HIGH WAY

HIGH impact Weather lAke sYstem

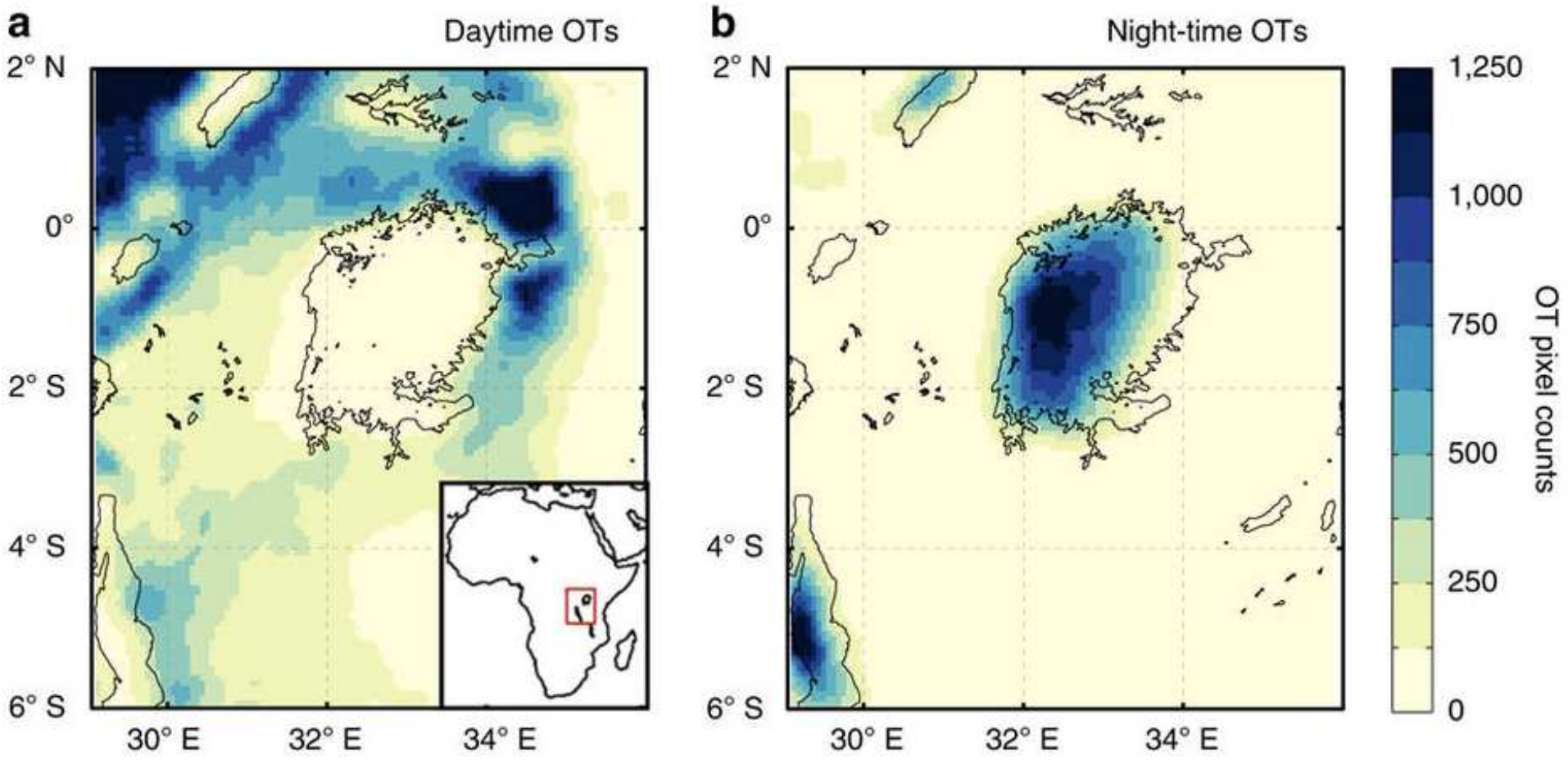
Paolo Ruti, Chief, World Weather Research Division
Estelle de Coning, Scientific Officer, WWRD
Jean Paul Gaudechoux and Jay Wilson (DRA - AMCOMET)

