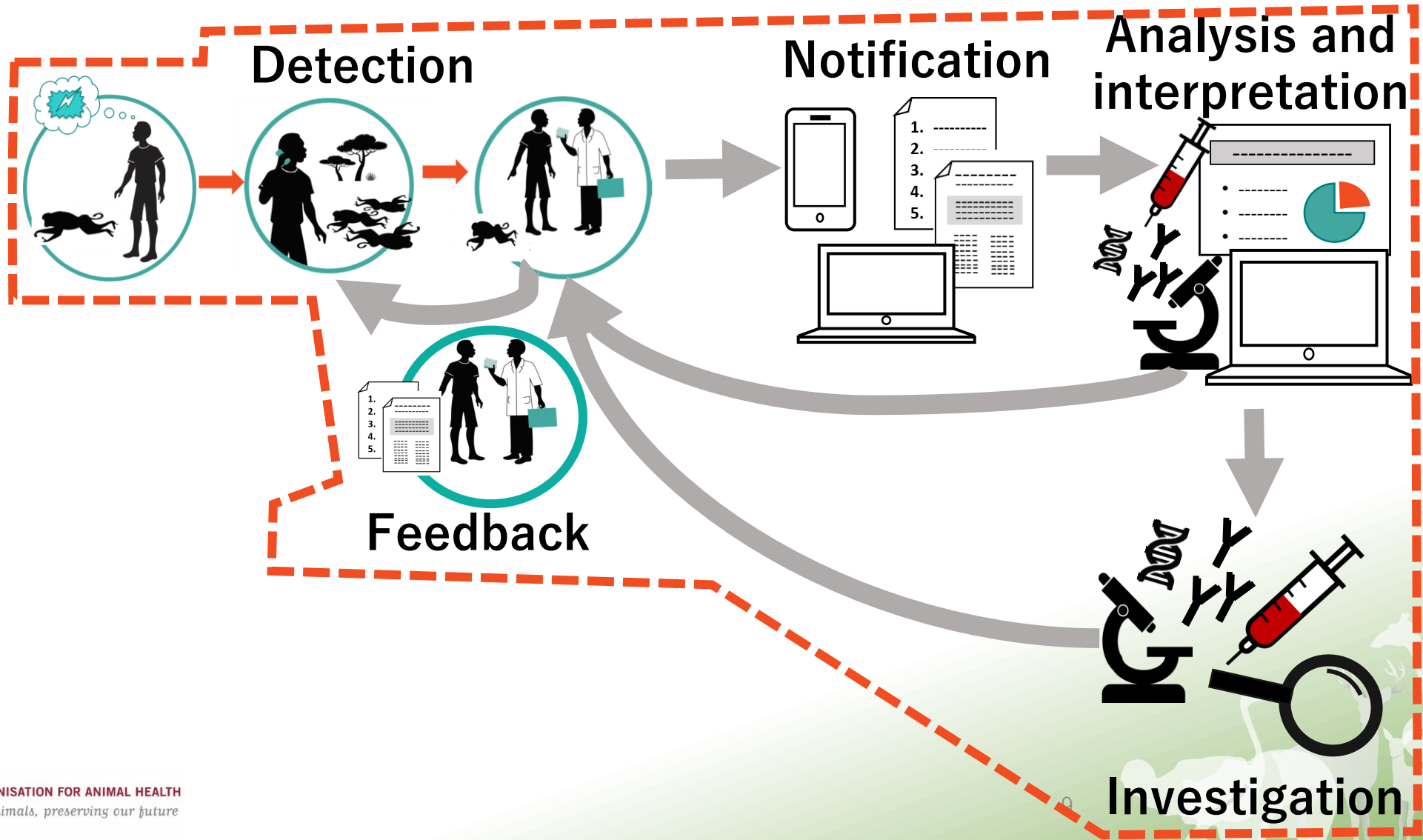
THE PILLARS OF SURVEILLANCE



THE PILLARS OF SURVEILLANCE



THE PILLARS OF SURVEILLANCE



A FEW TYPES OF SURVEILLANCE SUITABLE FOR WILDLIFE

PROS AND CONS



TARGETED / SCHEDULED SURVEILLANCE (ACTIVE)

- Consists in actively searching for a circulating pathogen (antibodies or the pathogen itself).

