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OIE Regional meeting on Vector-borne diseases in North Africa (December 3rd 2020)

P75 Preventing biological risks increased by environmental and climate change in the Mediterranean, Black Sea, and Sahel regions by strengthening institutional capacities in the context of One Health

- Mitigation of Chemical, Biological, Radiological and Nuclear risks

- Initiative launched in response to the need to strengthen the institutional capacity of countries outside the European Union to mitigate biological risks related to arbovirus and their vectors

- MediLabSecure participates in promoting health security, peace and stability by addressing biological threats

http://www.cbrn-coe.eu/

Vector borne diseases, Climate change & Globalisation

Advocacy for the adoption of a One Health approach

Institutional Networking

Preventing vector-borne diseases around the Mediterranean and Sahel regions by reinforcing **an international network of laboratories and public health institutions**

Capacity building

Enhancing **laboratory preparedness** and response capacities to arboviruses and their vectors

Enhancing awareness of the added value of **integrated surveillance, risk assessment and early warning** to prevent and control epidemics and epizootics
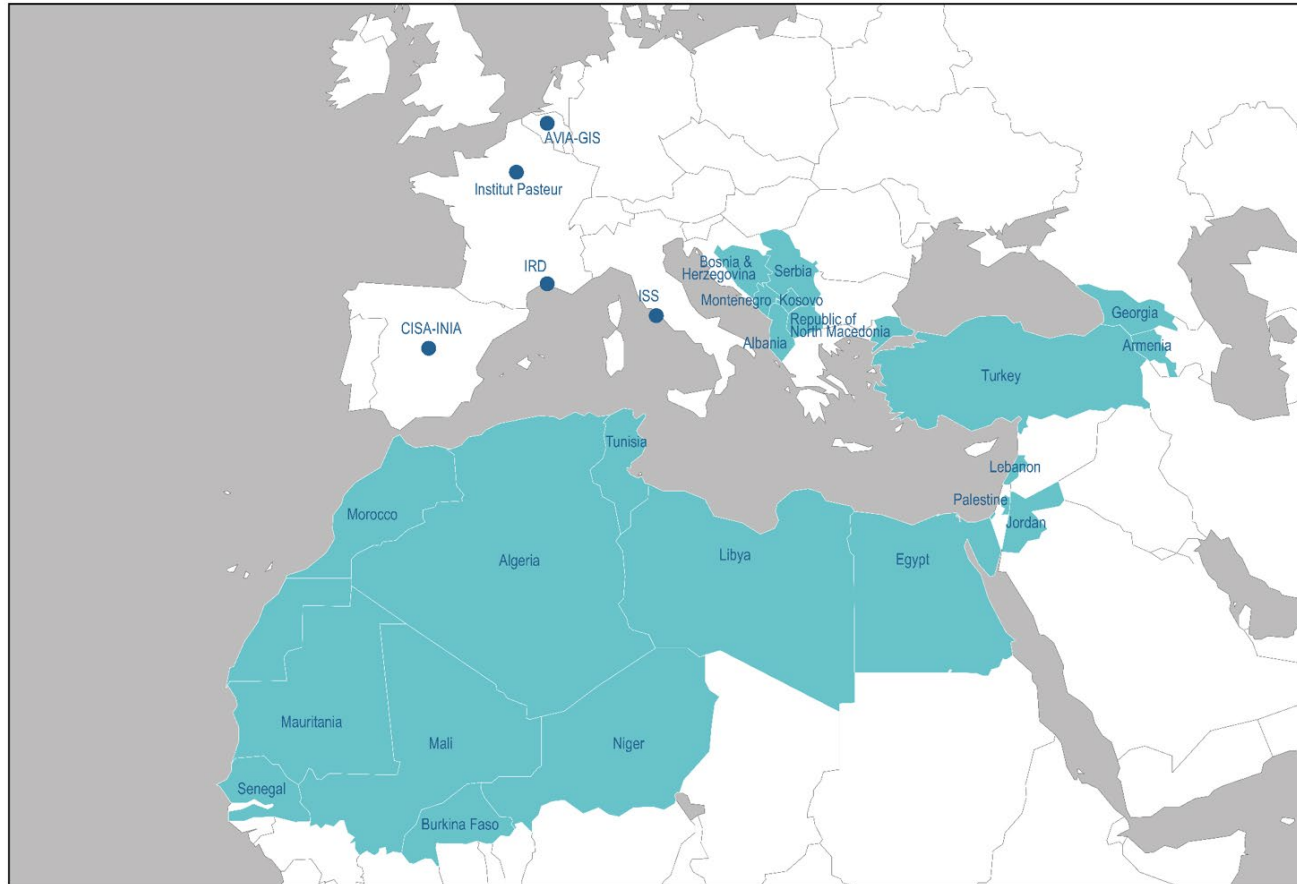
22 beneficiary countries

