

Preventing vector-borne disease outbreaks in emergent peri-urban settings

*Trans-disciplinary study on the Integrated
Housing Development Programme in
Jimma, Ethiopia*

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Outline

- The Problem
- Objectives
- Methods
- Deliverables
- Preliminary Findings
- Challenges
- Next Steps

The Problem

- Urbanization rates in Ethiopia are among the highest in the world. Recent estimates project an annual growth of 1.9% between 2014 and 2050 associated with poverty, climate change and migratory flows.
- The Ethiopian national government developed the Integrated Housing Development Programme (IHDP). Despite progress in coverage, this type of housing has shown important pitfalls, including lack of appropriation of the emerging built environment, poor quality construction materials, and deficient sanitation.
- Urban malaria persists among populations with low ITN ownership and usage and has also been associated with weak health services, wide spread economic disparity, human mobility. Other NTDs (eg schistosomiasis) also associated with water bodies surrounding peri-urban settlements .

General Objectives

- Design a spatial development strategy of the house and of the condominium scheme/settlement, that reduces opportunities for the presence of VBDs (malaria and schistosomiasis vectors).

Specific Objectives

- Identifying receptive spaces (breeding sites, presence of vectors indoors and outdoor resting spaces, stagnating water) for malaria and schistosomiasis vectors at the levels of household and immediate surrounding settlement areas of IHDP condominium housing in Jimma Town.
- Mapping household distribution and use of the space, housing typologies, water sources, water networks and storing options in focused condominium housing and settlements.
- Identifying social and cultural requirements put by populations on housing and settlements to assess the acceptability of potential improvements.
- Design a spatial development strategy, including an architectural plan of the house and of the condominium scheme/settlement, that reduces opportunities for the presence (breeding, introduction) of malaria and schistosomiasis vectors.
- Propose a vector-preventive design of condominium housing to relevant stakeholders, especially the Ministry of Health and the Ministry of Work and Urban Development to be tested and evaluated for future social housing projects under the condominium scheme.

Methods

entomology
epidemiology
social sciences
architecture/urbanism

explorative

a spatial strategy (?)
a spatial appropriation (?)

«Therefore, this proof-of-concept study aims to develop a transdisciplinary intervention to contribute to reducing the sustained presence of competent vectors in peri-urban areas of Jimma Town through the spatial improvement of IHDH housing structures and settlements»

chosen for its climate
& urban growth
(migration issues)

adapted vegetation
topographical design

(reduce stagnant water sites)

housing orientation
wind sun
materiality

design itself/ appropriation of space

urban malaria
schistosomiasis
(...)

in the fringes of the city
generic buildings
without local knowledge

scale between city and house
gathered allotments
shared (public) infrastructure

Methods

- Study setting: This study took place in three of the six condominiums built by IHDP in Jimma Town.