Pros

- Diseases can be detected even when no clinical signs are apparent (sampling and lab analysis)
- Allows for the detection of diseases that are either asymptomatic or exhibit non-specific symptoms

Cons

- For rare and exotic diseases, sampling sizes can be considerable, leading to higher cost



EVENT-BASED (OPPORTUNISTIC) SURVEILLANCE (PASSIVE)

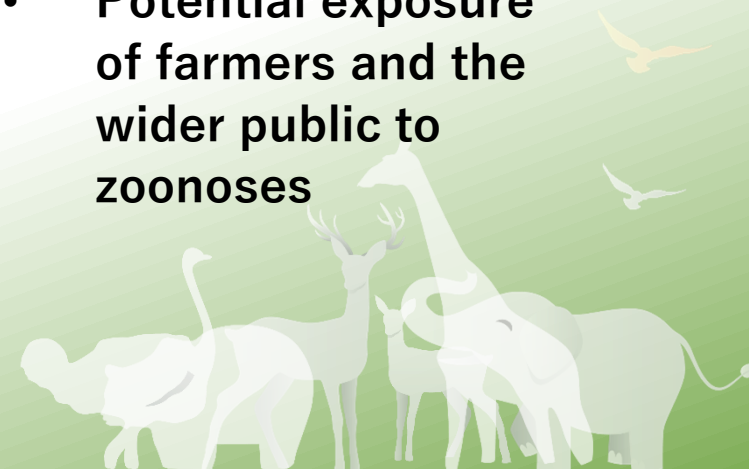
- Most common method for the surveillance of rare and exotic diseases.
- Consists of a reporting system in which farmers, veterinary personnel, medical personnel or rangers notify authorities of a diseased individual.

Pros

- Can cover a major part of the target population
- **Can be integrated into routine tasks of health care workers, veterinarians and wildlife personnel. If done well, costs can be limited**

Cons

- **Risk of under-reporting when:**
 - The participation and motivation of the assigned professionals is weak
 - Dealing with diseases for which clinical symptoms are not very specific or even absent (asymptomatic)
- **Potential exposure of farmers and the wider public to zoonoses**



INTEGRATED SURVEILLANCE

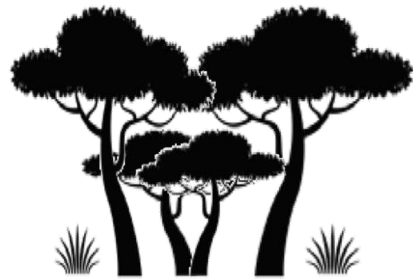
Requires the participation of communities and health facilities, at all levels of the health system.



Human health



Animal health



Environmental health

Pros

- Well integrated into the *One Health* approach
- All components associated to a sanitary event are integrated

Cons

- Elevated training needs
- Elevated cost



A FEW CHALLENGES

- Most often, information on wildlife population size, structure and distribution is lacking
- Certain types of survey require the capture of animals
- Regular monitoring and sampling of wildlife may be challenging
- Large species diversity

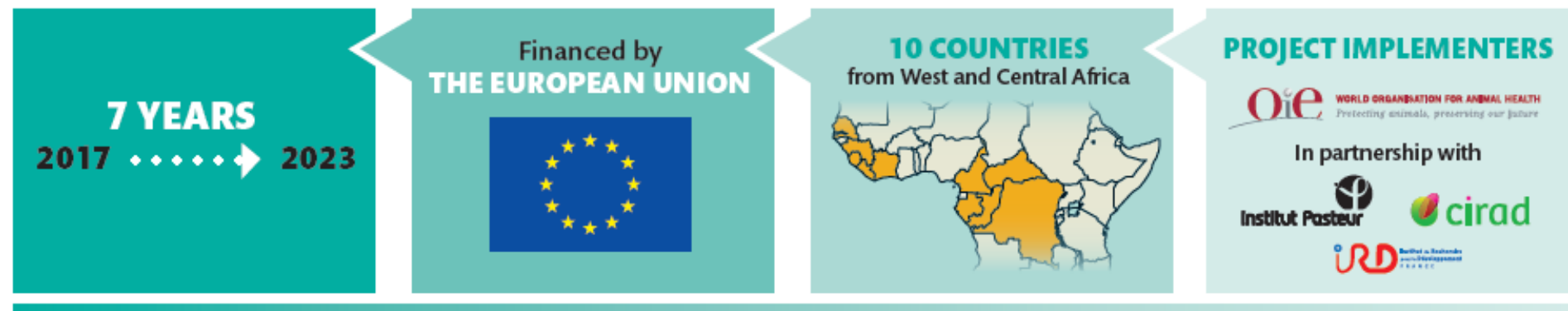


EBO-SURSY IN A FEW WORDS...