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

WMO OMM

World Meteorological Organization
Organisation météorologique mondiale

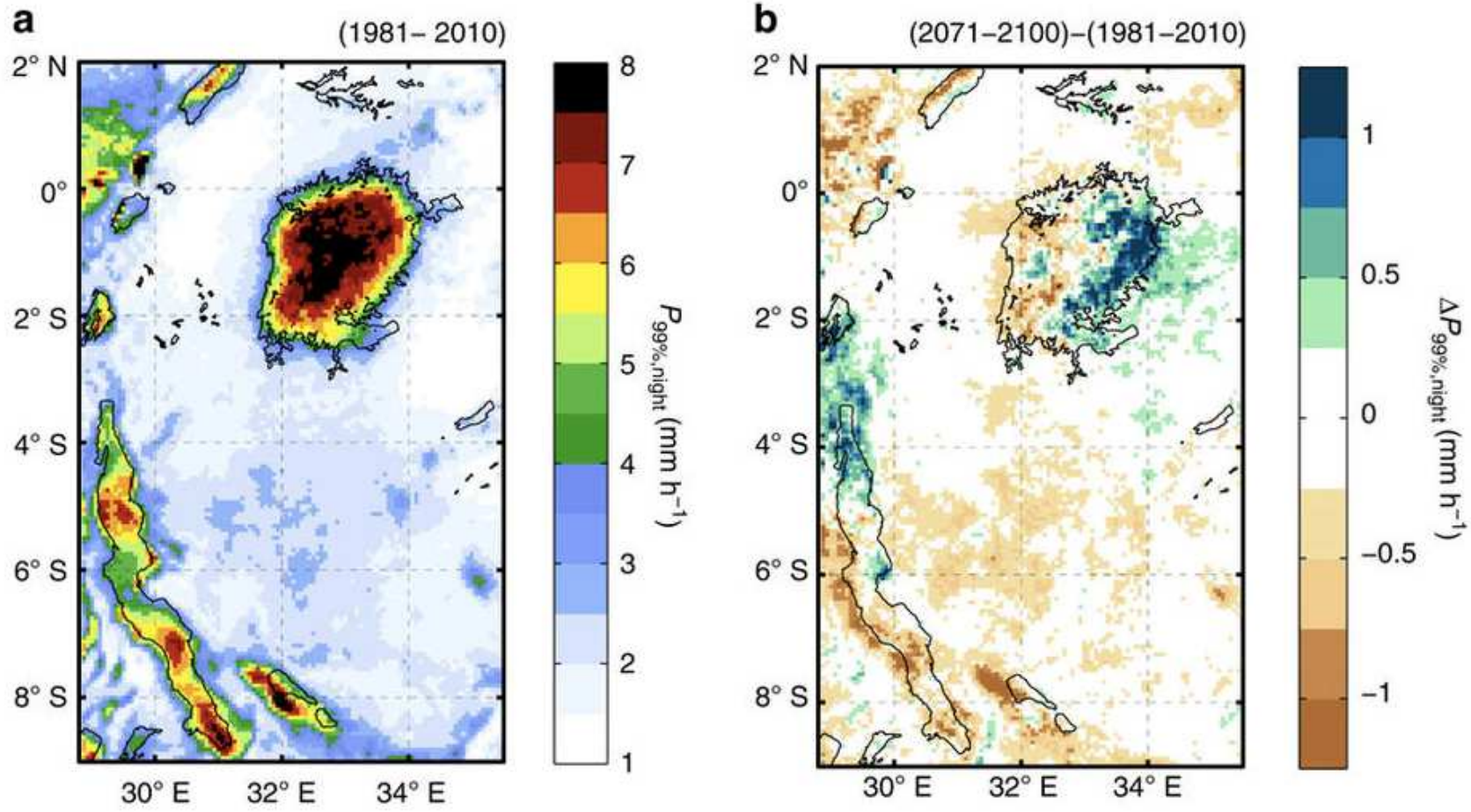
Lake Victoria Thunderstorms



Satellite-based overshooting tops (OT) detections during 2005–2013 over the Lake Victoria region (Thiery et al, Nature Communication 2016)

