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GOARN
Global Outbreak Alert and Response Network

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The role of mobile labs to environmental crises: example from the international deployment in Mayotte

2026/04/13 SESSION 1

Context overview

- Significant damage/devastation affecting vulnerable populations



credit: WHO



credit: DGS



credit: DGS



credit: DGS



320 900

AFFECTED POPULATION



100 000

DISPLACED



830

INJURED



35

DEATHS

Context overview

- Significant damage/devastation to infrastructure

Before

After



- o **Housing** destroyed or severely damaged
- o **Hospital** partially destroyed but **functional**
- o **Roads** and terrestrial transportation heavily affected
- o **Airports/ports** and related facilities damaged
- o **Electricity suffering** of widespread power outages
- o Breakdowns in **telecommunications**

Context overview

- Significant damage/devastation to infrastructure
 - Damage to **water supply** systems

Water testing laboratory inoperable

Limited access to **safe water**

- Increase risk of infection due to circumstances
 - Risk of **waterborne diseases** (e.g. typhoid, cholera, rotavirus gastroenteritis)
 - Risk of hospital saturation in case of **significant increase** in water-borne disease cases
 - Risk of **arbovirus epidemics** (current chikungunya outbreak in La Réunion and flooding)

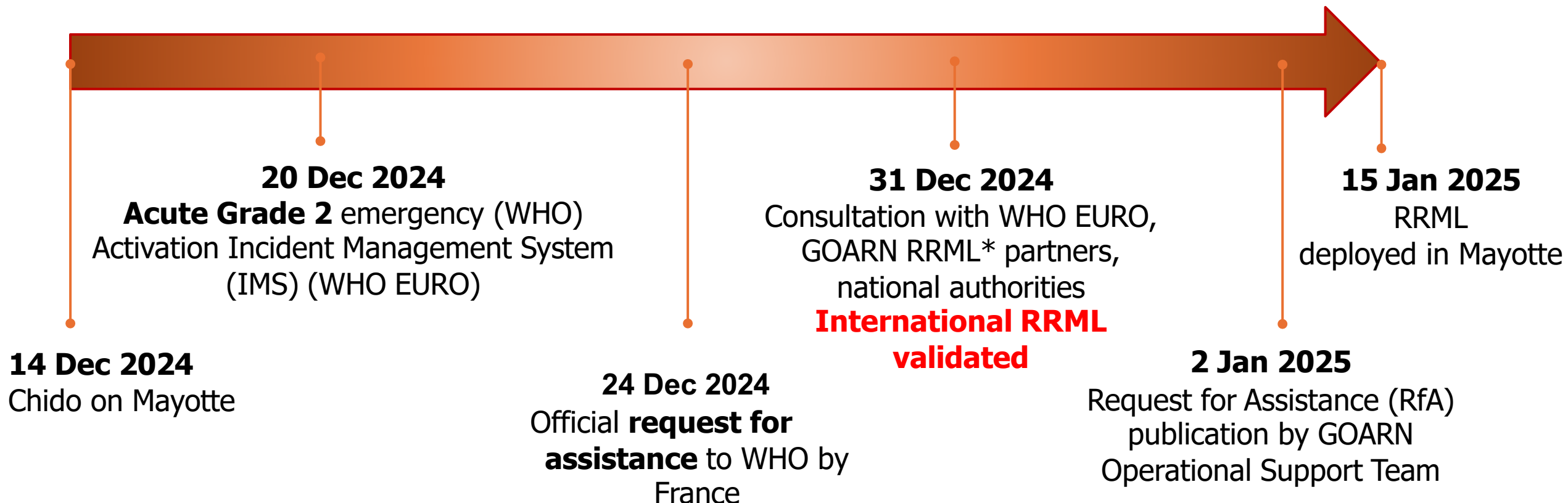


Crédit: Hassadi Razafitseheno / FranceInfo



Credit: Gendarmerie nationale / AFP

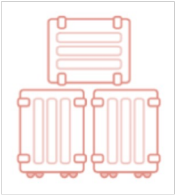
Activating assistance – Complete timeline



*RRML: Rapid Response Mobile Laboratory

Composition of the team

Multi-national RRML (Type 2)