IMPROVING EARLY WARNING SYSTEMS and preventing viral haemorrhagic fevers



PROJECT

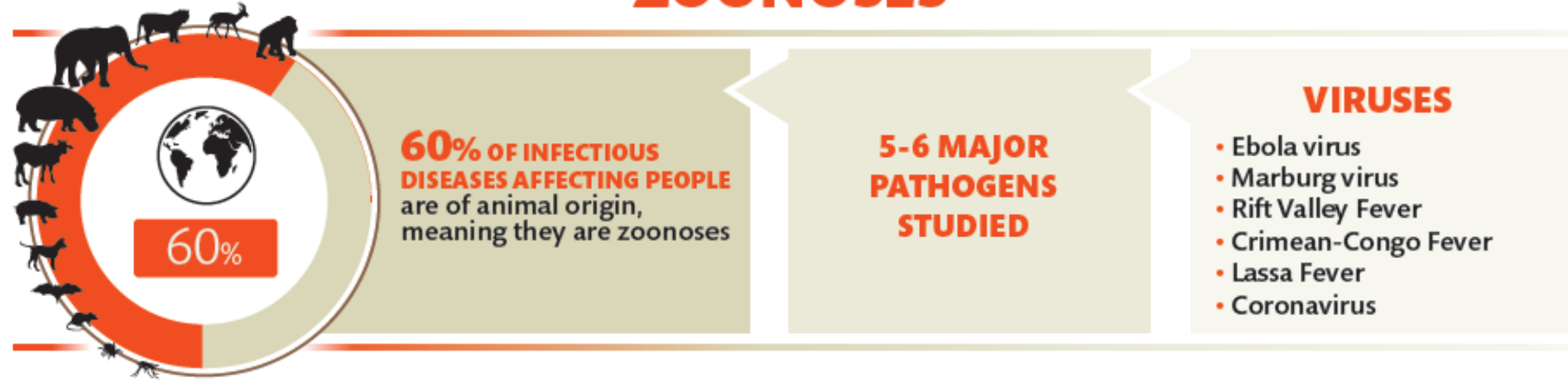


1
INCREASE SURVEILLANCE
CAPACITY FOR VIRAL
HAEMORRHAGIC FEVERS

2
RAISE COMMUNITY
AWARENESS OF VIRAL
HAEMORRHAGIC FEVERS

3
STRENGTHEN SURVEILLANCE
PROTOCOLS FOR VIRAL
HAEMORRHAGIC FEVERS

ZOOZOSES



COMMUNICATION AND AWARENESS OF COMMUNITIES



1,000+
people made
aware

16
scientific
papers

15
communication tools
and products

20
conference
presentations



Serious game ALERT

- Raise awareness among local communities and strengthen collaboration with the technical services entrusted with the system.
- Strengthen the commitment of all stakeholders in the system and thus its effectiveness on a participatory basis.
- Develop simple, sustainable and widely deployable tools and training approaches on good surveillance practices, by national partners.



MATÉRIEL

- 1 plateau *Emergence de la maladie*
- 1 disque en bois *Courseur de maladie*
- 20 cubes en bois *Point de victoire*
- 27 cartes *Aléa* : 18 *Aléas négatif* (rouge) et 9 *Aléas positif* (bleu)
- 117 cartes *Action* :
 - 44 cartes orange (1^{er} niveau local : village),
 - 20 cartes rouges (2nd niveau local : chef-lieu),
 - 28 cartes turquoise (niveau régional),
 - 16 cartes violettes (niveau national)
 - et 9 cartes grises (journalistes et médias)



