

# BOVA

Building **O**ut **V**ector borne diseases  
in sub-Saharan **A**frica

# What's the problem?

- Vector-borne diseases are a major environmental threat to countries in sub-Saharan Africa & their economies
- Building out vectors *and designing healthier homes in general* will lead to more resilient dwellings, villages, towns and cities

# The basic split



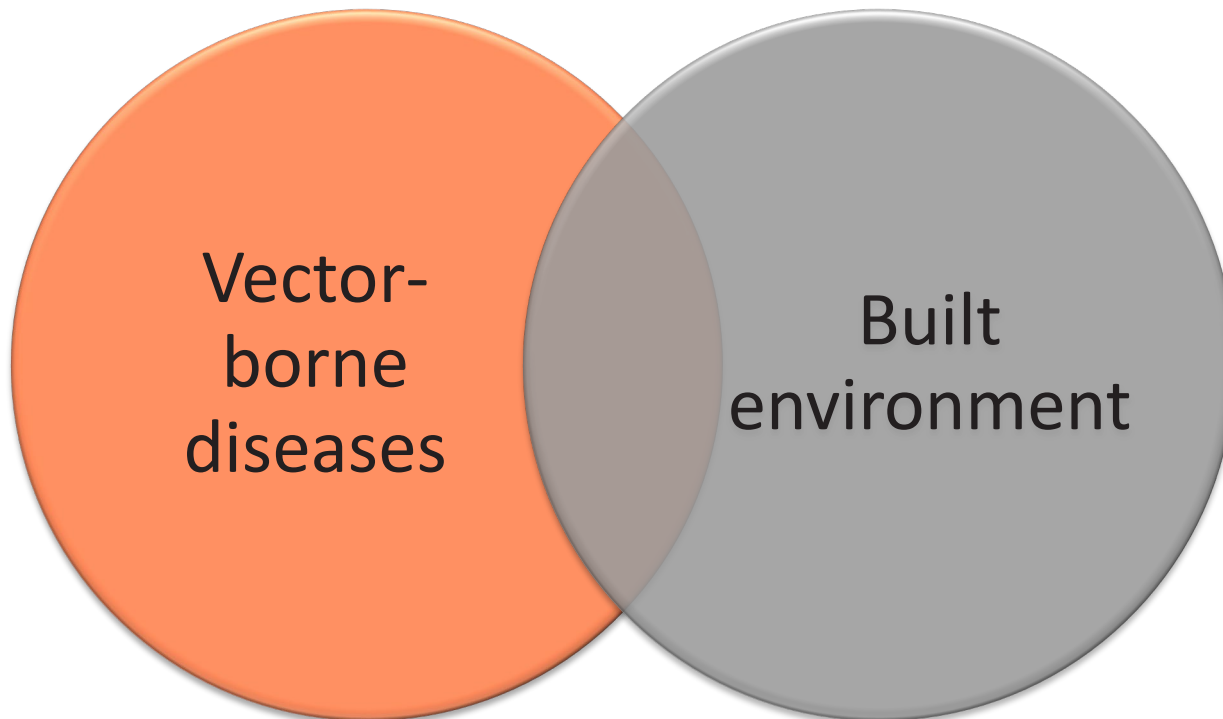
Rural/Peri-urban  
= malaria



Urban/Peri-urban  
= dengue & worse

# What is the BOVA Network?

- Interdisciplinary network of researchers and practitioners working on insect-borne diseases and the built environment
- Aims to establish a new research discipline



