



An International Workshop on Innovative and Sustainable Vector Control

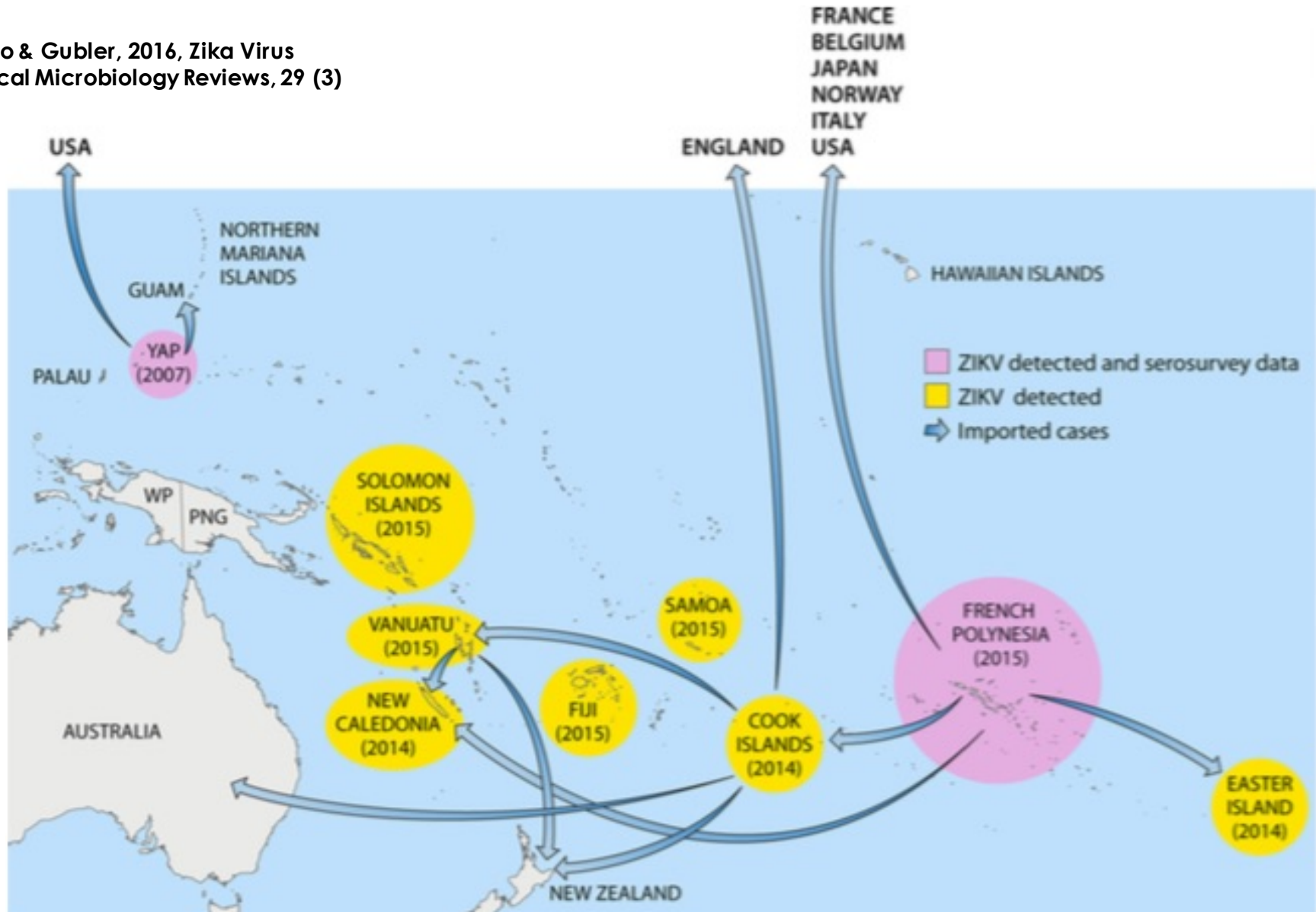
Moorea Ecostation Center for Advanced Studies, Moorea, Feb. 1-5 2016

Seed funding administered by LandCare Research



Why disease outbreaks in the Pacific matter for Europe and the world?

