



Patrick Benichou, President

23/09/2025

MFI's experience in **DBO** business model. Application to EW4All and SOFF projects

HMEI-SOFF Session for SOFF implementing Entities and peer advisors





SUMMARY

1. The power of **Design Build Operate** business model
2. Application to   and  initiative



1. The power of **Design Build Operate** business model

- MFI leader in **integrated modernization** projects since 2002
- Record Nb of major projects (>20M€) in **emerging countries**
- **~400M€** sales to Governments → safeguard public investment

Timely – Effective - Sustainable

- *the key to Socio-Economic Benefits*



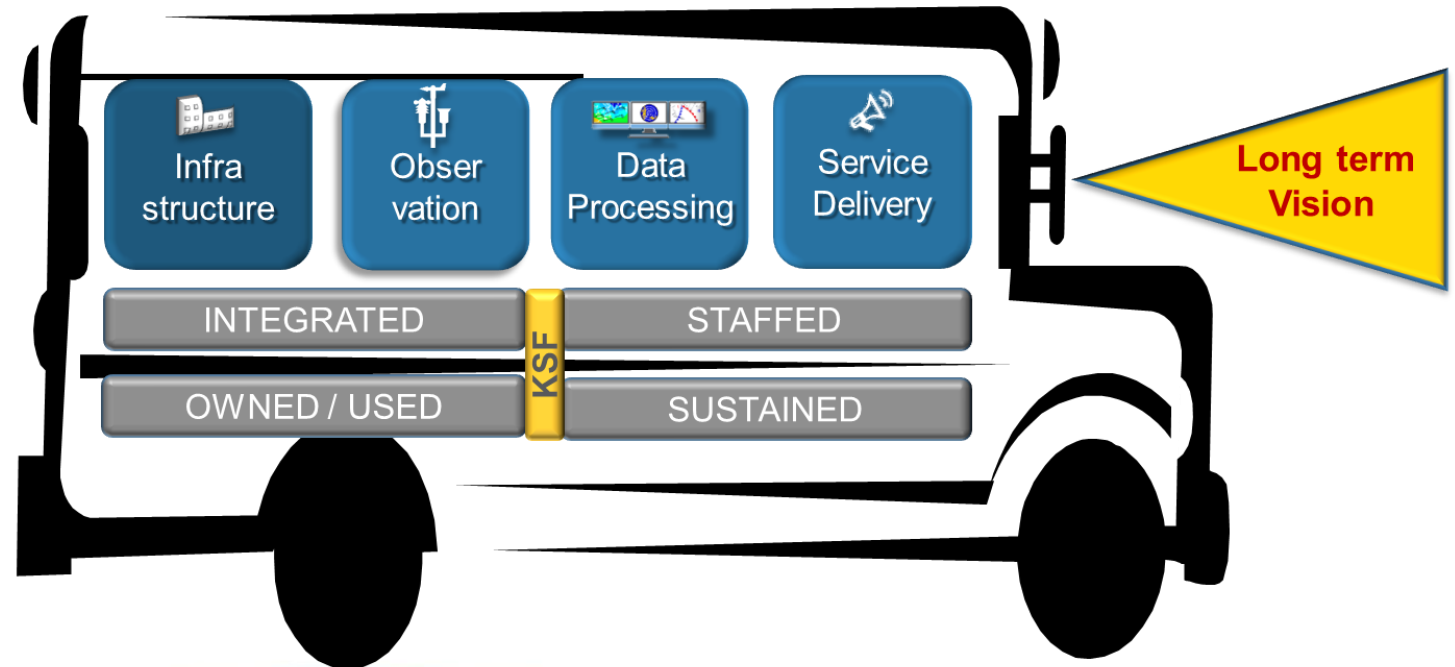
+ **"the MFI touch"** = ...

- *Build sustainable & effective public capacity through fully integrated projects*
- *Digital transformation across the full value chain*

Full National Value Chain
implementation

+

KSF (Key Success Factors)



MFI leader of **DBO** integrated projects across the value chain

- **Angola (2019-2023, 60M€)**
 - **DBO** Modernization project across the Value chain
 - €€ by **Export Credit Société Générale**

Angola (60M€, 2019-2022, Infrastructure)



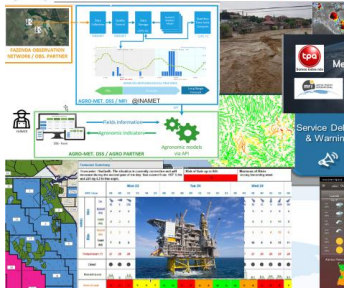
Angola (60M€, 2019-2022, Observation)



Projet Angola (60M€, 2019-2022, IT)