# What BOVA has achieved

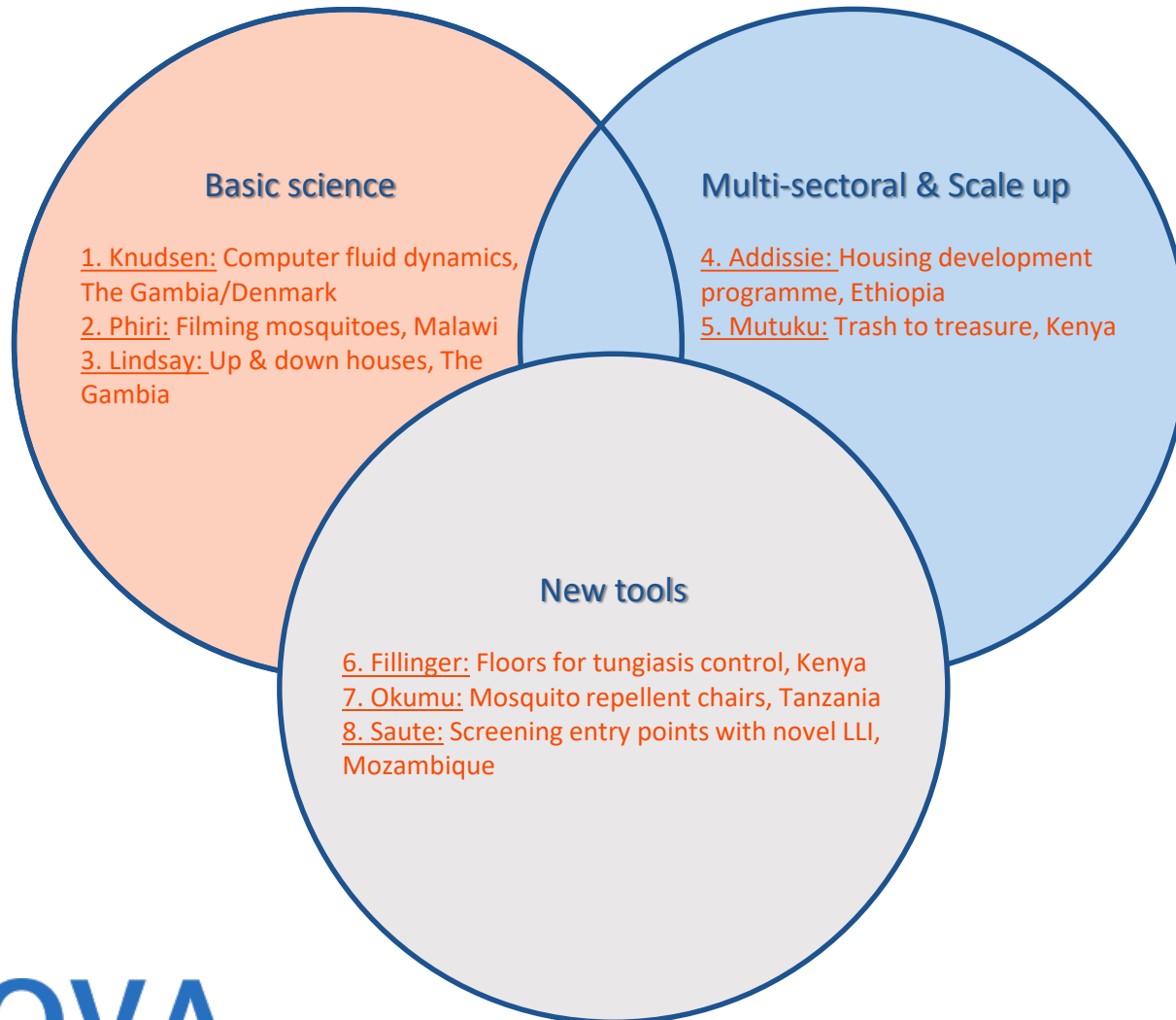
- Our Network of 461 members
- Eight pump-priming projects
- Seven grant writing workshops
- Continuing advocacy and contributions to high level reports and policy documents
- Publications
- Simple messages: what can be done now

