

9th World One Health Congress · Lisbon, Portugal · 4 - 7 September 2026

Integrated One Health Mosquito Control through Targeted Stakeholder Engagement: The Experience of South Tyrol (Italy)

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BACKGROUND

- Invasive *Aedes albopictus* is expanding across Europe, raising the risk of arboviral diseases such as **dengue**, **chikungunya** and **Zika**.
- In the **Alpine region**, climate change and the mobility of people and goods are extending suitable habitats into valleys once considered at very low risk.
- Over the last decade, **South Tyrol** developed a structured mosquito-control programme grounded in a **One Health framework**, integrating environmental monitoring, medical and veterinary surveillance, and targeted stakeholder engagement in the official regional languages.

OBJECTIVES

- Promote a **province-wide mosquito monitoring** system.
- Implement **environmentally sustainable vector control**: larval source reduction first, cautious use of adulticides.
- Strengthen **integrated One Health governance**, health education and stakeholder engagement.

METHODS

The programme combines:

- Entomological monitoring** from April to October using ovitraps and BG-Sentinel traps in affected and high-risk areas.
- Larval source reduction and larval control**, mainly with biological larvicides such as *Bacillus thuringiensis israelensis* Bti. Routine adulticidal treatments are avoided and reserved for public health emergencies.
- One Health governance**, linking environmental authorities, medical and veterinary public health services, laboratories, and municipalities.
- Targeted stakeholder engagement**, with tailored prevention messages for municipalities, property managers, plant nurseries, tyre retailers, emergency physicians, general practitioners and the general population.

Multilingual awareness campaigns and an annual arboviruses bulletin support prevention, clinical awareness and intersectoral coordination.