Angola (60M€, 2019-2022, PWS-EWS)



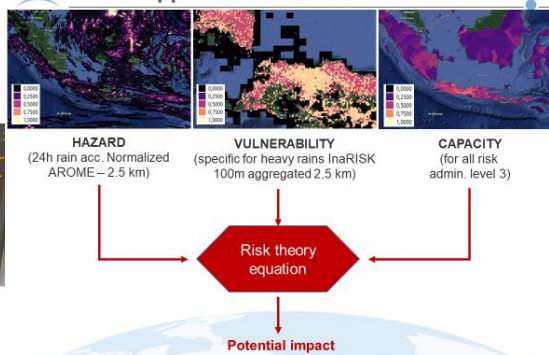
- **Indonesia (2020-2024, 32M€)**
 - 2nd **DBO** project focusing on Impact Based Warning & services
 - €€ by **French Treasury** soft loan

Indonesia STR2 (24+8M€, 2020-2025)

- « Repeat order » after STR1 (30M€, 2012-2016)
- Scaling up and upgrade of successful concepts
 - Digital Forecast & collaborative work
 - PWS
 - Services to Aviation
- Implement innovative concepts
 - E.g. Impact Based Forecast
- Extend concept / architecture to Marine met. & Oceanography
- Train MSc students in France



IBFWS application over Indonesia



IBFWS application – potential impact



- **Cote d'Ivoire (2023-2026, 27M€)**
 - **DBO** Modernization project across the Value chain (+ revenue sharing)
 - €€ by **AFD** (first **DBO** project ever)



PRESENTATION DU PROJET VIGICLIMM
Modernisation de la Direction de la Météorologie Nationale de la SODEXAM



Aperçu du projet VIGICLIMM...



La SODEXAM, Pôle d'excellence en Afrique de l'Ouest



Toulouse, 23 Sept. 2022 – Signature d'un accord SODEXAM / MFI
Rayonnement de la SODEXAM sur les pays alentours pour la mise en œuvre de projets à l'international comme le W4ALL (Alertes pour tous)

PPE-DBO strong points in brief

TIMELY, EFFECTIVE & SUSTAINABLE implementation of the value chain

- Single PoC, based on trust & partnership, flexible end-to-end approach, involves Government, steering mechanism, ensures socio-economic benefits
- → Meets a growing expectation from Member States
- Safeguards public investment

Design
(6-9
months)

Build
(2-3 years)

Operate
(2-5 years)



● Follows

- **Global Weather Enterprise Forum** brainstorming on PPP business models (2018-2019)
- **WMO's Geneva Declaration** (2019) in favor of PPE

● MFI's DBO approach in the WMO **Good National Practices for PPE** (July 2020)

- <https://wmo.int/files/meteo-france-international-mfi-modernizing-nmhss-through-public-private-partnerships>



PUBLIC-PRIVATE ENGAGEMENT

Compendium of Good National Practices for Public-Private Engagement

Meteo France International (MFI): Modernizing NMHSs through public-private partnerships

Patrick Bénichou
Meteo France International

How to best implement the Meteorological Value Chain at the national level, how to best use the public monies, in the most effective and sustainable ways are challenges of this decade for a lot of National Meteorological and Hydrological Services (NMHSs), and no NMHS can embrace the whole value chain with the same level of energy. Public-Private Engagement would address those challenges; within which the DBO (Design Build Operate) approach could bring a lot of incentives to NMHS in the field of system integration, change management, sustainability. It is also fully compliant with the spirit of the Geneva Declaration - 2019 endorsed during the 18th World Meteorological Congress.

PPE-DBO approach also brings proven Key Success Factors that Meteo France International (MFI) already experienced and introduced in the past 10-15 years in various contexts like in Indonesia, Cambodia, Angola, India:

- | | |
|---|---|
| • Strong strategic partnership with NMHS | • Setting up the new NMHS workflow |
| • Shared managerial vision | • Support to Change management |
| • Design & Build approach | • Operational procedures |
| • Flexible Design all along implementation | • Capacity Building & twinning with leading NMHS |
| • Co-steering the project with flexibility | • Transfer of knowledge to NMHS and local private sector for long term sustainability |
| • Integrated approach to implementing value chain | |

PPE-DBO strong points in brief

for effective & sustainable modernization of NMHSs

- Single PoC, based on trust & partnership, flexible end-to-end approach, involves Government, steering mechanism, ensures socio-economic benefits
- → Meets a growing expectation from Member States



Build

- **Comprehensive:** Integrated, across the full value chain
- **Quick:** Typically, 3 years incl. change management
- **Owned** by NMHS: through twinning, consultancy, SOPs... and **trust!**
- **Effective & Measurable:** Through relevant KPI
- **Risk minimization:** transferred to the integrator