scale 3 = different cases
in their context



1 = agip



2 = yetebaberut



3 = dipo



4 = NOC

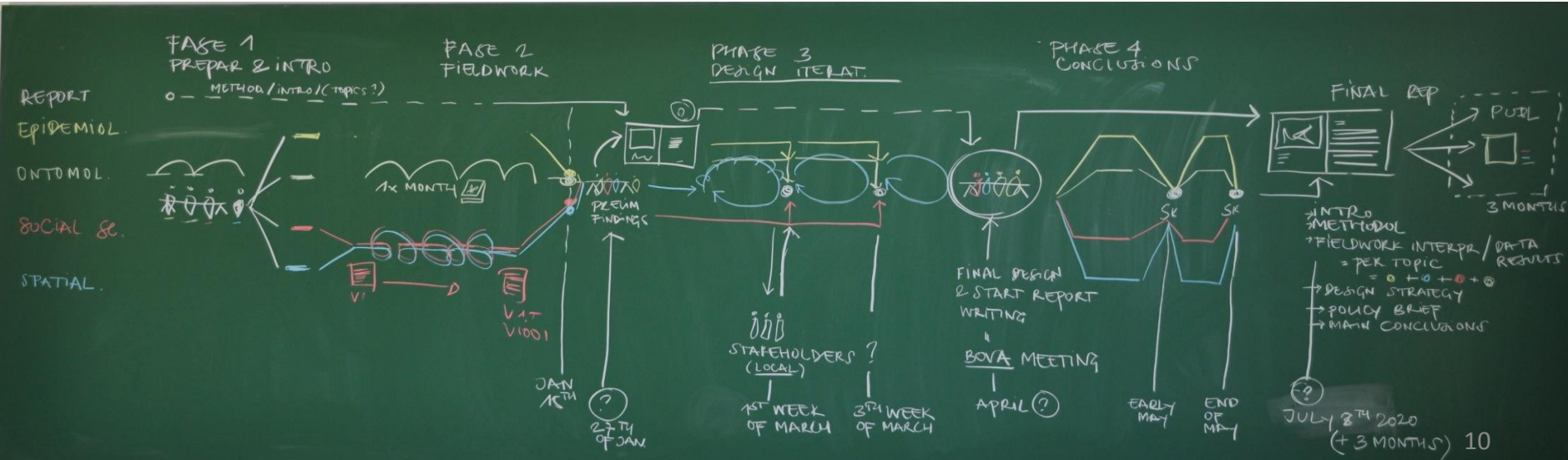
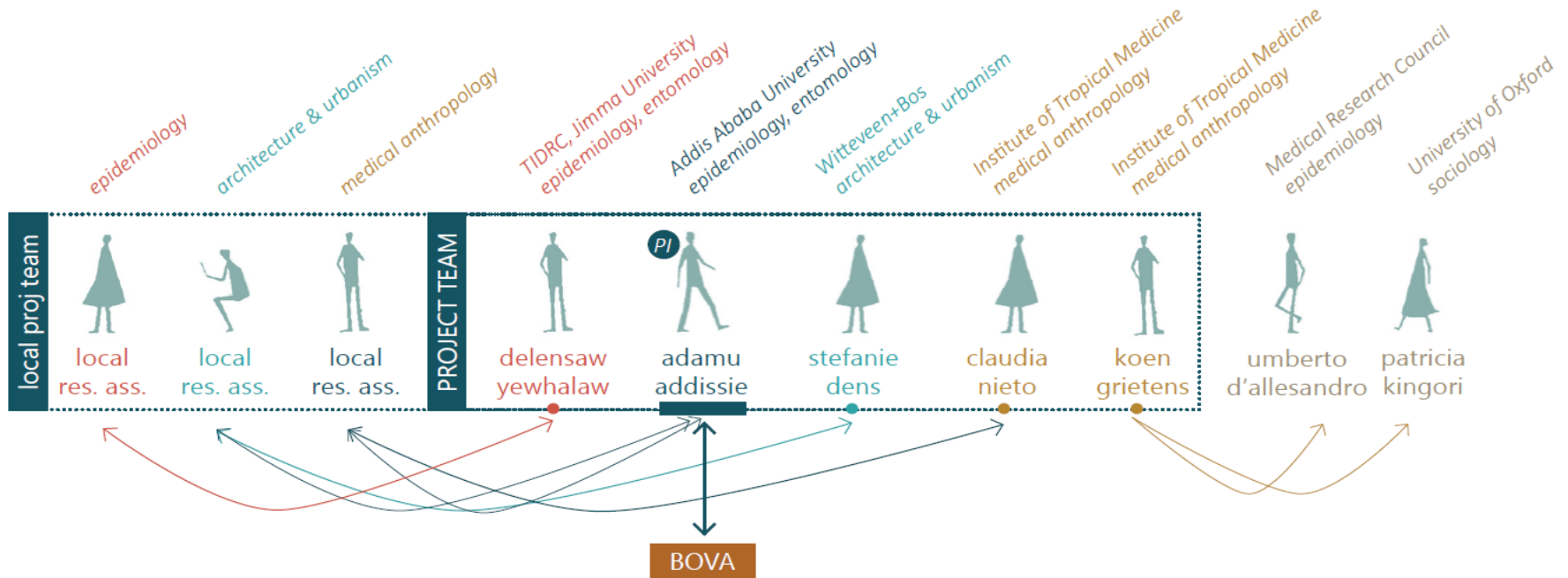
Condominiums



asgedom



Multidisciplinary Approach



Architecture

Methods: Research by design - graphical making and output of maps and drawings reflects the knowledge obtained through literature review and fieldwork.

Data collection: Literature review, interviews with key informants, observation of architecture and settlement logics.

Social sciences

Methods: Ethnographic approach. Focus on uses and appropriation of the space, migratory flows, and decision-making in relation to living environments.

Data collection: In-depth interviewing, informal conversations and group discussions. Participatory consultation on emerging proposals.

Entomology

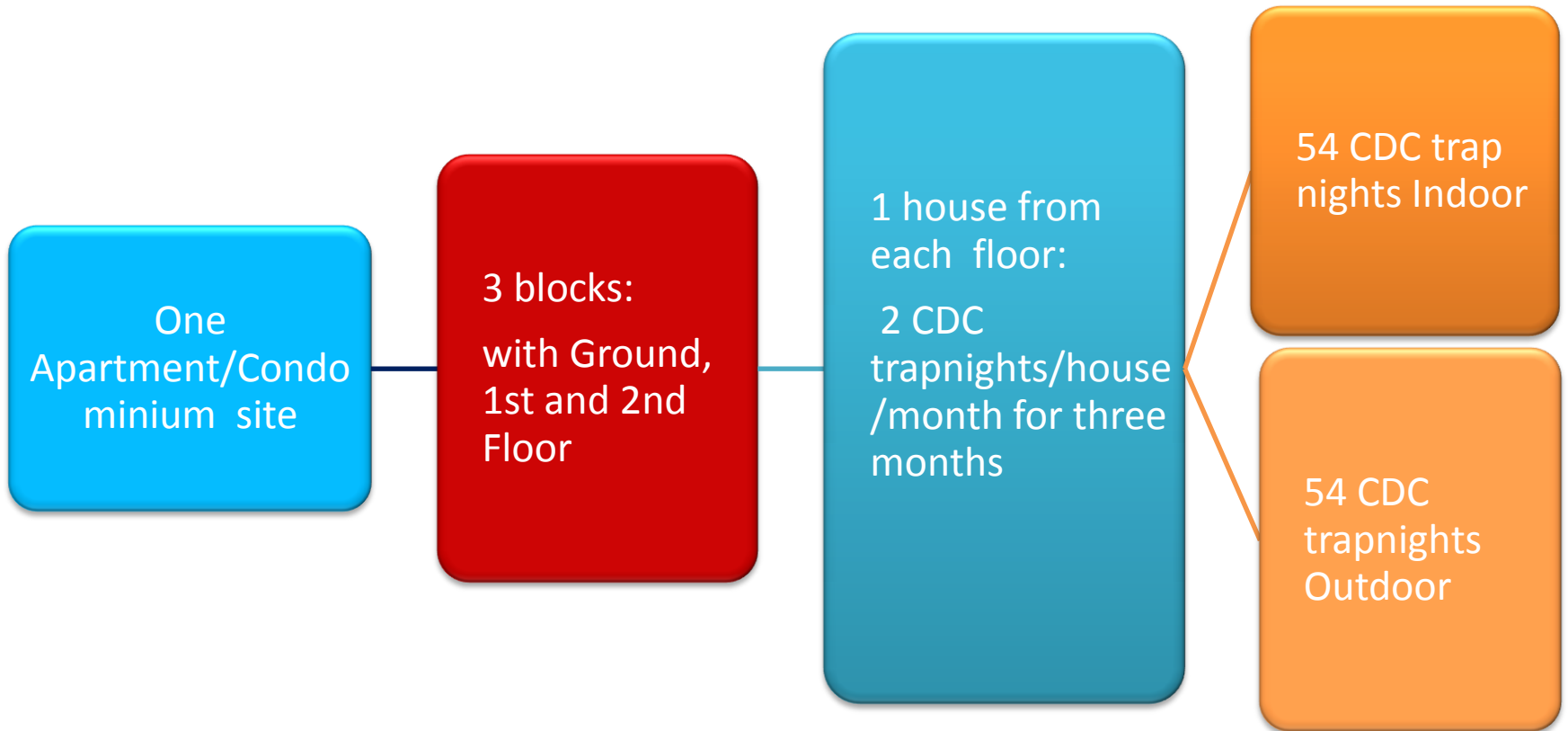
Methods: Entomological survey to assess presence of malaria and schistosomiasis vectors

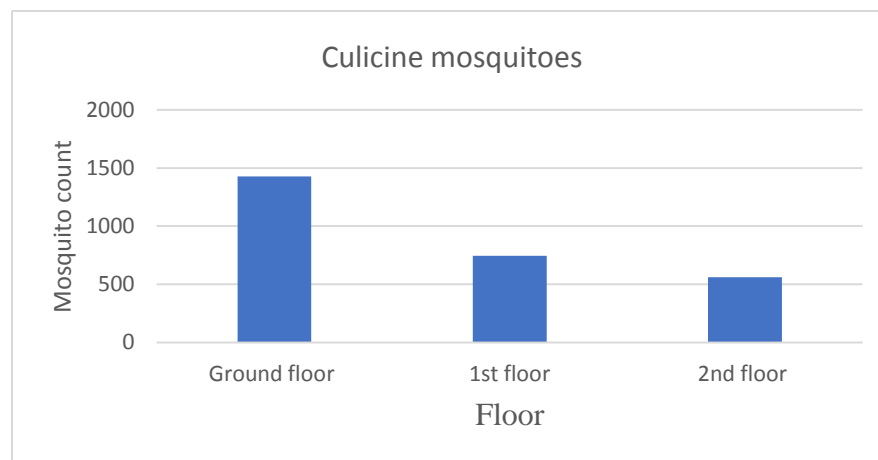
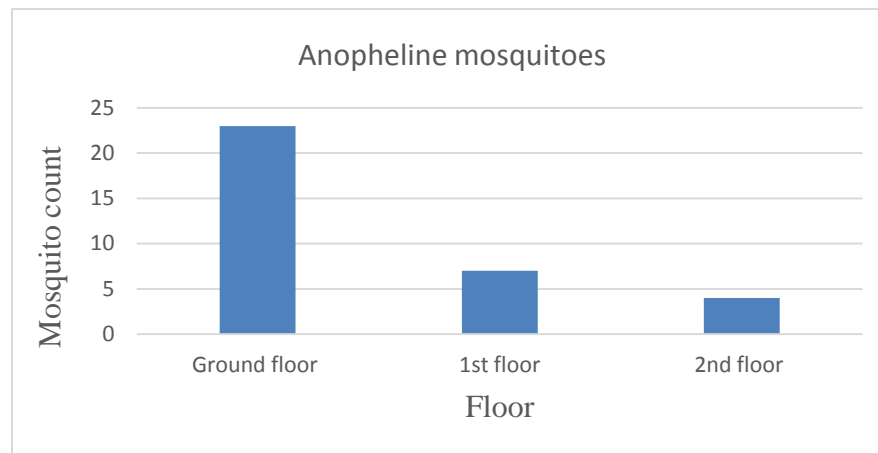
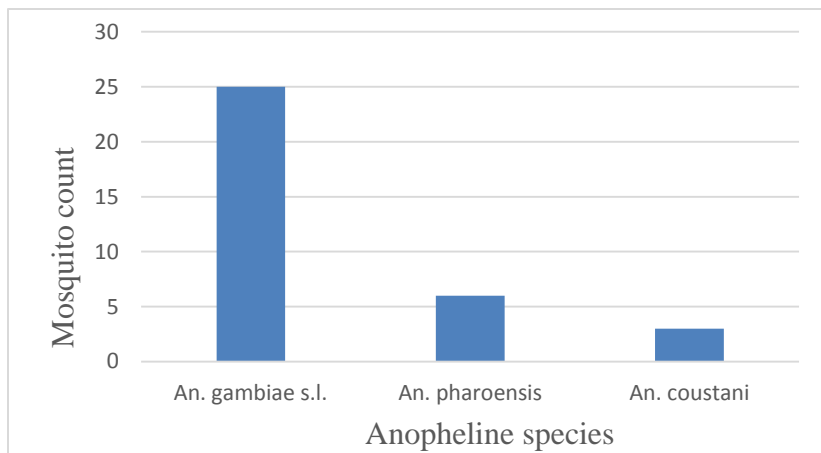
Data collection: Entomological survey. Indoor trap catches, mosquito larvae collection and snail intermediate host sample collection.

Deliverables & Preliminary Findings

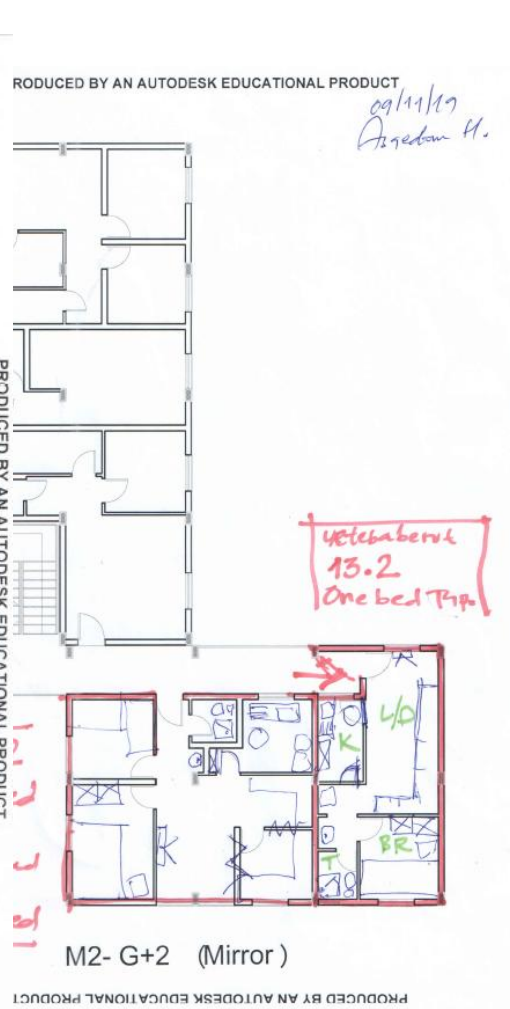
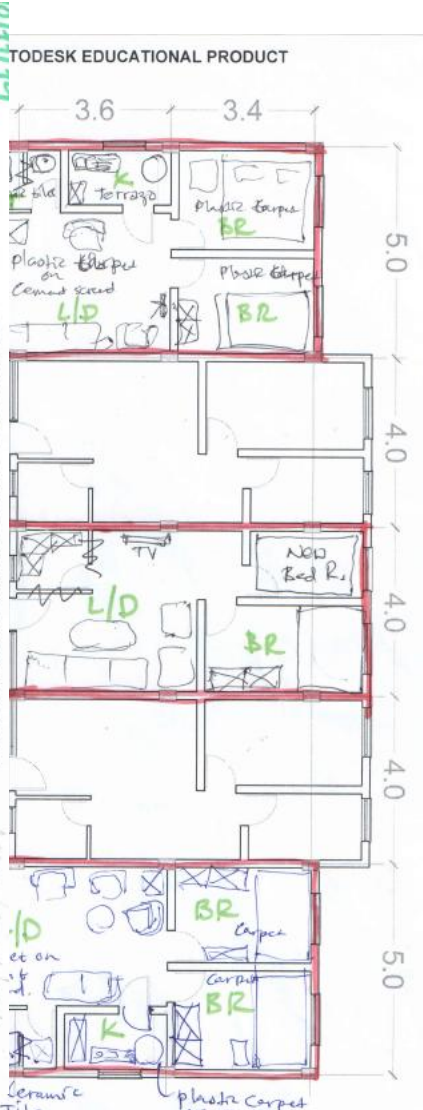
- Graphical analysis of condominium and settlement patterns and their manifestations in space in relation to presence of vectors for malaria and schistosomiasis.
- Analysis of social and cultural housing requirements for vector control in condominium housing.
- Report and guidelines to the research-by-design approach. Trans-disciplinary methodology to approach prevention of malaria and schistosomiasis vectors in peri-urban settings through housing and settlement interventions. This pilot process will be documented for further use by other researchers in similar settings.
- Spatial development strategy for vector control within the condominium development scheme in Jimma Town
- Suggested: identify activity systems affecting vector control

Entomology/Epidemiology





Architectural



Produced by an Autodesk Educational Product



Mosquitoes circling around a housing unit at Dipo, situated next to corn farmland and swampy areas
Dipo site observation on 02/11/2019 at 07 AM

People used the any free space for cooking, washing, playing and sun



I am Sorry !!!!



Anthropologic

- A total of 29 in-depth interviews (IDI), 2 focus group discussions (FGD), 2 key informant interview (KII), 6 informal conversations (IC), compound and home to home observation were conducted at three condominium sites; Depo, Yetebaberut and Agip condominium for 3 months.
- Multiple issues were discussed focusing on housing condition, sanitation and hygiene, vectors and vector borne diseases; mainly malaria and bilharzia.
- Major findings are summarized under the major themes of; Social life in the condominium, Housing condition, comfort of condominium, waste management in the condominium, insects and diseases related to them, and Access to public services.

Themes and Categories

Social life in the condominium	Approaches to neighbors No people interaction Good relation with neighbors Sharing problems Enjoying events
Housing condition and Common Spaces	Ownership of the house/condominium House structure and space of rooms Modification and maintenance of the house Common spaces in the condominium
Comfort of condominium	Living in rental house /condominium Benefit of condominium Rental house challenges Discomforts with condominium Challenges with condominium Satisfaction with condominium Why to select condominium Comparing quality of life

<p>waste management in the condominium</p>	<p>Solid waste Liquid waste Who manages waste Where wastes accumulate How wastes affect What to do with wastes</p>
<p>Insects and diseases related to them</p>	<p>Vectors and malaria Using bed nets Awareness to bilharzia use of windows/doors and ventilation experience</p>
<p>Access to public services</p>	<p>Access to water, electricity, and internet service Access to schools, health care facilities and shops</p>

Next Steps

- In-depth Data Analysis
- Analysis Research by design
- Stakeholder analysis
- Participatory consultation
- Booklet : Recommendations and Documentations

Thank You !!!

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BOVA
network