# BOVA Global Membership

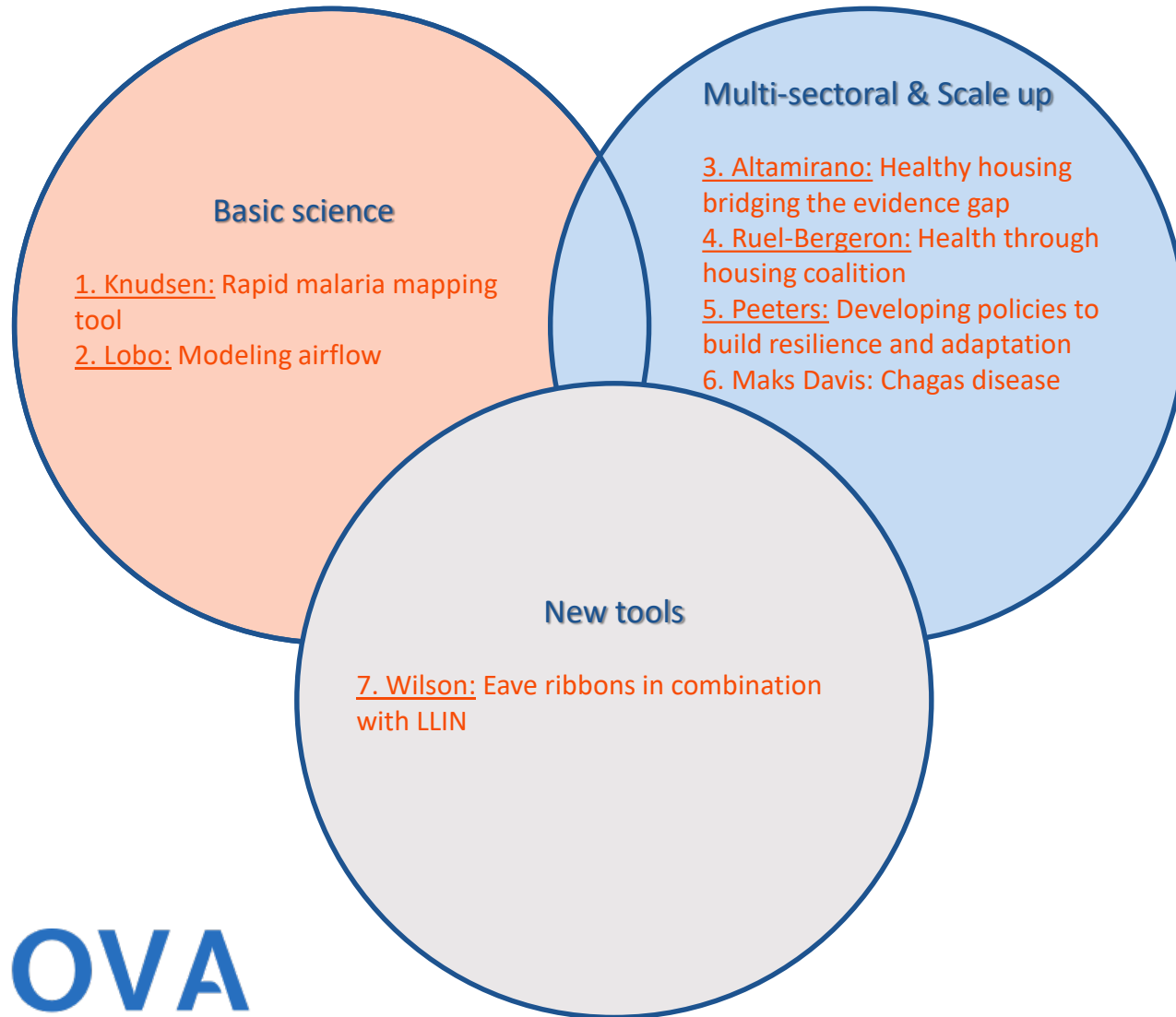


Leaflet | Map data © Google

# Eight pump-priming projects



# Seven grant writing workshops





# Publications

- Jatta, E., Jawara, M., Bradley, J., Jeffries, D., Kandeh, B., Knudsen, J.K., Wilson, A.L., Pinder, M., D'Alessandro, U. & Lindsay, S.W. (2018). How house design affects malaria mosquito density, temperature, and relative humidity: an experimental study in The Gambia. *Lancet Planetary Health*, 2, e498-508.
- Rek, J.C., Alegana, V., Arinaitwe, E., Cameron, E., Kanya, M.R., Katureebe, A., Lindsay, S.W., Kilama, M., Staedke, S.G., Todd, J., Dorsey, G. & Tusting, L.S. (2018). Rapid improvements to rural Ugandan housing and their association with malaria from intense to reduced transmission: a cohort study. *Lancet Planetary Health*, 2, e83-94.
- Lindsay, S.W., Jawara, M., Mwesigwa, J., Achan, J., Bayoh M.N., Bradley, J., Kandeh, B., Kirby, M.J., Jeffries, D., Knudsen, J., Macdonald, M, Pinder, M., Tusting, L., Weiss, D.J., Wilson, A.L., D'Alessandro, U. (2019). Reduced mosquito survival in metal-roof houses may contribute to a decline in malaria transmission in sub-Saharan Africa. *Nature Scientific Reports*, 9, 7770.