Results : strengthening surveillance protocols

12,000 wildlife samples
1,000 domestic animal samples

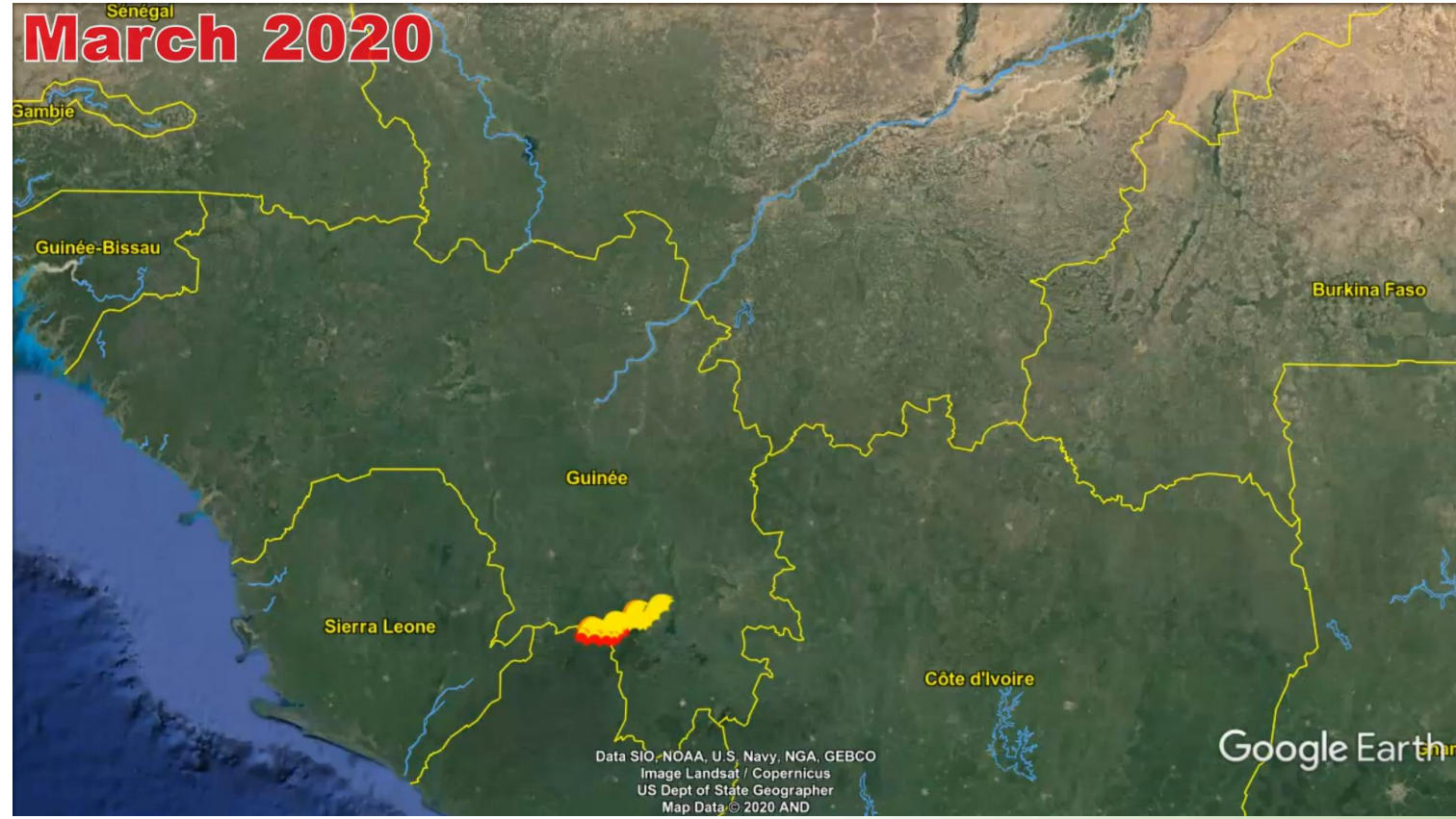
10 ecology, genetics, socio-economic and other studies

5 diagnostic methodologies developed

89 assignments conducted in 5 countries

10 ARGOS beacons and 30 GPS appended to fruitbats

2,000 human samples



Map : Cirad, ASTRE Unit



Results : Ebola research outcomes



Antibody prevalences approaching 1% have been detected in bats and - despite the large number of samples tested using PCR - to date, the presence of the Ebola virus in tested bats has not been demonstrated.

