Defining Ecoregions and Prototyping on EO-based Vector-borne Disease Surveillance System for North Africa PROVNA 1

- IZSAM – WOAH Collaborating Center for Epidemiology
- WOAH Office North Africa in Tunis

Regional Workshop on Rift Valley Fever surveillance in Northern African countries – PROVNA2
12-14 November 2024- Tunis, Tunisia

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Preliminary outcomes

Preliminary outcomes have been shared with the national competent authorities:

- **Surveillance activities** carried out by the countries have been discussed during two webinars.

- Bilateral meetings took place, two hours each, investigating and **discussing the ecoregions** of specific countries with their representatives.

- **WOAH workshop on PROVNA project and Foresight Lisbon, 2-3 July 2024**

The meeting was organised jointly with the regular meeting of the Joint Permanent Committee of REMESA.

Participants included:
- representatives from the six countries of PROVNA;
- IZS-Teramo team,
- University of Tennessee Knoxville subcontractors,
- WOAH staff (Paris and Tunis),
- Representatives from other REMESA countries
- Representatives from FAO.

Presentation of preliminary results of PROVNA & draft of the PROVNA 2 project.

SWOT Analysis

SWOT (strengths, weaknesses, opportunities, and threats) analysis is a framework used to evaluate "something".

SWOT analysis assesses internal and external factors, as well as current and future potential.

A SWOT analysis is designed to facilitate a realistic, fact-based, data-driven look at the strengths and weaknesses of an organization, initiatives, etc.