Musso & Gubler, 2016, Zika Virus
Clinical Microbiology Reviews, 29 (3)





Vectors of infectious diseases

Aedes aegypti

primary vector worldwide

Aedes polynesiensis

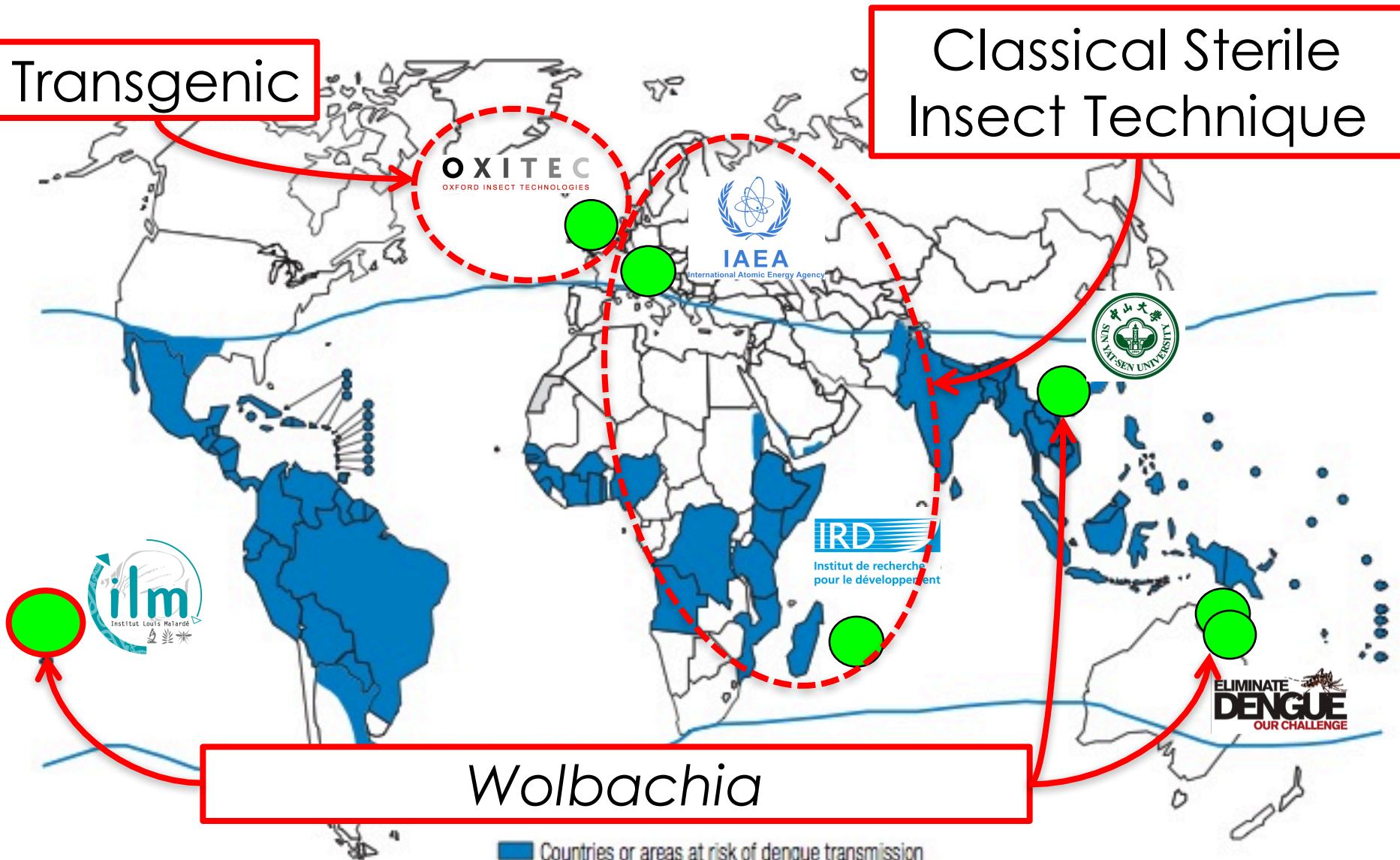
important vector in the Pacific



Recent breakthroughs in the control of *Aedes* mosquitoes

Transgenic

Classical Sterile Insect Technique



Wolbachia

■ Countries or areas at risk of dengue transmission

Pacific islands are ideally suited for novel vector control strategies

- Tractable environments
- Constrained mosquito vectors
- Excellent showcase for sustainable development