WMO OMM

Lake Victoria Climate Change



(**a**) Night-time 99th percentile precipitation and (**b**) its projected future change from the high-resolution COSMO-CLM model.(Thiery et al, Nature Communication 2016)

WMO OMM

Background

WMO OMM

Background to project

- Lake Victoria is Africa's largest and the world's second largest freshwater Lake 69,000 km^2 spanning Tanzania, Uganda, and Kenya and produces 700,000 to 800,000 metric tons of fish annually
- Approximately 30 million people live in its basin and it provides employment for three to four million people.
- 200,000 fishermen on the Lake.

WMO OMM

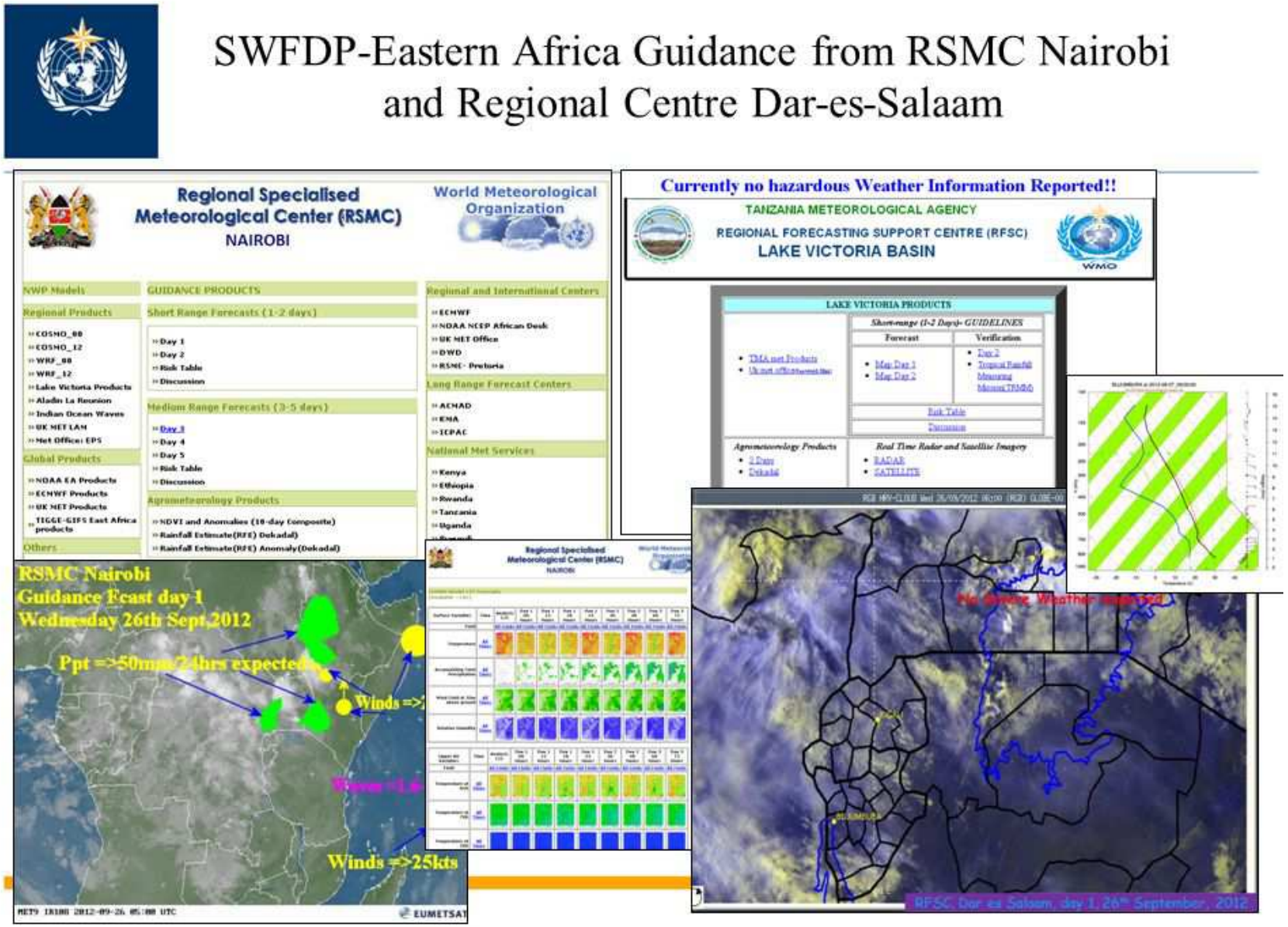
Motivation for Highway

- BUILDING on successful stories (Research Development Project and Severe Weather Forecasting Demonstration Project) and Mobile Weather Alert (2012)
- DEVELOP, validate and demonstrate High-Impact Weather prediction capabilities, toward building an integrated information systems to support decision making for different applications
- FOCUSING on areas where improvements will amplify downstream services.
- EXPLORE new observations and develop new numerical tools to move forward impact based forecast.

WMO background

- In 2010 WMO Executive Council (EC) recommended that a World Weather Research Programme (WWRP) project be considered for the Lake Victoria Watershed.
- In Q2 2016 ((Arusha), the 5 Met Services from the East African Partner States signed a resolution supporting the development of HighWay project
- In Q4 2016 (Entebbe), WMO provided EAC Partner States an updated on the WISER process and presented the expected outcomes of the Highway Project
- In Q3 2017, the Highway project proposal was approved by DFID and the project official launch took place during the AMCOMET Africa Hydromet Forum in Addis
- In Q4 2017 (Mwanza), a Project Preparatory Meeting took place with key project stakeholders who agreed to begin formlulating national specific activities in accordance with the expressed deliverables of the project

SWFDP for East Africa (including NMHS from Burundi, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda)