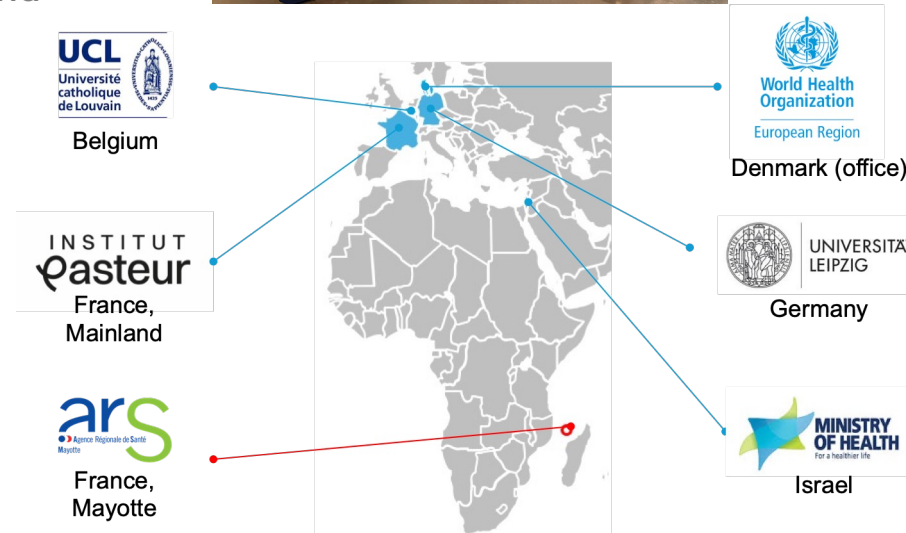
- **France:** Institut Pasteur
- **Germany:** University Leipzig
- **Belgium:** B-Life/UCLouvain
- **Israel:** MOH



Phase 1 (10 days): address priority needs and conduct need assessment for phase 2

Phase 2 (35 days): address needs as per assessment agreed with local authorities

- RRML is Self-sustainable throughout the 6-week mission
- 2 staff rotations
- Frequent consumable resupply



Initial priorities needs

1. Water-quality testing
2. Environmental surveillance for waterborne diseases
3. Waterborne disease testing (human)
4. Arthropod-borne disease testing (if needed)

Mobile Lab setting up



Glove box (BSL2)

- Inactivation
- Extraction step1

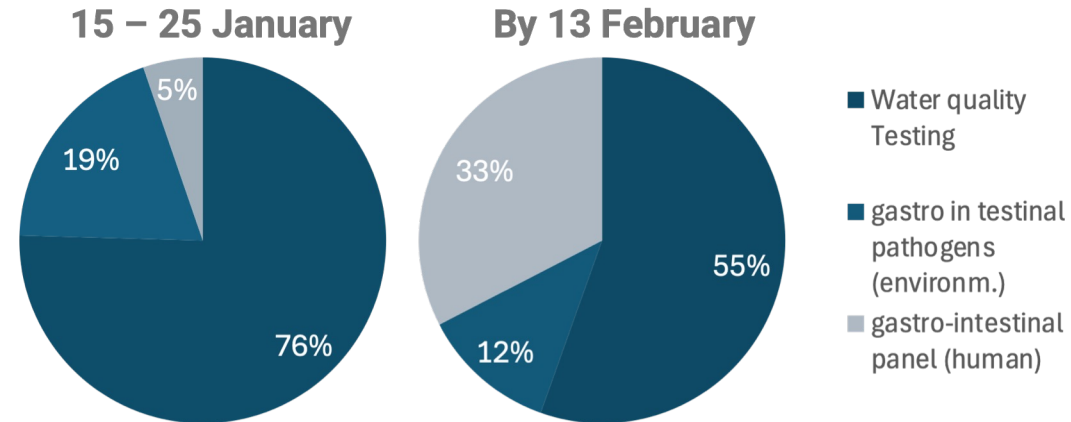
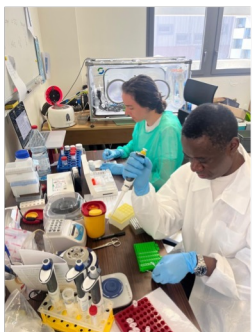


Mix preparation
« clean » glove box



BSL1 for extraction step 2
and qPCR devices

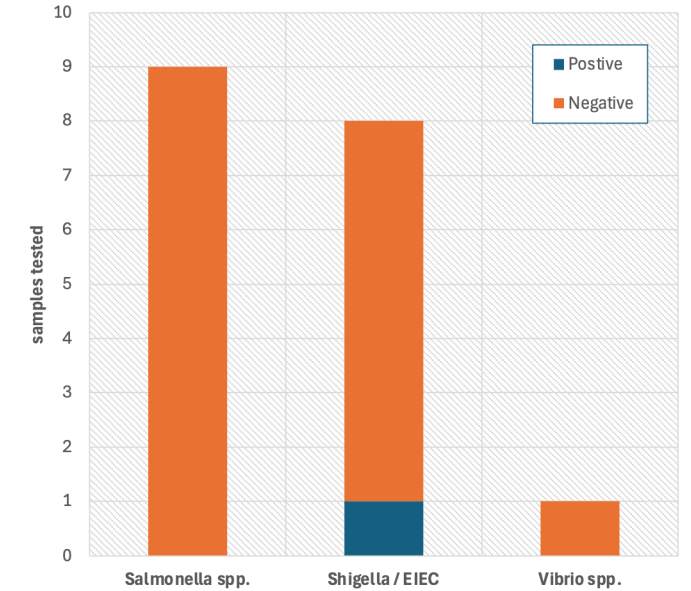
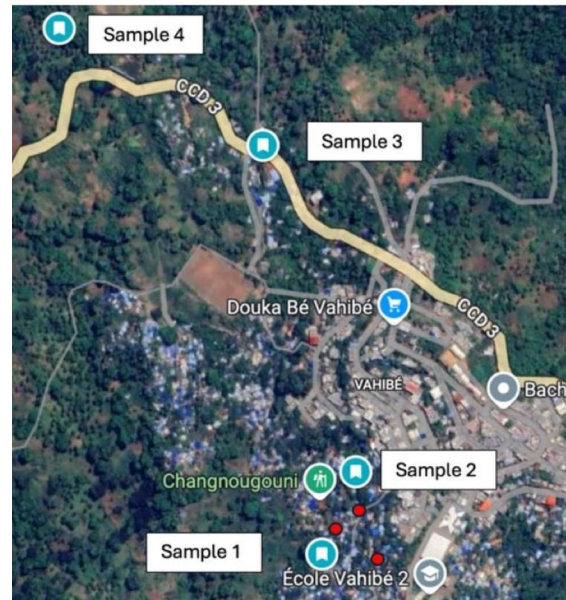
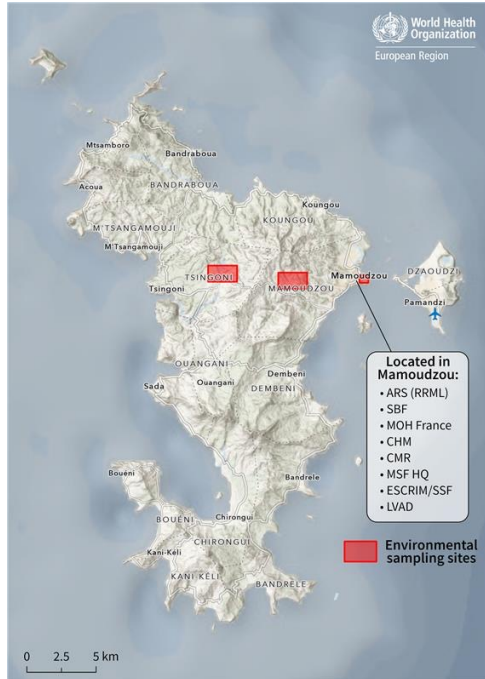
Activities - 1. Water-quality testing



Supporting Water-quality testing

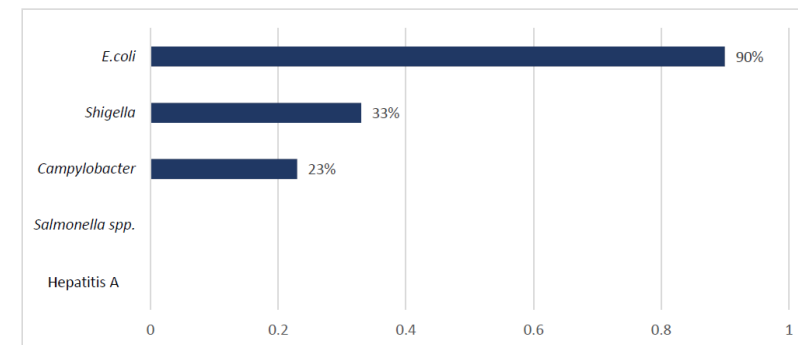
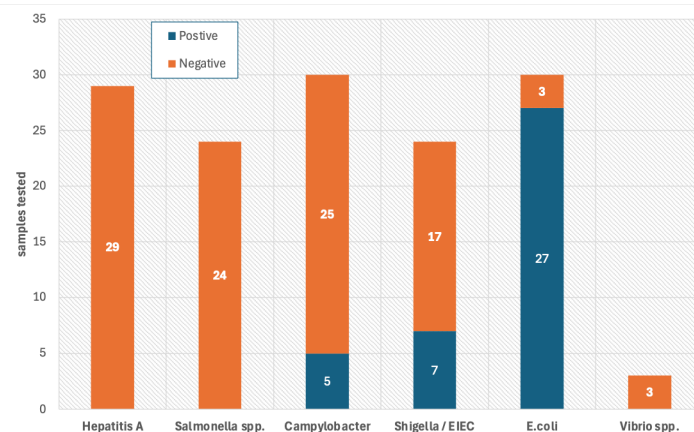
- **Provision of routine water testing of the local distribution network** to compensate the damaged local water testing laboratory

Activities – 2. Environmental surveillance



- **Environmental sampling and testing for waterborne diseases** as part of outbreak investigation (e.g. current *S. typhi* outbreak) and monitoring

Activities – 3. Waterborne disease testing in human

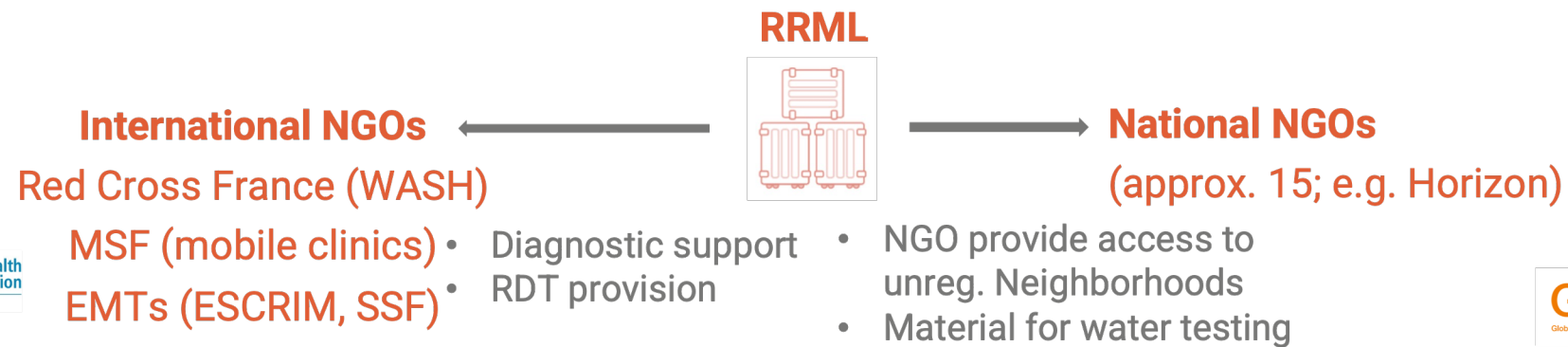


Supporting clinical diagnostics

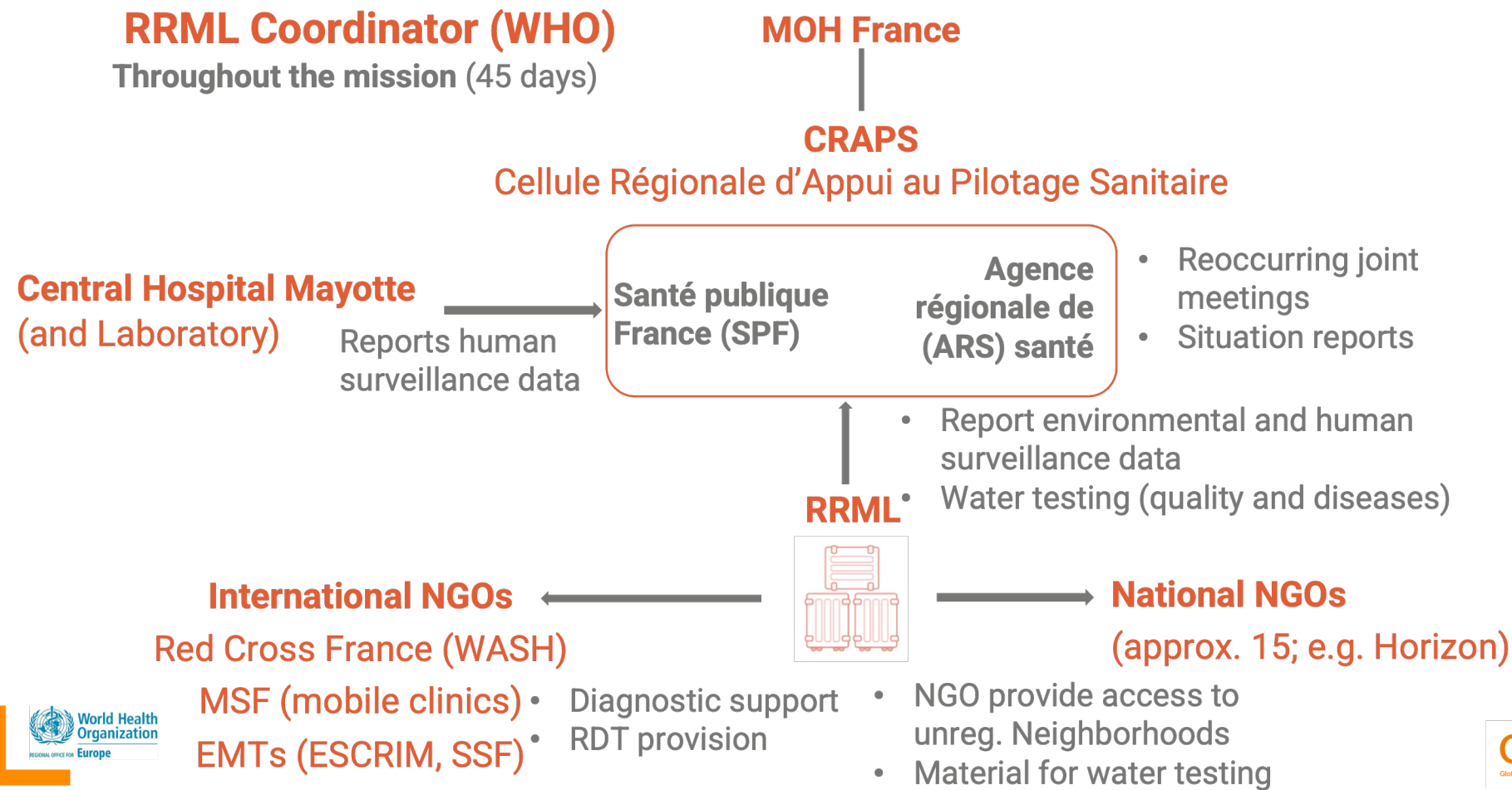
- **Provision of clinical diagnostics to 2 EMTS** (ESCRIM and SSF) seeing 100-150 patients daily.
- **Support efficiency of outpatient diagnostics** by providing results within 3h (hospital min 24 h)



Coordination



Coordination



End of mission – Lessons learned



- Broad spectrum of analysis requested (beyond traditional requests)
- Team constitution in the limiting timeframe period
- Provide rapid, complex technical assistance on site
- Fast-moving situation
- Inedit situation for RRML

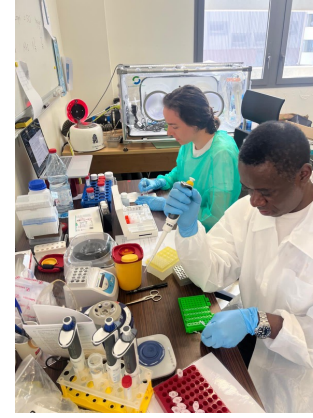


End of mission – Lessons learned

RRML life cycle phase	Recommendations
Mission Assignment	- Involve national reference and public health laboratories early to ensure all national requirements for diagnostic tests are met. - Implement frequent coordination meetings to align needs with available capacities. - Prioritise multinational RRML deployments where diverse technical capacities are required or long-term deployments are planned.
Mission Specification	- Establish a pool of pre-trained experts from the GOARN DiSC community of practice. - Prioritise check-in transport for RRML equipment and consumables to avoid bottlenecks, maximise cost-effectiveness, and simplify customs clearance. - Assign an OSL expert from WHO or RRML partners to support transport and customs clearance. - Develop standardised mission-specification checklists based on RRML/MOST.
Mission Execution	- Conduct needs assessments at the start of a two-phase deployment. - Balance short- and long term deployments to maintain coordination, ensure flexibility and enable timely resupply - Formally deploy a WHO coordinator for all RRML emergency responses - Integrate capacity-building measures into deployment planning to ensure sustainable support
End of Mission	Predefine an exit strategy during mission assignment with clear parameters for mission closure - Develop a standardised handover and equipment donation protocol based on RRML/MOST



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Coralie Giese
Sertac Tas
Walid Mokni



Partners of EMT
ESCRIM & SSF



Members of RRML
network



Members of SPF

Acknowledgments