Pacific islands are ideally suited for novel vector control strategies

- Tractable environments
- Constrained mosquito vectors
- Excellent showcase for sustainable development

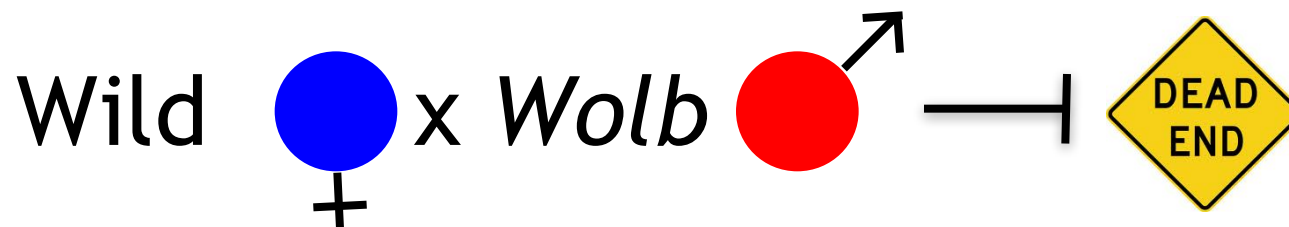
The use of novel technologies in the field requires

- Adaptation and validation to the local context
- Regulatory approval
- Community acceptance and participation



What it is:

- A novel strategy to control mosquito disease vectors
- Repeated, inundative releases of "incompatible" male mosquitoes
- Incompatible males contain *Wolbachia*, a symbiotic bacteria
- *Wolbachia* induces sterility in the mated female





Wolbachia as a biopesticide



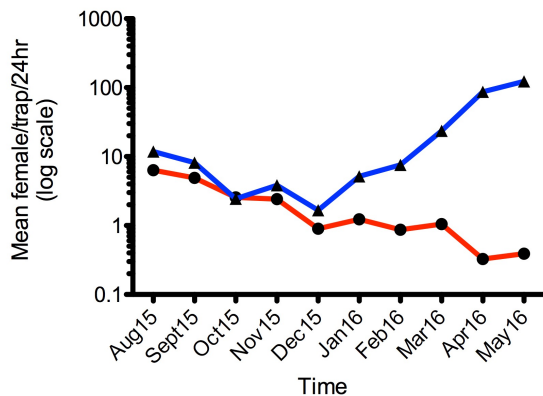
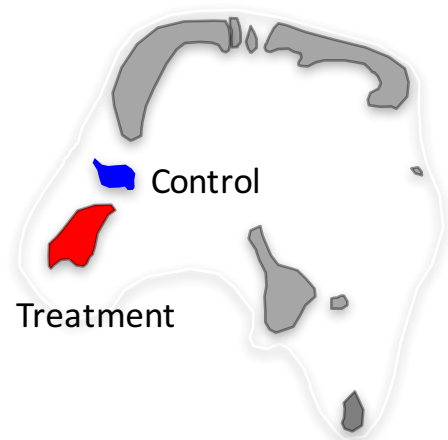
Wolbachia as a biopesticide





Tetiara pilot trial

- Significant reduction of the targeted mosquito population after only 4 months of intervention
- Release of incompatible male mosquitoes continues toward elimination





Workshop outcome

1. Transition *Wolbachia* technologies to scale through pilot deployment under operational conditions



Recommendations of WHO VCAG March, 2016

- Integrate *Wolbachia* transmission blocking and (where appropriate) *Wolbachia* suppression strategies
- *Innovation toward communitybased deployment and scale up*

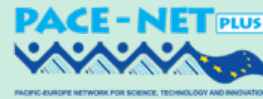
2. Leverage technical cooperation capacity to roll out control strategy in the region



Proposed pathway to strategy implementation



2014-2016



2017-...

Additional funds needed for:

- Larger (island scale) pilots
- Capacity building & technology transfer to the region



2009-2012

Phase 1

✓ Feasibility study

Phase 2

✓ Pilot study/Validating

Phase 3:

Transitioning to island scale