WMO contribution to HighWay

- **Severe Weather Forecast Demonstration Project,** providing a cascade of weather and warning information from Global to Regional to National
- **WMO Integrated Global Observing System,** ensuring the development of an efficient regional observational network and it global availability
- **Public Weather Service,** supporting the development of last mile communication
- **Regional Office,** liaise with regional office and political layer

WMO OMM

The Proposal

WMO OMM

DFID / WISER 2015

- The Weather and Climate Information SERvices for Africa (WISER) programme, funded by the Department for International Development (DFID) will provide funds to enhance the resilience of African people and economic development to weather and climate related shocks.
- The programme aims to improve the generation and use of the weather and climate information across Sub-Saharan Africa, with an initial focus on the Lake Victoria Basin region.
- **CALL: Strengthening of the Regional Meteorological Early Warning System in the Lake Victoria Basin**
- **Approved in July 2017**

WMO OMM

Outputs of the project

Output 1: Established, effective institutional framework for the generation, uptake and use of an Early Warning System for the East African Region
Output 2: Improved access to all operational data sources to support the generation and maintenance of Early Warning Services for the East African Region
Output 3: Strengthened integration between producers and users to develop innovative, accurate tailor-made EWS products through co-production for the East African region
Output 4 – Improved methods and strengthened capacity for communication and promoting understanding and use of EWS products with relevant producers, technicians, forecasters intermediaries and users in a in the East African region

WMO OMM

Highway: Impact

Increased use of weather information to improve resilience and reduce the loss of life and damage to property in the East African region

WMO OMM

What are we doing here?