Design

- Full **commitment** of the designer
- **Co-design** → stronger **ownership**
- **Flexible:** design can be adjusted during the project life cycle



Operate

- **Sustainable:** NMHS not left alone after the project
- **Sustainable:** Transfer of knowledge to local private sector too
- **Sustainable:** Support to operations
- **Sustainable:** help seek yearly O&M budget after DBO project

● OBS Deliverables

● SYNOP	32
● AGRO-MESO	16
● AWOS (airports)	9
● Upper Air + H2	3
● Lightning	5
● Calibration	1

● Related IT deliverables

● UDCS	1
● Telecom	1
● Metadata managt	1

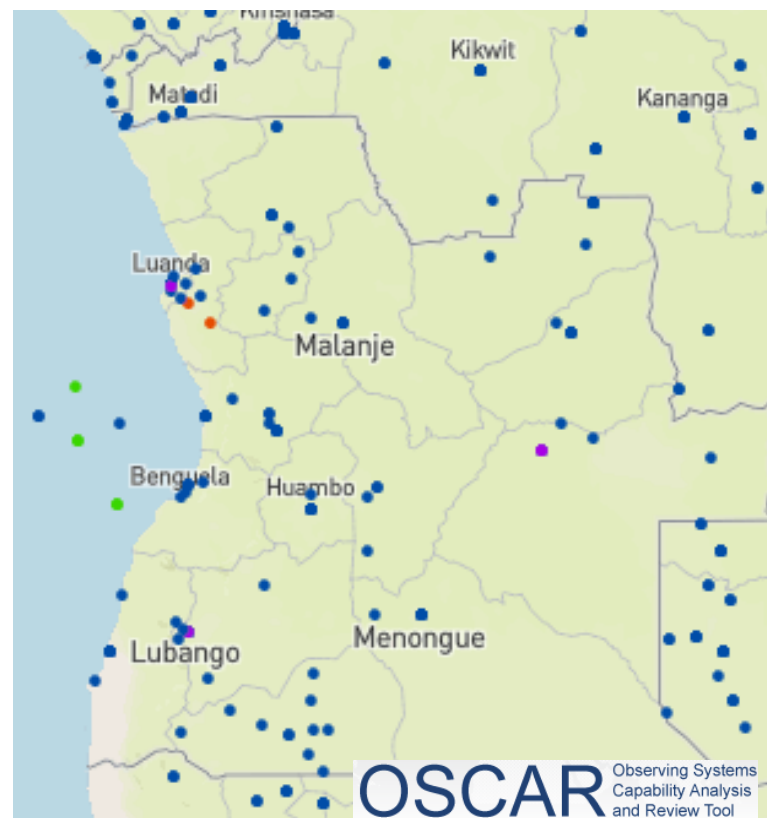
● Roles

- MFI
- Suppliers (few!)
- Local players

Main contractor & system integrator

Observation equipment, basic training, spare parts, level 2 support

Main Installation works, SATs, technical support



Good practices in NMHS modernization: the case of Angola

Dr. João Maria Afonso, DG, INAMET



WMO OMM
World Meteorological Organization
Organisation météorologique mondiale



RA-I Regional Conference
Addis-Abeba, Feb.14, 2023

Conclusion

Modernization is a long-term journey

- INAMET is lucky to have a validated PDE (Strategic Development Plan)
- INAMET appreciates the concept of **long term partnership** on a full integrated approach
- Change management is key and requires energy and leadership from the manager

Lessons learnt

• Power of the integrated approach

- Project would not be feasible c
- Many improvements brought t
- **Simple organization: one partner only** to monitor the implementation and ensure consistency between project's components across the value chain
- **Simplified administrative process** related to the procurement of equipment and services
- **Flexibility all along the project lifetime** (scope, schedule, training, etc): easy to make adjustments to adapt to local context or changes
- **Better integration of all components** all across the value chain, and ultimately a higher effectiveness of the investment
- **Continuous improvement** based on INAMET feed-back
- **Sustainability** thanks to assistance to operations on the integrated chain (Infra, Observation, IT, etc)

• Remaining challenges

- **Lack of qualified human resources** vs target organization to maximize value for Angola → joint work with Ministries to appoint new staff
- INAMET **switch to user orientation** not yet finalized (change management)

Lessons learnt

- **Power of the integrated approach (DBO)**
 - **Project would not be feasible otherwise**