Project coordination

Purpose 1
Enhancing laboratory preparedness and response capacities to common health threats related to arboviruses and their vectors

1 Human virology laboratories

2 Animal virology laboratories

3 Medical entomology laboratories

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Purpose 2
Enhancing awareness of the added value of integrated surveillance, risk assessment and early warning to prevent and control epidemics and epizootics.

6 Promotion of the network

5 Early warning tool modelling

4 Public health & veterinary services

7 Response to COVID-19
Supporting preparedness and diagnostics

www.medilabsecure.com

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Newsletters

INSTITUT PASTEUR   INIA   IRD   AViA GiS

Centres of Excellence

4

Capacity building

Laboratory preparedness
and response capacities
to arboviruses and their vectors

Human Virology
Animal Virology
Medical Entomology

Trainings
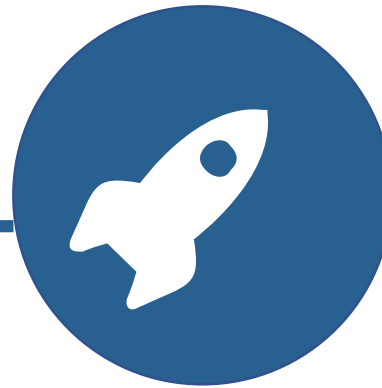Tailored/Tot approach

External Quality
Assesment (EQA)

Tools

Tailored Support

Capacity building

Trainings
Tailored/Tot approach

Laboratory preparedness
and response capacities
to arboviruses and their vectors

Human Virology
Animal Virology
Medical Entomology

Tratnings

Molecular and serological diagnostics of arboviral infections, molecular analyses, bio-informatics analyses, biosafety practices, biorisk management, vector identification, vector monitoring and control

Past trainings

Training on seroneutralization of WNV
ToT approach
Expertise exchange between IP Algiers and IP Tunis
Institut Pasteur d'Algérie, July 15-26, 2019

Next Generation Sequencing Analysis
Institut Pasteur, October 7-11, 2019

Workshop « introduction to mapping & modelling »
Institut Pasteur d'Algérie, October 13-17, 2019

Medical entomology seminar in Sahel
Ouagadougou, October 29-30, 2019

Trainings

Workshop Outbreak investigations: New molecular Tools for the identification of viral pathogen-*May 2021*

Biological Outbreak Investigation Training
Exercise in the mobile BSL-3 EUWAM-LAB
Improve field diagnostic capacities and response to a viral outbreak/hands-on training in a mobile BSL-3 conditions

Institut Pasteur de Dakar

Workshop "WNV & RVFV diagnostic for Sahel countries"
Online/*May 2021*

Workshop "CCHFV DIAGNOSTICS in ANIMAL SAMPLES and TICKS"
INTERSECTORAL approach: open to entomologists & human virologists
Online/*October 2021*

2 Webinars 'Hot topics on vector surveillance, vector control and vector-borne diseases'/ *Summer 2021; Feb 2022*

Capacity building

Laboratory preparedness
and response capacities
to arboviruses and their vectors

Human Virology
Animal Virology
Medical Entomology

External Quality
Assesment (EQA)

OBJECTIVES

▶ Evaluate the laboratory capacity to correctly apply molecular and serological diagnostic techniques for arbovirus detection in biological samples

▶ Assess the capacity of the laboratories to properly interpret the results of the various diagnostic techniques to make a final diagnosis.