WMO OMM

Planning & Implementing

- Next 12-18 months
- Detailing activities for the four outputs
- Identifying what, where, when, who?
- Engaging with other initiatives in the region
- Proposing recommendations to the high-level meeting

Output 1: Established, effective institutional framework for the generation, uptake and use of an Early Warning System for the East African Region

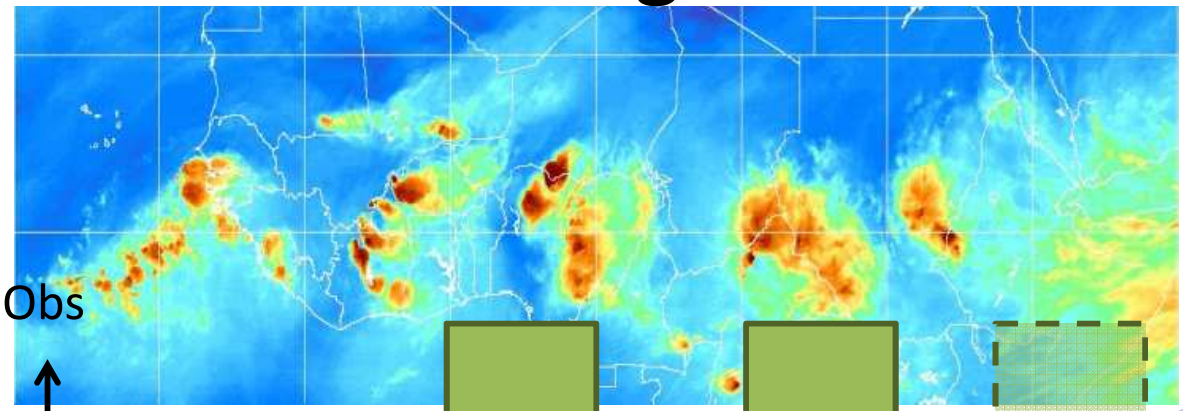
- Activity 1.1 Establishment of an integrated regional cooperation platform for EWS
- Activity 1.2 – Establishment of joint initiatives with relevant stakeholders (including producers and users) at national and regional level for EWS
- Activity 1.3 Establishment of a permanent institutional arrangement for the regional EWS

WMO OMM

Output 2: Improved access to all operational data sources to support the generation and maintenance of Early Warning Services for the East African Region

- Activity 2.1 – Modernization of infrastructure and basic systems to strengthen the EWS
- Activity 2.2 – Operational processing and visualization of all data sources and products
- Activity 2.3 – Mini field campaign to exploit and improve all existing data sources and products

Mini field campaign to exploit and improve all existing data sources and products



Obs

EOP

EOP

EOP

Special Observation Period

SOP

LOP

Long Observation period
Includes investment in obs networks rather than temporary equipment

now

> 10 yrs

Number of pilot phases or 'Extra Observation periods'. Tests equipment, small deployment/ quick start, builds logistical relationships

Time

WISER PRINCIPLE → A learning programme

WMO OMM

Output 3: Strengthened integration between producers and users to develop innovative, accurate tailor-made EWS products through co-production for the East African region

- Activity 3.1 – Innovative EWS tools co-produced for marine safety based on existing system in Tanzania to strengthen EWS on the Lake (Sub-project 1)
- Activity 3.2 – Number of new/improved co-produced EWS products validated and Standard Operating Procedures and Common Alert Protocol (CAP) developed
- Activity 3.3 – Sharing of knowledge to build research output capacity
- Activity 3.4 – Sharing of knowledge to enhance local post graduate capacity

WMO OMM

Output 4 – Improved methods and strengthened capacity for communication and promoting understanding and use of EWS products with relevant producers, technicians, forecasters intermediaries and users in a in the East African region

- Activity 4.1 Effective communication of EWS to all possible users in languages and formats which are understood and can improve decision making (Sub project 2)
- Activity 4.2 Effective training to forecasters and technicians to use and maintain the new EWS tools to improve decision making and issue of warnings in a timely fashion
- Activity 4.3 Effective training and improved awareness of user communities to understand the new EWS tools to improve decision making

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

Thank you
Merci

WMO OMM

World Meteorological Organization
Organisation météorologique mondiale