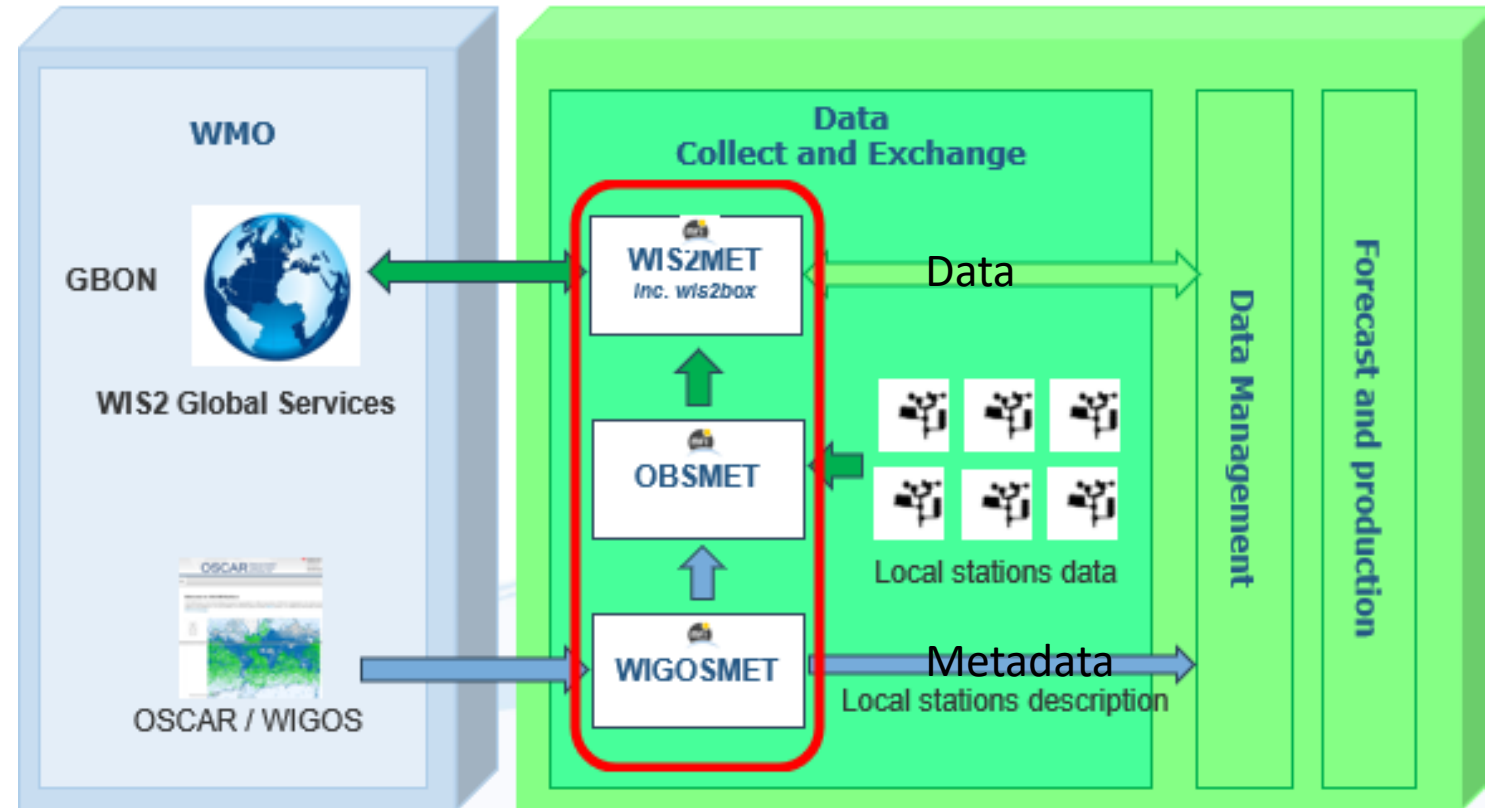


2. Application to **SOFF** projects?

- SOFF compliant architecture
- DBO approach?



- Observation equipment
 - AWS, etc
- Systems (minimum set)
 - WIS2MET : WIS2 Node management
 - OBSMET : Universal Obs Data Collection System & network monitoring
 - WIGOSMET : local WIGOS metadata repository and synchronizer
- Services
 - GTS integration trough AMSS (as long as needed) → WIS2
 - **Further Integration to NMS Information system** → EWS & PWS



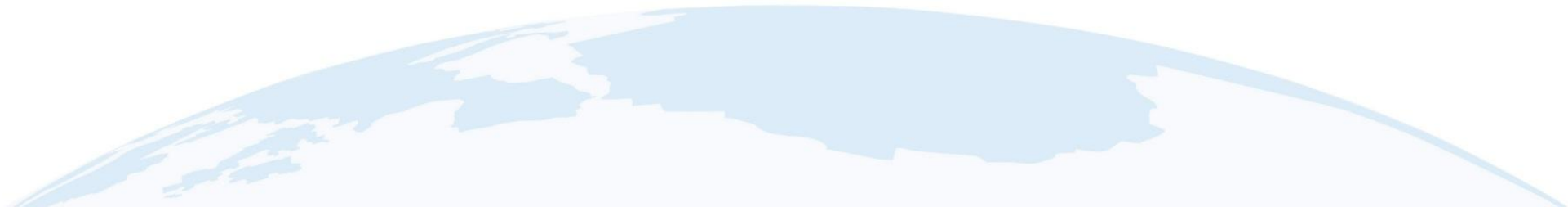
A fraction of the MET value chain

A **DBO** approach for SOFF?