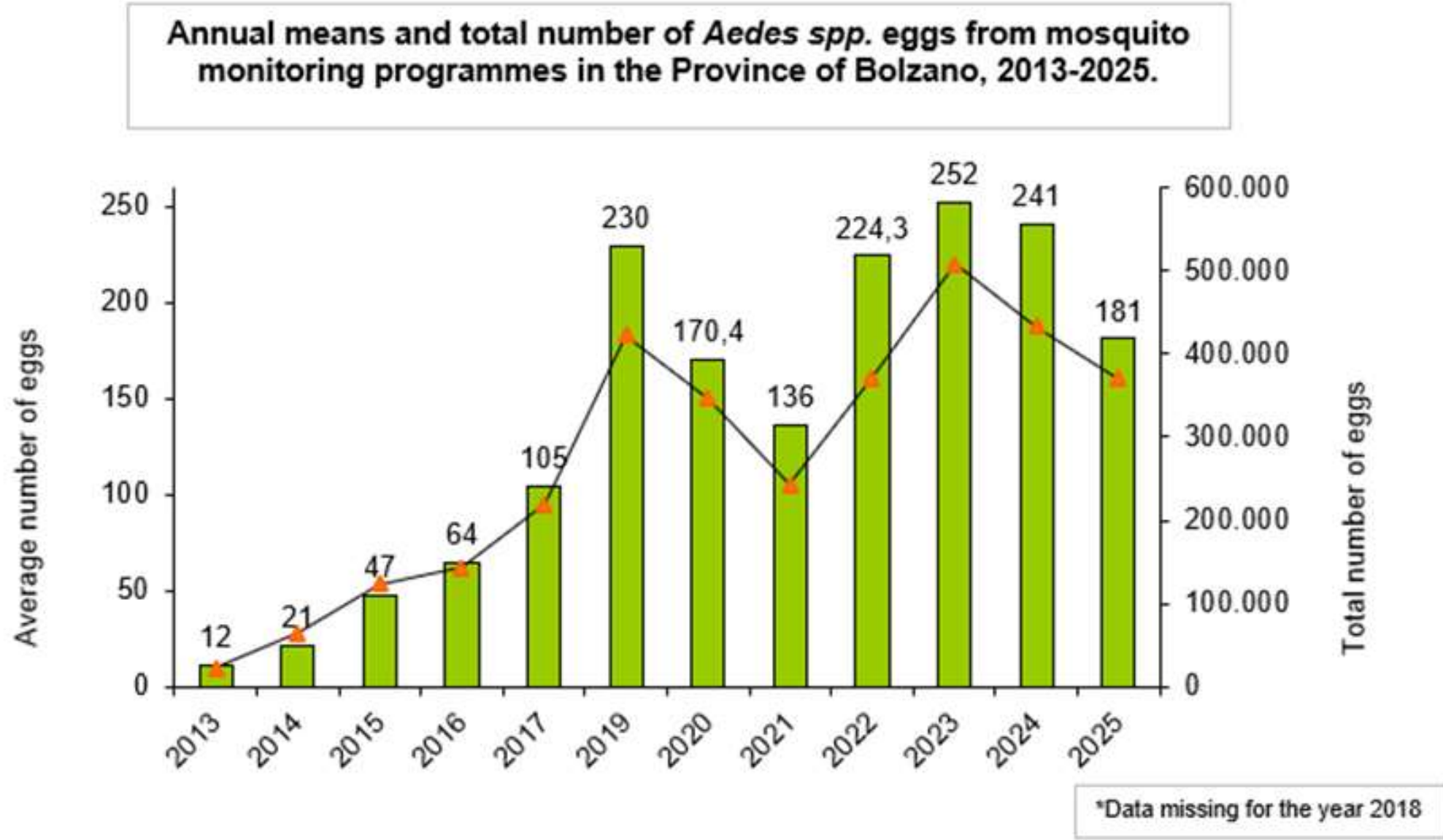
MULTILINGUAL COMMUNITY ENGAGEMENT

An annual multilingual awareness campaign is carried out through different media across the province. Each year, new stakeholders are involved and actively support the spread of information.



RESULTS

- Aedes albopictus* is well established in suitable areas, **expanding to higher altitudes** over the last decade; *Aedes japonicus* and *Aedes koreicus* have also been detected.
- A **stable, geographically distributed monitoring network** supports province-wide surveillance and prevention, with risk communication extended to all 116 municipalities.
- Intersectoral coordination** has improved with clearer institutional roles, greater operational efficiency, and strengthened stakeholder and public engagement.



NOTIFIED ARBOVIRUS CASES AT LOCAL AND NATIONAL LEVEL, 2025

Disease 2025	SOUTH TYROL		ITALY	
	Autochthonous	Imported	Autochthonous	Imported
Dengue	0	4	4	219
Chikungunya	0	1	384	88
Zika	0	0	0	5

South Tyrol = SABES bulletin 2025; Italy = ISS national surveillance 2025.

South Tyrol, 2025: no autochthonous cases; all 5 notified arbovirus cases were travel-imported. Italy, 2025: 388 autochthonous cases (4 dengue + 384 chikungunya), highlighting the need for local preparedness.

URBAN AEDES ALBOPICTUS HOTSPOT — BOLZANO

Aerial view of Bolzano, showing one of the critical areas for tiger mosquito density



CONCLUSIONS

- Effective mosquito control in **non-endemic Alpine regions** requires continuous **integrated governance** with a **One Health approach** and precise identification of prevention targets.
- Empowering multiple professional and community subgroups increases **sustainability, accountability and preventive impact**.

REFERENCES

- [1] Annual Arboviroses Bulletin 2025; ASDAA-SABES. Available from: <https://www.asdaa.it/it/temi/prevenzione-contro-la-zanzara-tigre>
- [2] Monitoring of *Aedes albopictus* in South Tyrol; APPA. Available from: <https://ambiente.provincia.bz.it/it/ambiente-salute/zanzara-tigre-monitoraggio>
- [3] Overview of arboviral diseases in Italy 2025; Istituto Superiore di Sanità. Available from: <https://www.epicentro.iss.it/arbovirosi/dashboard-2025>
- [4] Monitoring of vector insects in South Tyrol 2014; ASDAA-SABES. Available from: <https://www.asdaa.it/it/temi/prevenzione-contro-la-zanzara-tigre>

- Active vector monitoring combined with tailored stakeholder engagement is a **scalable, transferable strategy** for regional mosquito control under climate-driven ecological shifts.