



An International Workshop on Innovative and Sustainable Vector Control

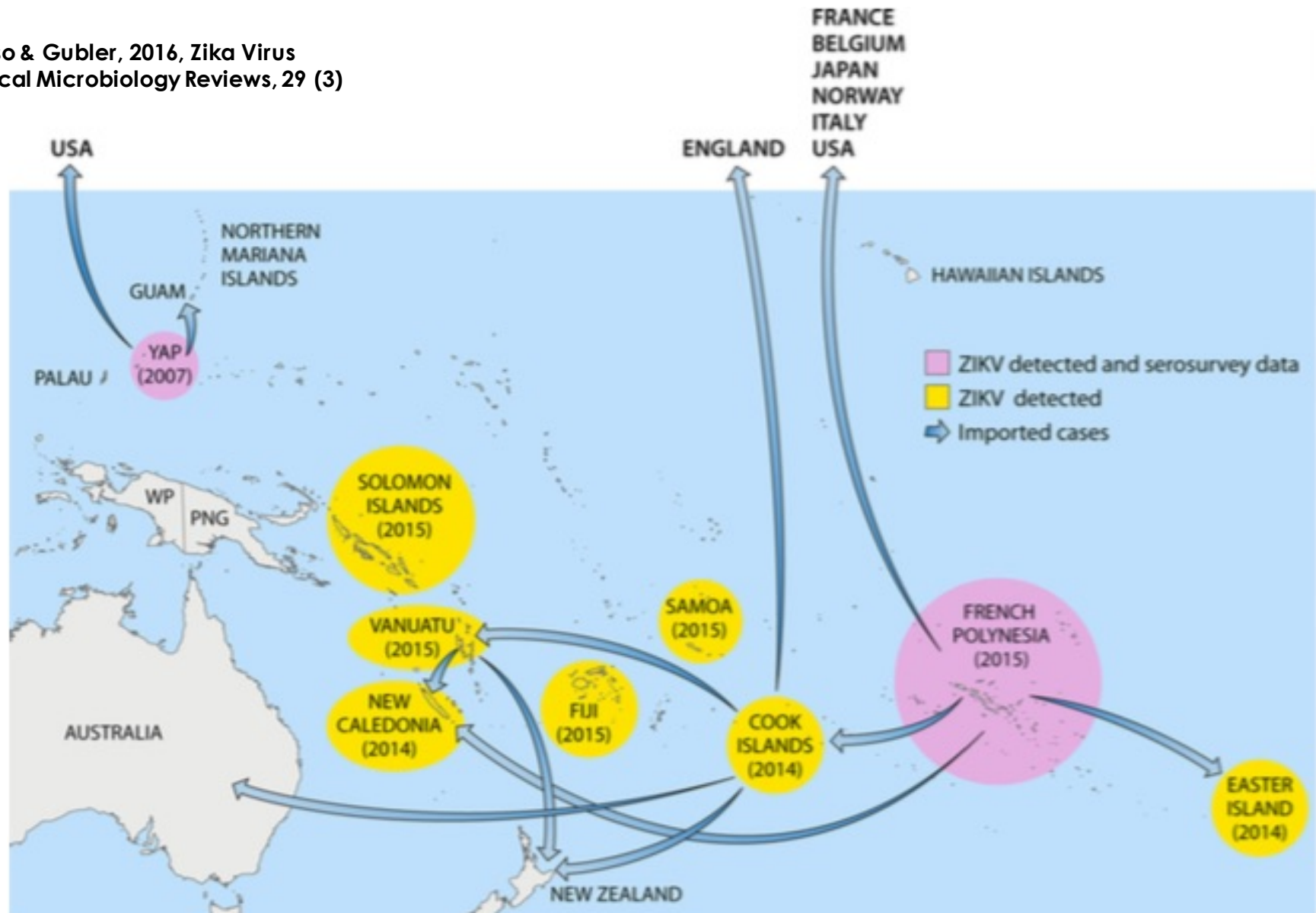
Moorea Ecostation Center for Advanced Studies, Moorea, Feb. 1-5 2016

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



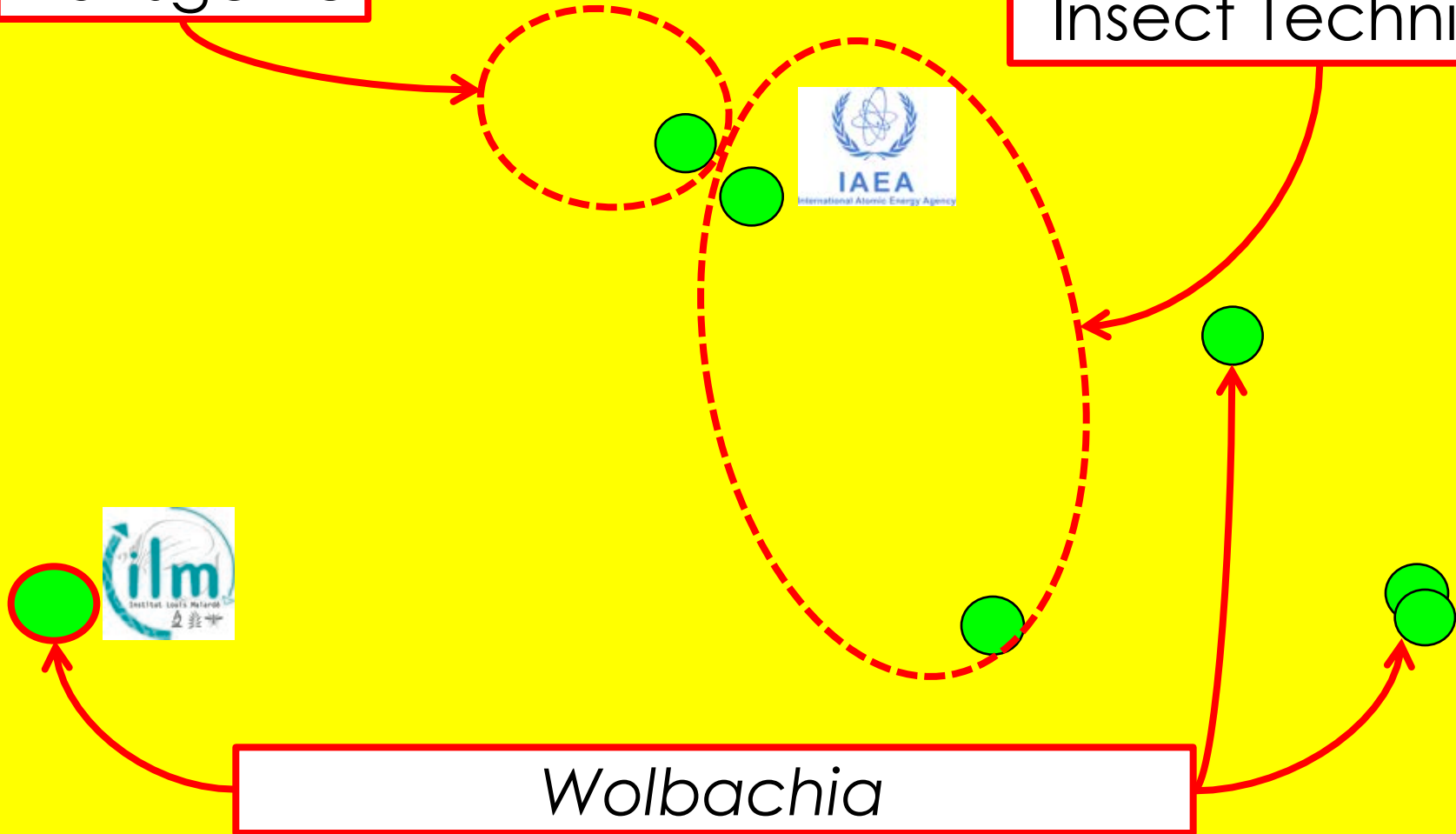
Recent breakthroughs in the control of *Aedes* mosquitoes

Transgenic

Classical Sterile Insect Technique



Wolbachia



Pacific islands are ideally suited for novel vector control strategies

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



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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



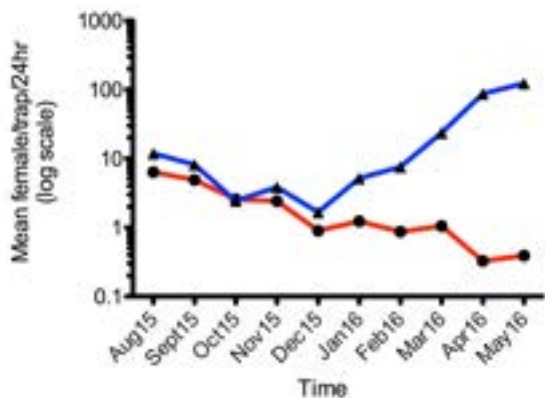
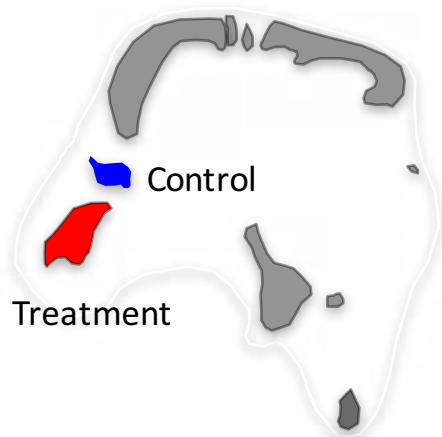
Wolbachia as a biopesticide





Tetiaroa 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



Pacific
Community
Communauté
du Pacifique



Proposed pathway to strategy implementation

Additional funds needed for:

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



2017-...



2014-2016



Phase 3:
Transitioning to island scale

Phase 2
✓ ☐ Pilot study/Validating



2009-2012

Phase 1
✓ ☐ Feasibility study