- Scope covered by SOFF?
 - A **component** of MFI DBO projects, i.e. a contribution to the MET Value Chain
- DBO approach matches SOFF requirements
 - **Timeliness** through single project management and single PoC with the beneficiary
 - **Effectiveness** : implementation of the end-to-end process (AWS → IS → WIS)
 - **Sustainability** : multi-year support included, with help of a local partner (if needed)
 - **But...** no direct Socio Economic Benefits for the beneficiary country
- DBO could embark different players in a single approach
 - Observation equipment **supplier(s)**
 - Minimum Info System needed for compliance, and relevant for full MET Value chain
 - **Local partner** for assistance to observation network deployment / upgrade / support
+
 - **Peer advisor** too!? (for smoother coordination, twinning actions, and better complementarity)

- Successful project means
 - Good & robust **equipment**

Obs. Equipment



● Successful project means

- Good & robust **equipment**
- Proper **Integration** & minimum **IT systems** (WIS2, DCS, etc)
- Effective **deployment** (local partner)
- **Telecom** fees
- Technical **support** vs SLA (local partner, Calibration?)

● i.e.

- **Less** equipment, but
- **Well** deployed
- **Well** integrated
- **Well** maintained
- Fitted **procurement**

Obs. Equipment

IT &
integration

Site installation,
civil works, etc

Telecom
fees

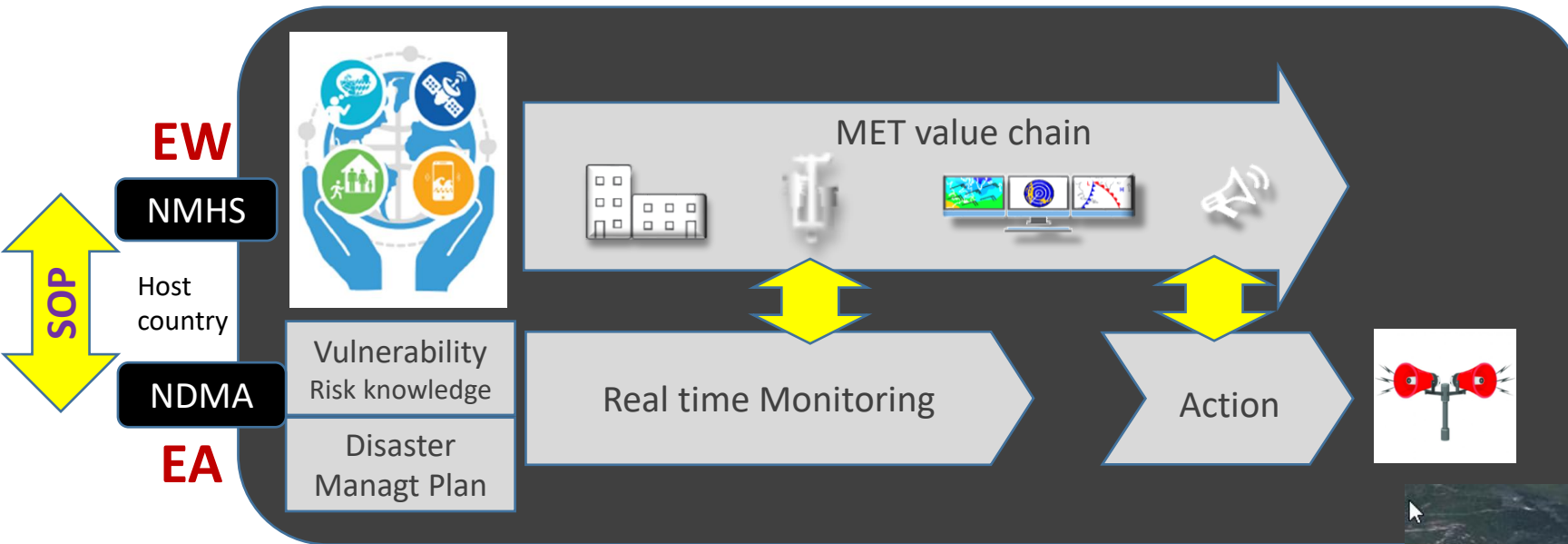
Long-term Technical support
vs SLA (+ consumables)