SWOT ANALYSIS

Helpful — to achieving the objective
Harmful — to achieving the objective

Internal origin (attributes of the organization): Strengths / Weaknesses
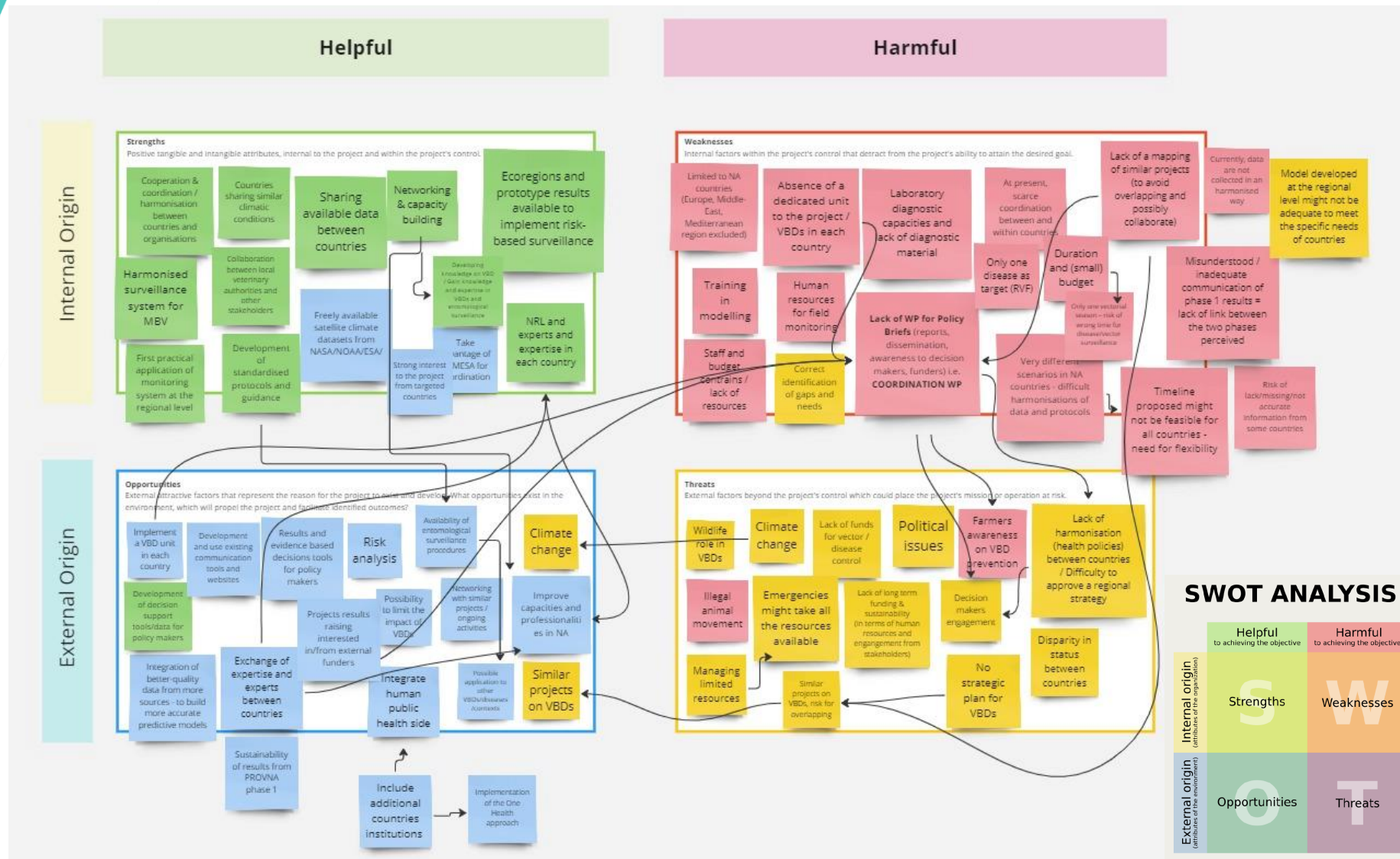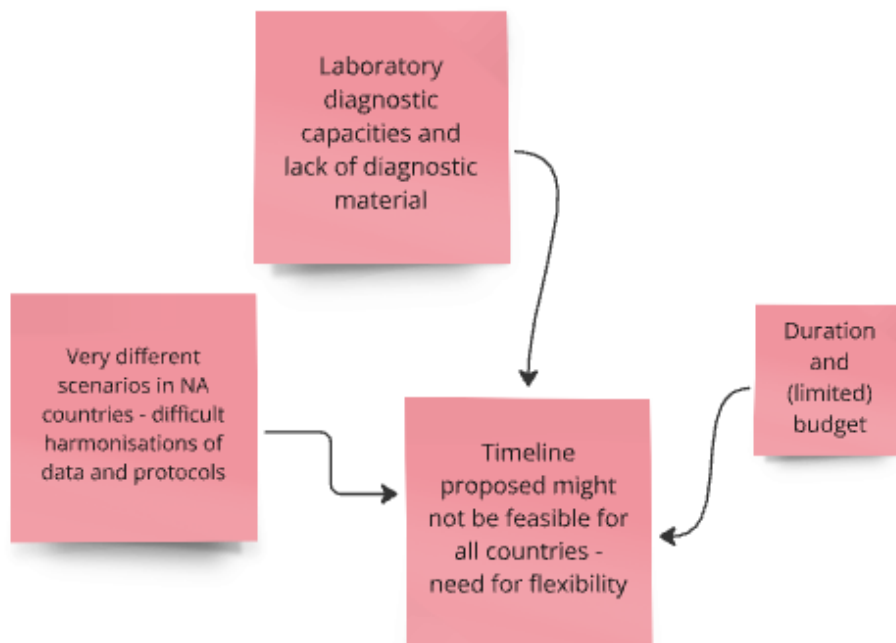External origin (attributes of the environment): Opportunities / Threats

S · W · O · T

- *NA only (vs REMESA Network)*
- *Only one priority disease*
- *Different status of the countries and very different scenarios at the time of the start of the project*
- *Duration and (limited) budget*
- *Lack of coordination*
- *Lack of a mapping of VBDs projects*

Wildlife role in VBDs

Illegal animal movement

Political issues

Similar projects on VBDs, risk for overlapping

Lack of long term funding & sustainability (in terms of human resources and engangement from stakeholders)

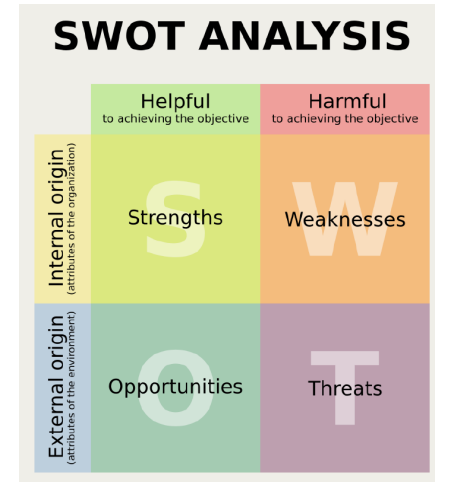Decision makers engagement

Threats

SWOT ANALYSIS

|	Helpful to achieving the objective	Harmful to achieving the objective
Internal origin (attributes of the organization)	Strengths	Weaknesses
External origin (attributes of the environment)	Opportunities	Threats

- *Sustainability – external funds*
- *Political issues*
- *Transparency*
- *Animal movement (illegal) – wildlife*
- *Political will and committment*
- *Risk of overlapping with similar initiatives*

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- *Collaboration – REMESA Network*
- *Capacity Building*
- *Decision-support tools*
- *Countries' engagement*
- *Existing expertise*
- *Standardised protocols*
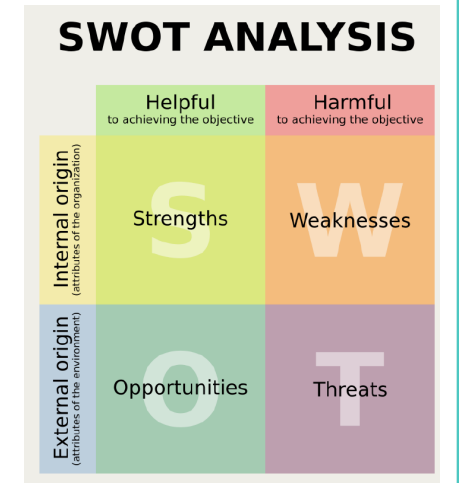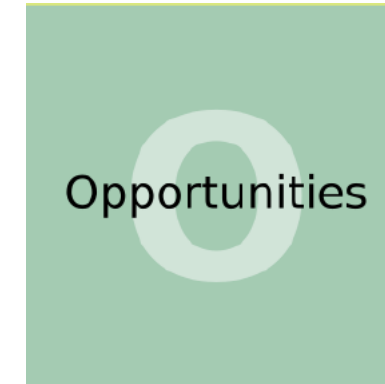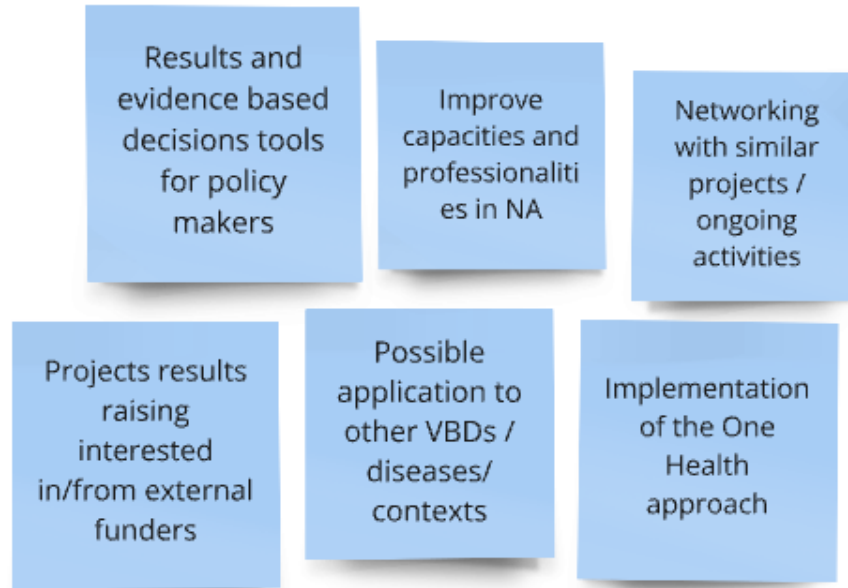
- *Interest*
- *Reference labs*
- *Evidence-based approach*
- *Networking – collaboration with other projects*
- *Ecoregions can be applied to different diseases*
- *Collaboration – REMESA*
- *OH approach*