▶ Evaluate the capacity of the laboratories to correctly identify vector species

▶ Diagnostic harmonization between labs and countries

Spring 2022 Dematerialized format

EQA on mosquito identification

Follow up Webinar

Capacity building

Laboratory preparedness
and response capacities
to arboviruses and their vectors

Human Virology
Animal Virology
Medical Entomology

Tools

Interactive identification keys for vector

MosKeyTool

- Eng, French
- Sahel region (fall 2021)

https://www.medilabsecure.com/moskeytool.html

PhlebKeyTool

Interactive identification key for Euro-Mediterranean phlebotomine sandflies

- Release for Spring 2021

Vol. 37   JOURNAL OF THE EUROPEAN MOSQUITO CONTROL ASSOCIATION   1

Distribution chart for Euro-Mediterranean mosquitoes (western Palaearctic region)

Vincent Robert[1], Filiz Günay[2], Gilbert Le Goff[1], Philippe Boussès[1], Tatiana Sulesco[3], Alexei Khalin[4], Jolyon M. Medlock[5], Helge Kampen[6], Dušan Petrić[7], Francis Schaffner[8]

2019, **37**:1-28.

10 mosquito factsheets
freely downloadable

https://www.medilabsecure.com/resources_toolkit

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Laboratory preparedness
and response capacities
to arboviruses and their vectors

Human Virology
Animal Virology
Medical Entomology

Tailored Support

Tailored Support

Preparedness and response to the RVF epidemic in Mauritania

- One Health support with contribution from the different sectors
- Technical support for the implementation of diagnostic
- Providing of emergency reagents for RVF diagnostics
- Support for sequencing, modelling
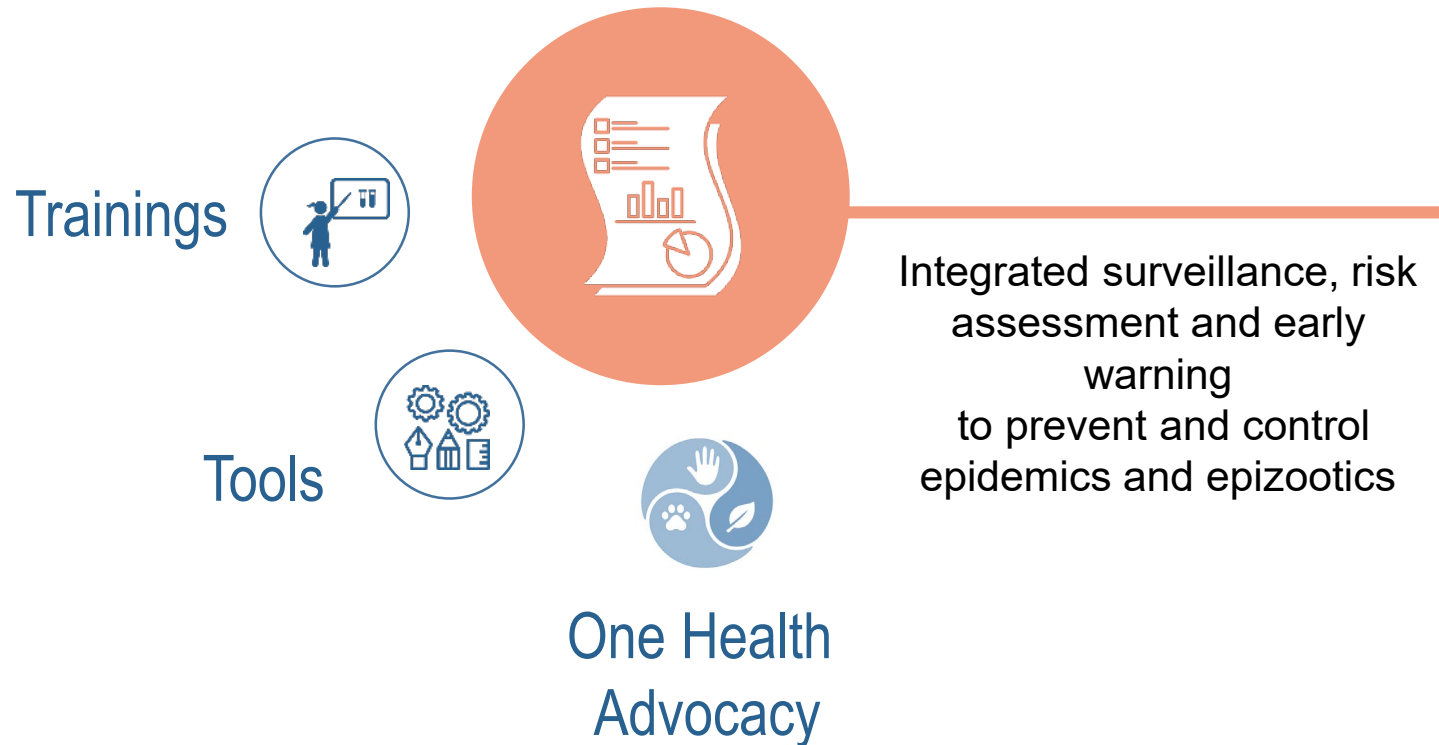
Capacity building

Trainings

Tools

One Health
Advocacy

Integrated surveillance, risk
assessment and early
warning
to prevent and control
epidemics and epizootics

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Work Package 4: Advocacy for One Health approach in the implementation of integrated surveillance and multisectorial risk assessment of arbovirus infections

Public Health and Veterinary Services

Under the coordination of Istituto Superiore di Sanità (Rome)

Paolo Calistri

Activity done[1]

- One Health Scientific Conference: "Strengthening One Health implementation for the prevention and control of arbovirus infections in the Mediterranean and Sahel Regions", Rome (Italy), 26-27 November 2018

- Workshop on surveillance of emerging arboviruses in the Mediterranean region under a "One Health" approach, Teramo (Italy), 11 – 12 December 2018

- Regional Meeting, Dakar (Senegal) 20-24 January 2020:
  - Epidemiology training, including basic training on Rapid Risk Assessment (RRA) methods
  - Multidisciplinary Risk Assessment (MRA) based on RRA approach

Activity done[2]

Training need assessment (TNA) web survey through an on-line questionnaire sent to all MLS2 focal persons of all sectors (human virology, animal virology, medical entomology, public health, veterinary services) of 8 Countries which participated to the 1st Regional Meeting in Senegal (Algeria, Mali, Senegal, Tunisia, Mauritania, Niger, Morocco, Burkina Faso).
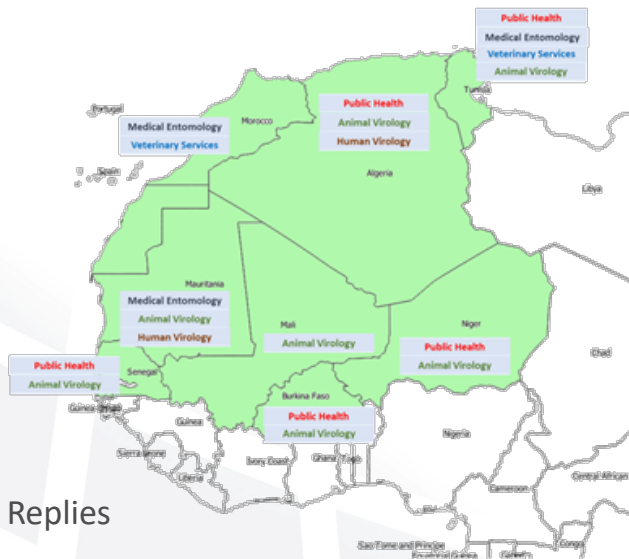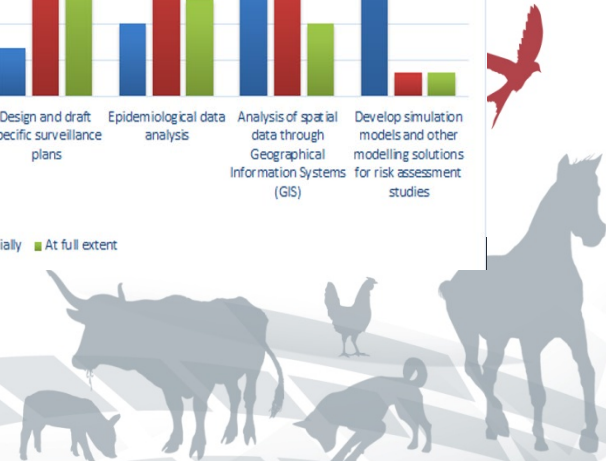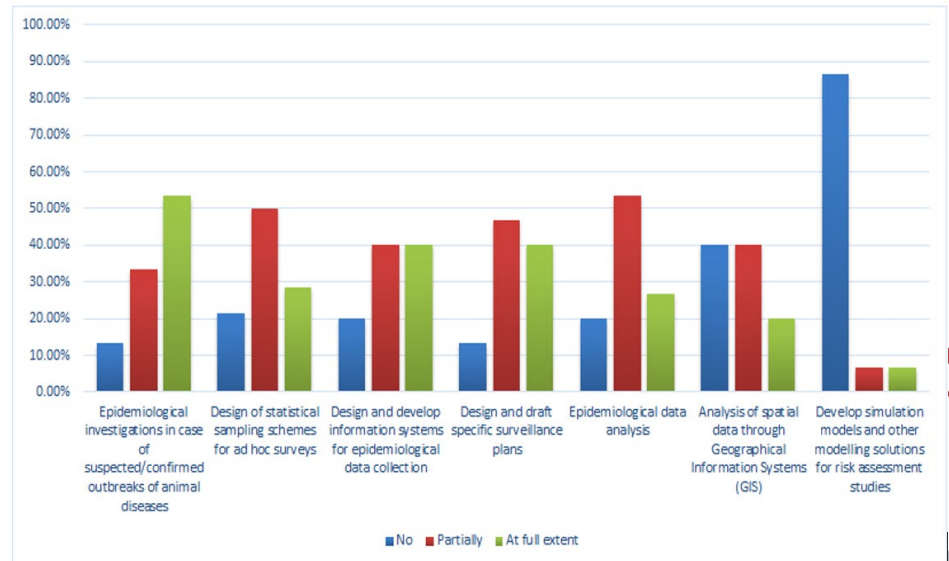

Replies

Planned activities

- MediLabSecure2 situational analysis (MESAPLUS) with study visits in 3 selected countries (currently Armenia, Lebanon and Senegal) aimed at reinforcing integrated early warning through analysis of the surveillance system and training needs assessment

- Elaboration of a Strategic document reporting, discussing and recommending on enhancing early warning for arbovirus infections with One Health approach

- Further capacity-building activities (Epi-trainings with focus on MRA) originally planned during Regional Meetings

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Early Warning Systems
G. Hendrickx

AViA GiS

www.avia-gis.com

What do we do?

Building a solid baseline GIS in epidemiology capacity in all MediLabSecure countries

- Development quantified approach for (historical) country disease status maps
- Provide BL-GIS course to all MLS countries:
  - Face-to-face start-up workshops
  - Distance learning course

Provide advanced GIS in epidemiology capacity building to the three pilot countries

- Provide à la carte advanced GIS-EWS to the three pilot countries Armenia, Lebanon & Senegal:
  - Jointly identify pilot topics for each country
  - Develop & implement adapted GIS approaches to support EWS

Permanent upon request ad hoc support on issues related to the use of GIS as part of daily disease monitoring and early warning activities

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Quantifiable disease status maps

Disease data:
- OIE
- WHO
- GIDEON
- ECDC

Manual data extraction:
- spreadsheet/disease
- Before 2000: aggregated
- After 2000: annual

R-script
Uniform legend:
- Yl: Vector present
- Bl: Imported cases
- Or: Viral circulation
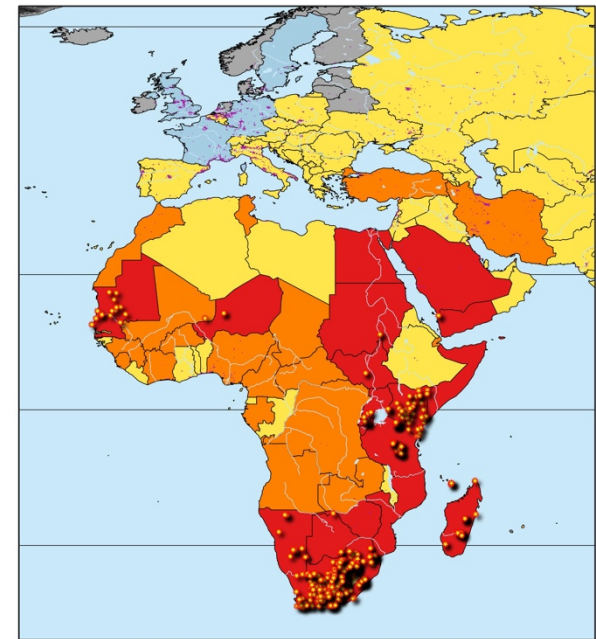- Re: Outbreaks

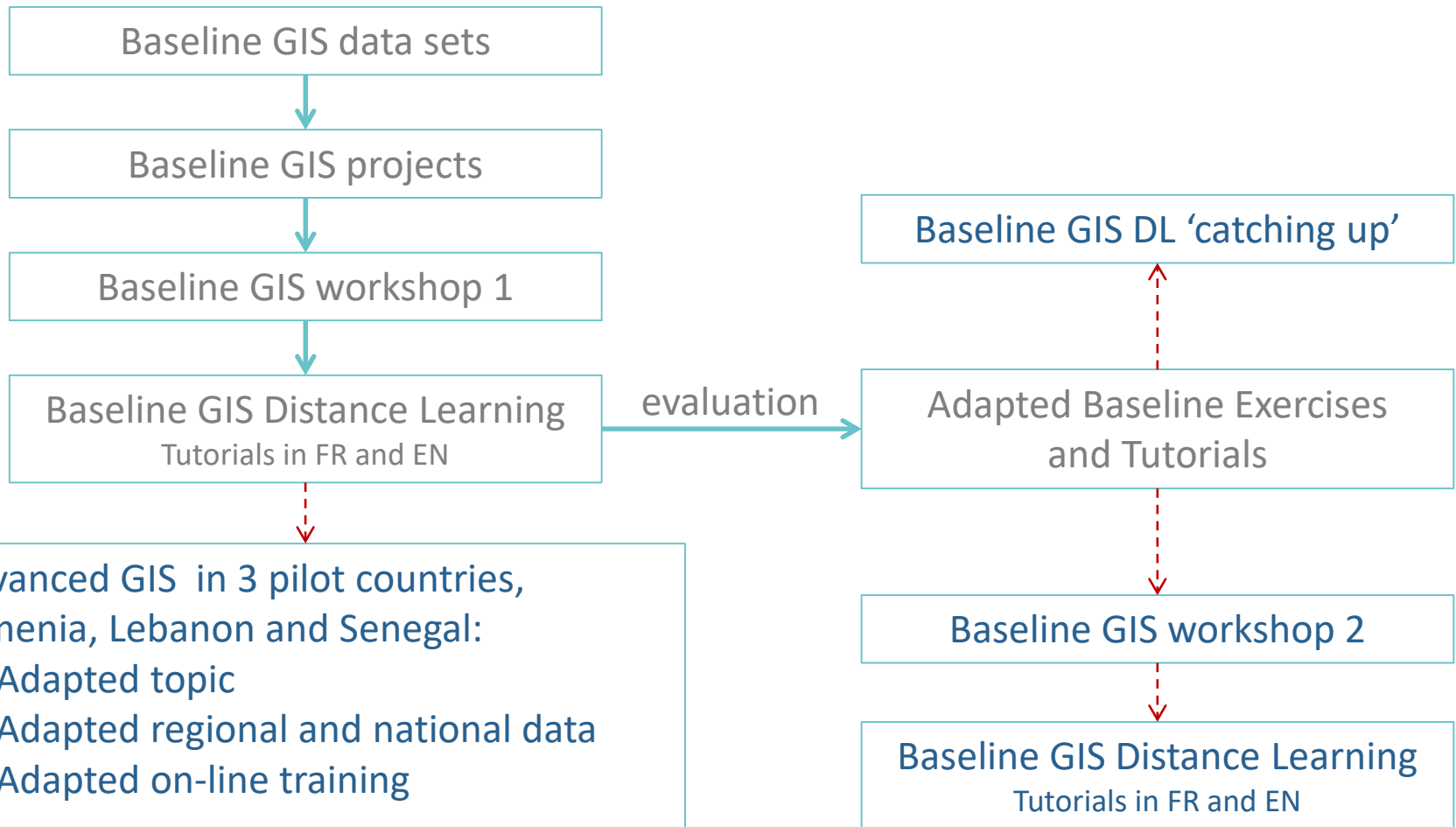Automated data summary /country /year

Automated shape file/ disease

Next steps:
- Methodology/ data paper
- Further automation
  (a.o. through API's)

RVF: historical records

22

GIS-EWS Capacity Building

Baseline GIS data sets

↓

Baseline GIS projects

↓

Baseline GIS workshop 1

↓

Baseline GIS Distance Learning
Tutorials in FR and EN

→ evaluation →

Baseline GIS DL 'catching up'

Adapted Baseline Exercises and Tutorials

Baseline GIS workshop 2

Baseline GIS Distance Learning
Tutorials in FR and EN

Advanced GIS in 3 pilot countries, Armenia, Lebanon and Senegal:
- Adapted topic
- Adapted regional and national data
- Adapted on-line training

GIS-EWS lessons learned

Building a solid baseline GIS in epidemiology capacity in all MediLabSecure countries

MLS2 Baseline GS Course — Female / Male, at face-to-face workshop, Started DL course, Completed DL course
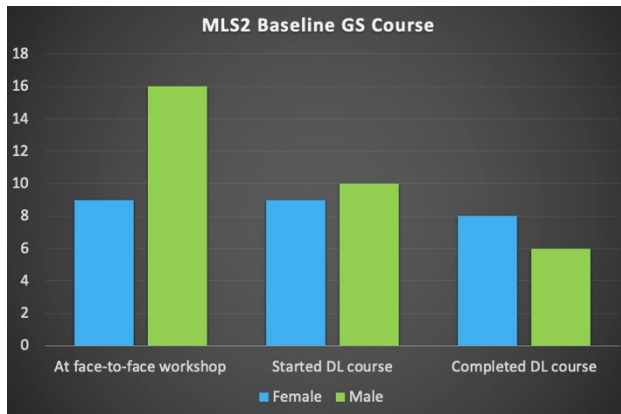
- 76% (19/25) participants continued with the e-distance learning (DL) training
- Of these, 74% (14/19) completed the DL
- Gender:
  - 89% (8/9) of the participating women completed the course
  - 60% (6/10) of the participating men completed the course
- All non-participants (6/25) are male and at a higher responsibility level: Director or Head of Department

MediLabSecure GIS status/country
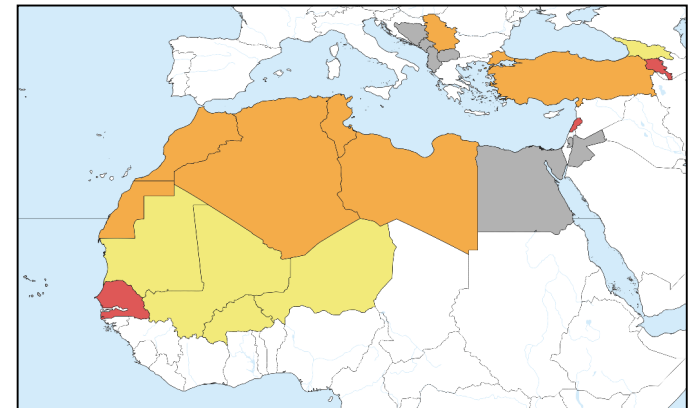
- 🟨 At least one participant completed the training
- 🟨 No participant completed the training
- 🟥 Pilot Countries
- ⬜ Not yet had the opportunity to participate

24

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THANK YOU!