3. Application to **EW4All** initiative

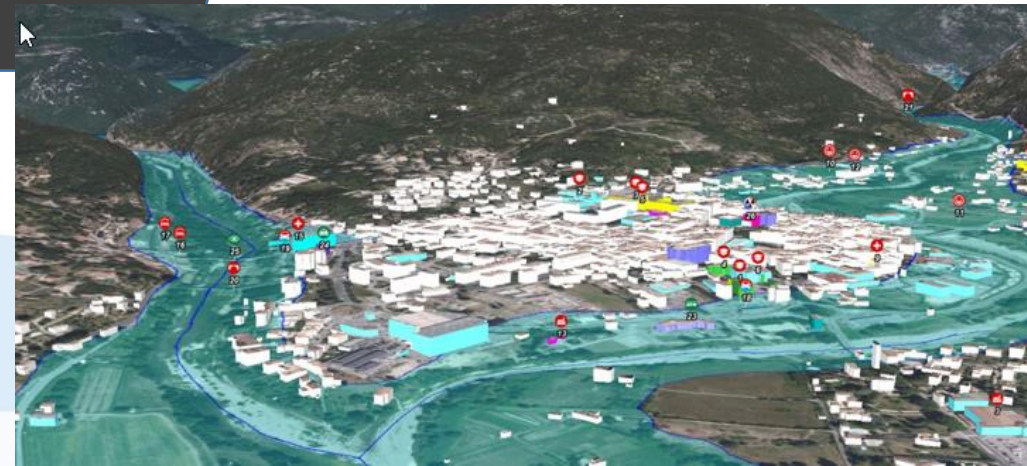
- The W4ALL approach vs EW/EA value cycle
- Fitted financing mechanisms