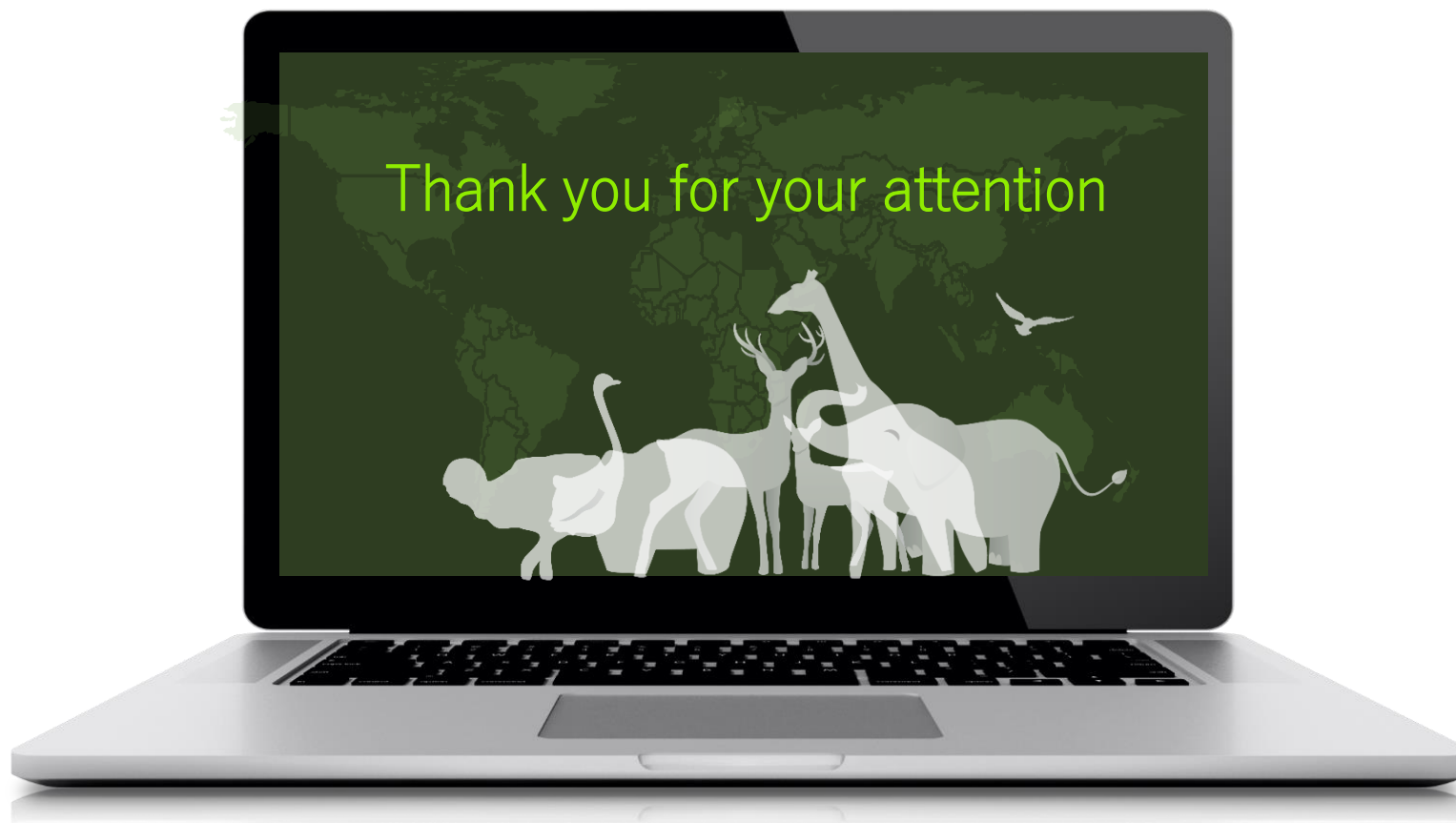
(IRD TransVIHMI)



The results of analyses of more than 4,600 non-human primates in Cameroon and the Democratic Republic of Congo, have shown that non-human primates are not a reservoir, but rather intermediate hosts and victims of the infection.

(IRD TransVIHMI)





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rr-africa.oie.int/en/projects/ebo-sursy-en/