- Shenton, F.C., Addissie, A., Alabaster, G., Baziwe, D., Carrasco Tenezaca, M., Chinula, D., Jatta, E., Jawara, M., Jones, R., Knudsen, J., Krystosik, A.R., McCann, R., Murima, N., Mutuku, F., Nguela, R.L., Nieto Sanchez, C., Nix, E., Okumu, F., Ruel-Bergeron, S., Spitzen, J., Tusting, L.S., Wilson, A.L., Wood, H., Zahouli, J.Z.B., Davies, M., Lindsay, S. W. (2019). Research agenda for preventing mosquito-transmitted diseases through improving the built environment in sub-Saharan Africa. *Cities and Health*. 2374-8834.
- Tusting, L.S., Bisanzio, D., Alabaster, G., Cameron, E., Cibulskis, R., Davies, M., Flaxman, S., Gibson, H., Knudsen, J., Mbogo, C., Okumu, F., von Seidlein, L., Weiss, D.J., Lindsay, S.W., Gething, P.W. & Bhatt, S. (2019). Mapping changes in housing in sub-Saharan Africa from 2000 to 2015. *Nature*. 568, 391-394.
- von Seidlein, L., Woods, H., Brittain, O.S., Tusting, L., Bednarz, A., Mshamu, S., Kahabuka, C., Deen, J.L., Bell, D., Lindsay, S.W. & Knudsen, J. (2019). Knowledge gaps in the construction of rural healthy homes: a research agenda for improved low-cost housing in hot-humid Africa. *PLOS Medicine*, 6, e1002909.
- Wilson, A.L., Davies, M. & Lindsay, S.W. (2019). Revisiting an old idea: engineering against vector-borne diseases in the domestic environment. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 113, 53-55.
- Wilson, A.L., Courtenay, O., Kelly-Hope, L.A., Scott, T.W., Takken, W., Torr, S. Lindsay, S.W. (in press). The importance of control and elimination of vector-borne diseases. *PLOS Neglected Tropical Diseases*.