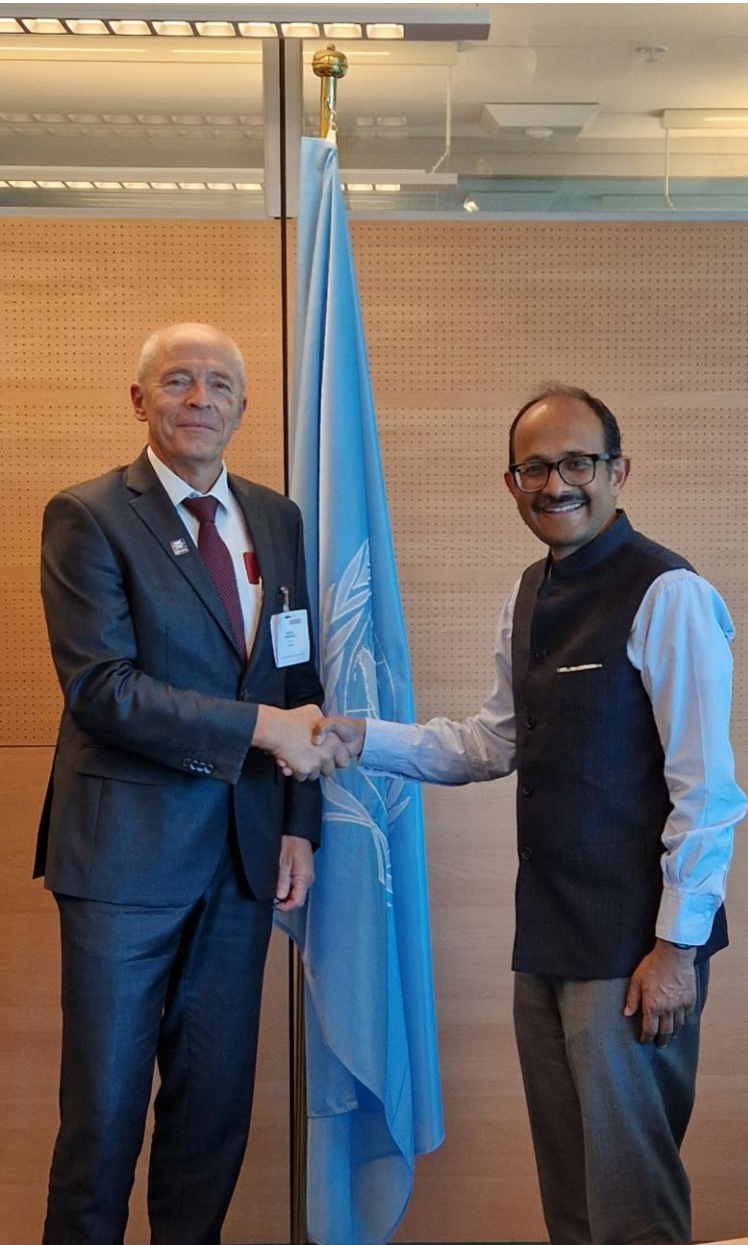
Early
Warnings
for All

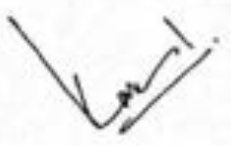


● Already under way

- Current projects : Cote d'Ivoire, Angola2
- Oncoming projects






Mr. Kamal Kishore
Special Representative
of the United Nations
Secretary-General for
Disaster Risk
Reduction,
and Head of the United
Nations Office for
Disaster Risk
Reduction (UNDRR)

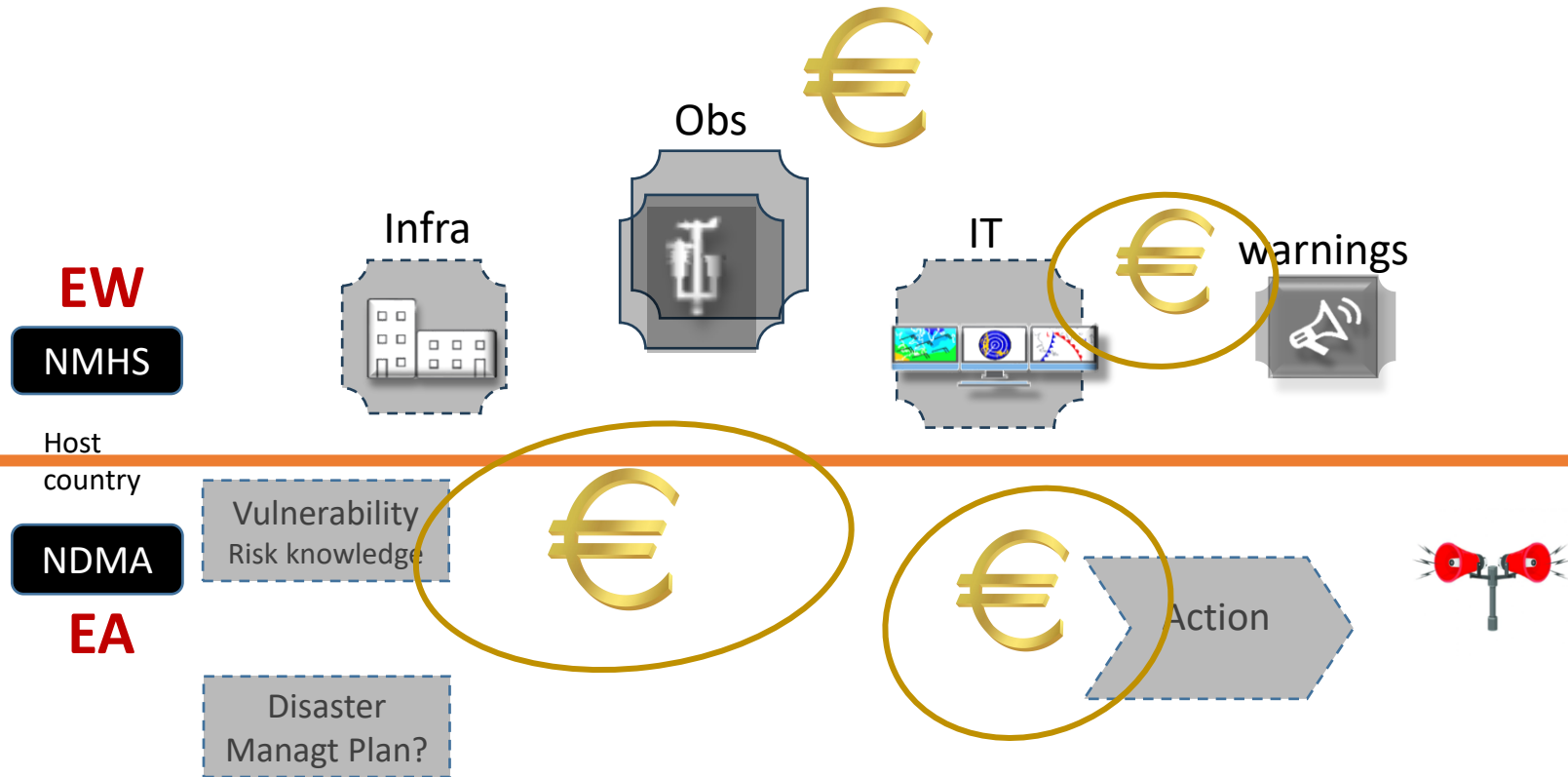

Prof. Celeste Saulo
Secretary-General of
the World
Meteorological
Organisation
(WMO)





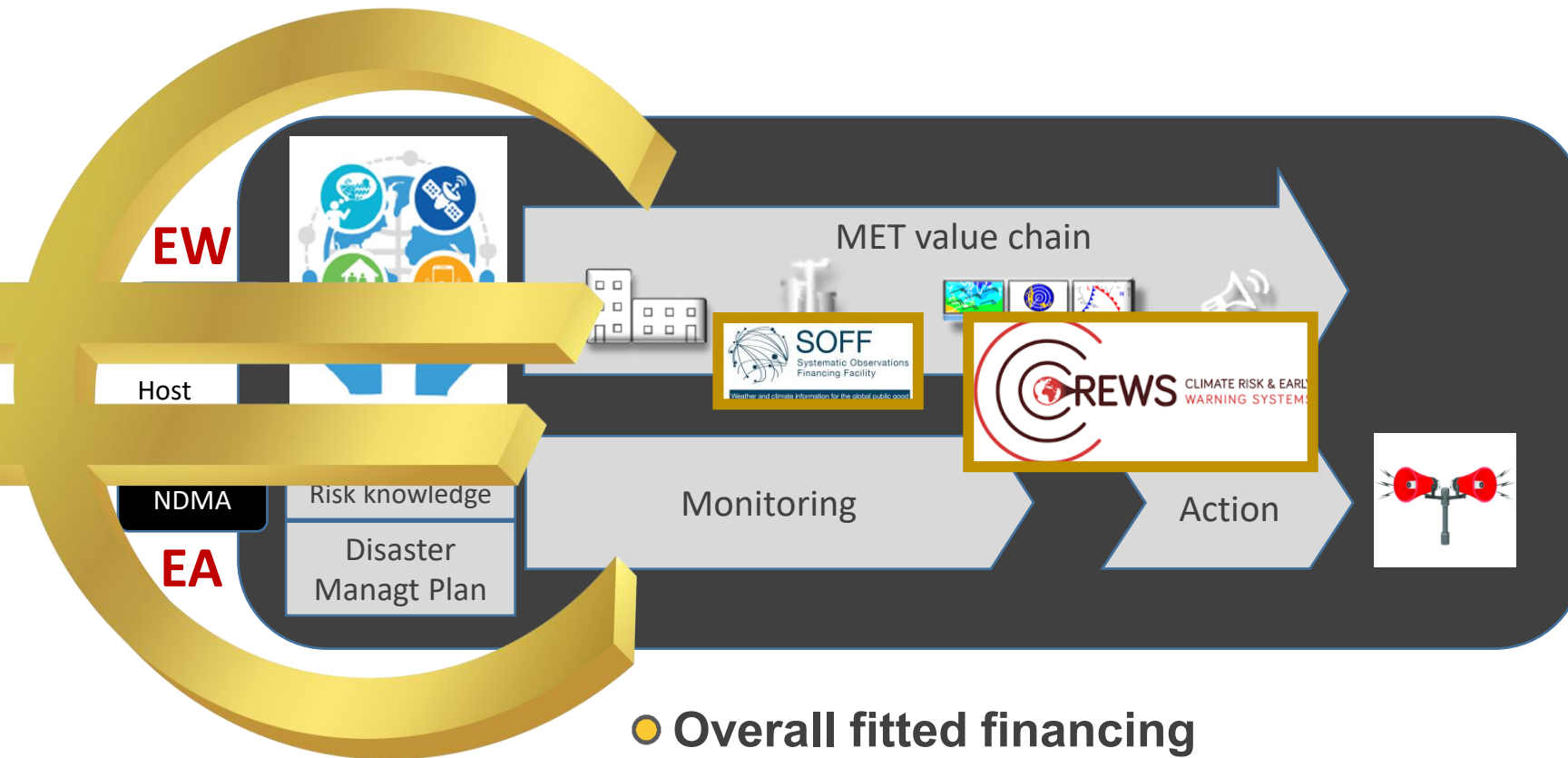
W4ALL – a donors' perspective

From scattered practices to focused integrated initiatives



W4ALL vs **financing** mechanisms

Towards less but bigger projects at national level



● SOFF-CREWS

- Capitalize on CREWS projects
- SOFF & CREWS projects to be interfaced / **integrated**
- SOFF & CREWS may be **contributors** to overall solution & financing

● Overall fitted financing

- Need a mechanism to accommodate the **full EW/EA value chain**
- Financing to **comply with PPE-DBO** business model
(cf WMO-Cg18 - Reso 3.2)



METEO FRANCE
INTERNATIONAL



Thank you very much



Meteo France International, *With you for Weather*

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