Given the work done, it is now crucial to combine the decision-making tools based on eco-regionalization with data from in-field surveillance.

This step is essential to strengthen the capacity of the National Veterinary Authorities to effectively **prevent**, **predict**, **detect** and **respond** to diseases.

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APPENDIX 1

PROJECT PROPOSAL

Establishment of a risk-based surveillance system for Mosquito-Borne Diseases in North Africa (PROVNA2)

PROVNA phase 2

Project Partners

• WOAH SRRNA,

• National Veterinary Authorities and National Veterinary Institutes of **Algeria, Egypt, Libya, Mauritania, Morocco and Tunisia.**

Duration (months): 18 months

General Objective

To establish a **risk-based surveillance system** across the six North African countries, using the eco-regionalization method, **to monitor the emergence and spread of key animal and zoonotic diseases** transmitted by mosquitoes.

Specific Objectives (1/2)

• **To strengthen the capacity** of National Veterinary Authorities and National Veterinary Institutes in North Africa for monitoring mosquito-borne diseases.

• To develop **standardised protocols for the diagnosis and surveillance** at national level of **mosquito-borne diseases** in North African countries.

Specific Objectives (2/2)

• To promote the use of a **risk-based approach in the surveillance** of mosquito-borne diseases in North Africa.

• To provide the National Veterinary Authorities of North African countries with **decision-support tools** capable of integrating satellite data characterizing the various eco-regions with data collected through in-field surveillance activities.
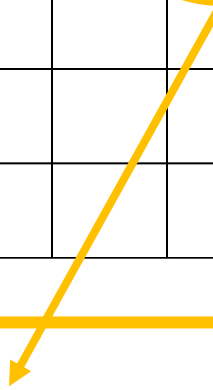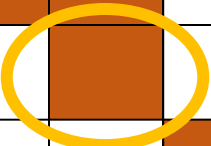
6 Working Packages

Project activities will be carried out by 6 work packages (WP):

- WP0 – Coordination, networking, dissemination

- WP1 – Gap analysis and needs assessment

- WP2 – Definition of surveillance protocols

- WP3 – Capacity building activities

- WP4 – In-field monitoring

- WP5 – Modelling

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PROVNA phase 2

Work Packages	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18
0 – Coordination, networking, dissemination	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1 – Gap analysis and need assessment	■	■	■	■	■													
2 – Definition of surveillance protocols					■													
3 – Capacity building activities						■	■	■	■	■	■	■						
4 – In-field monitoring											■	■	■	■	■	■	■	
5 – Modelling																■	■	■

Workshop in Tunis

Flexible timeline according to countries needs and scenarios

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WP0: Coordination, networking, dissemination (M1–M18)

Objectives:
- To ensure effective **communication** and **coordination** among project partners.
- To produce comprehensive **reports** and disseminate project results.
- To **network** with similar projects and engage with decision-makers.

Description:
Throughout the project, a smooth and efficient communication and coordination among the participating countries, project partners and stakeholders will be ensured with the support of the funders, to discuss progress, address challenges, and plan activities.

Periodic progress reports will be prepared, detailing project activities, achievements, and any issues encountered. This includes interim and final reports as required by the funders. At the same time, WP0 will engage in dissemination activities of project's results within a broad audience, including the scientific community and the stakeholders.

With the support of the funders, networking activities, to establish connections with other similar projects to foster collaborations, and engagement with key decision-makers, to discuss findings, and align with policy and funding priorities, will be performed.

Deliverables:
- Interim and final report.

Following the discussion and the «weaknesses» highlighted in Lisbon

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WP1: Gap analysis and needs assessment (M1–M4)

Objectives:

- To **assess the gaps and the needs of North African countries** concerning the surveillance of mosquito-borne diseases (MBDs).

Description:

Documents and the available information from the "phase 1" of the PROVNA project will be analysed to identify gaps and needs concerning the surveillance capacities for MBDs. A summary document outlining these findings will be then produced. The contents of the document will be jointly discussed with the National Veterinary authorities and representatives of the National Veterinary Institutes during the workshop foreseen in WP2 and specific activities will be planned to address the identified gaps.

Deliverables:

- **A document describing the results of the gaps and needs assessments.**

Builds on the information already gathered during PROVNA 1 (bilateral meetings, Lisbon, …) and continues during the first phases of PROVNA 2 (and Tunis workshop)

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WP2: Definition of surveillance protocols (M5)

Objectives:
- To **define standardized protocols** for the diagnosis and surveillance of MBDs in North African countries.
- To **define a risk-based monitoring plan for RVF** in North African countries.

Description:

A workshop will be organised with the National Veterinary Authorities and representatives of the National Veterinary Institutes of North African countries to define standardised protocols for the entomological surveillance and diagnostics of MBDs in animals. In addition, a detailed monitoring plan for RVF will be prepared, based on the eco-region identification and other risk factors jointly identified for each country. The plan will include the minimum set of data to be collected during the surveillance activities and how this information will be used to validate and refine the eco-regionalization process. During the workshop, the document on gaps and needs produced in WP1 will be discussed and further actions agreed upon, with particular reference to those concerning the improvement of surveillance and diagnostic capacities in the countries. Then, a capacity-building programme will be jointly defined.

Deliverables:
- Protocols for entomological surveillance and diagnostics of MBDs in animals.
- Action plan of the surveillance activities to be carried-out in the field.
- Capacity-building programme.

With a workshop to define standardised protocols for the entomological surveillance and diagnostics + detailed monitoring plan

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WP3: Capacity building activities (M6–M12)

Objectives:
- To **strengthen the laboratory capacities** for entomological surveillance and diagnostics of MBDs in animals.

Description:
Specific training sessions will be organised to strengthen the skills of selected personnel from national veterinary institutes in conducting entomological and diagnostic surveillance of the main MBDs in animals. Based on the results of the gap analysis performed in WP1 and the discussions held during the workshop in WP2, traps and other necessary diagnostic materials will be supplied to the countries.

Deliverables:
- Training sessions and other capacity-building initiatives done.
- Diagnostic material supplied.

With specific training sessions to selected personnel + diagnostic material supply

WP4: In-field monitoring (M11–M17)

Objectives:
- To perform in-field monitoring of RVF

Description:
The implementation of entomological and diagnostic monitoring activities in selected at-risk areas will progress as planned in the WP2. Further actions related to epidemiological enquiries and investigations will be undertaken in case of RVF outbreaks. The diagnostic activities will focus on the detection of infection in the main target hosts. In positive samples, further characterization of the virus or viral genome will be performed. As for entomological monitoring activities, data collection will focus on gathering information on vectors' species, distribution and abundance.

Deliverables:
- National reports of monitoring activities done and data collected.

Activities in the field in specific at risk areas (see WP2), focusing on:
- Detection of the infection in main target hosts (+ characterization in case of positive samples)
- Data collection on vectors' species, distribution, and abundance

WP5: Modelling (M16–M18)

Objectives:
- To develop country-specific RVF risk models.

Description:
The data collected will be used to improve the eco-regionalization process, refining the decision-making tool provided to the countries. Risk models for the occurrence of RVF will be developed for each country, based on the analysis of eco-regions and surveillance data gathered in WP4.

Deliverables:
- Country-specific RVF risk models developed.

Data collected will be used to refine the decision-making tool + development of risk models for RVF for each country

Thank you

Questions?

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