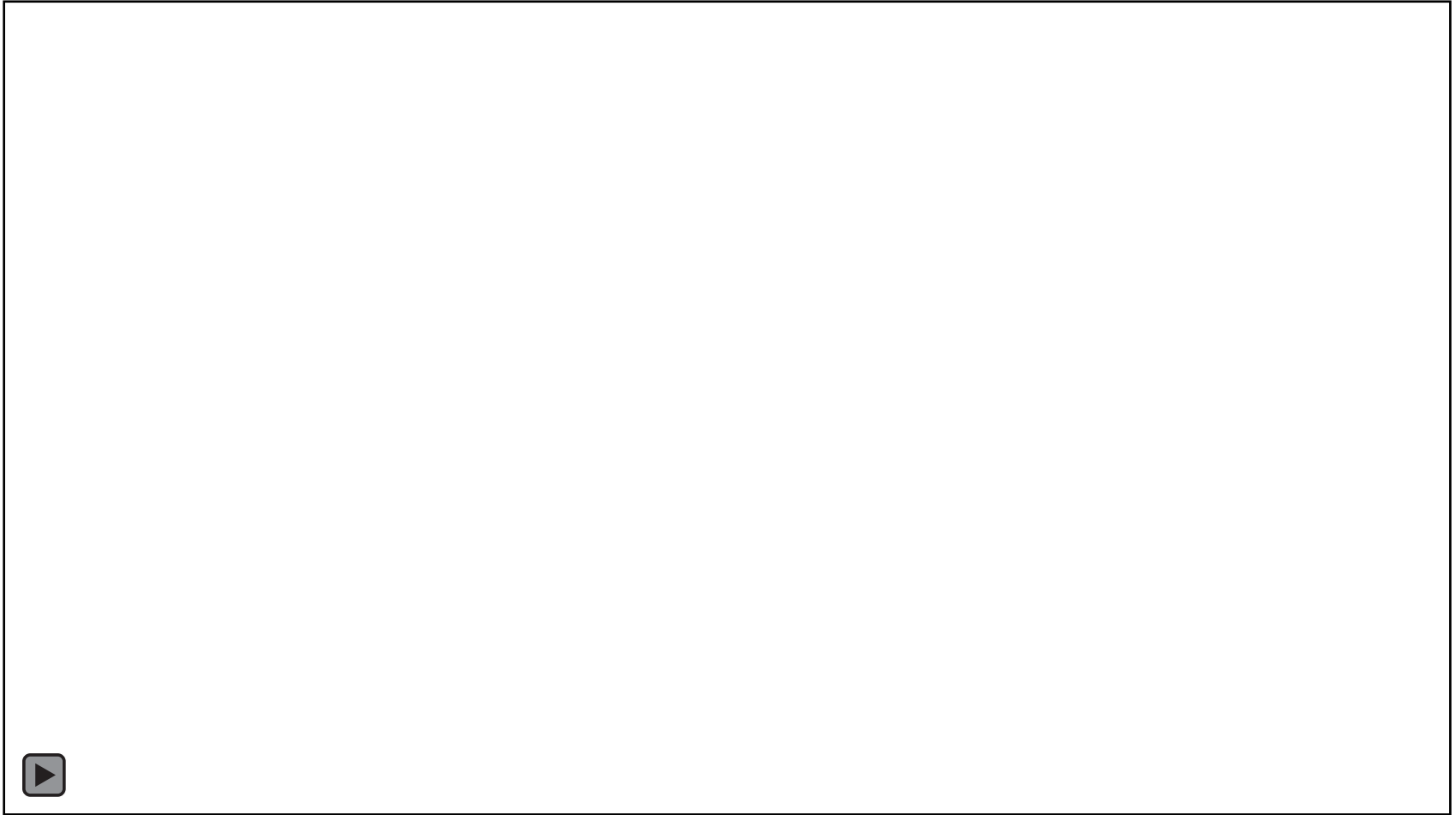
# Continuing advocacy and contributions to high level reports and policy documents

- Lancet Commission on mosquitoes, viruses and cities
- Working groups:
  - RBM work streams
  - Strategic Technical Advisory Group-NTDs
  - International Guidelines on Urban and Territorial Planning
- International meetings:
  - Roll Back Malaria, Switzerland
  - BOVA Open Network Meeting, Kenya
  - Healthy City Design, London
  - International Conference on Urban Health, China
  - American Society of Tropical Medicine & Hygiene, USA

# What can be done now

- Publications: Phil Transactions “Recommendations for building out vector-borne diseases: the DELIVER mnemonic”
- Examples of good practice e.g. Singapore dengue control, emphasising environmental management
- Media: video

# Mosquito video



# Summary

- Providing evidence for supporting global policy on housing and health
- Helping to develop guidance for designing resilient homes and communities
- Assisting the development of a new discipline

# Our Network Members

- We are relying on you to carry on the good work ....



- Final BOVA Open Network Meeting tbc

*Thank you*

Find out more about the network!

[www.bovanetwork.org](http://www.bovanetwork.org)



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# Acknowledgments:

