

Woman Leadership in Mapping Riverside Communities in the Amazon Forest using OSM

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MEET YOUR SPEAKERS



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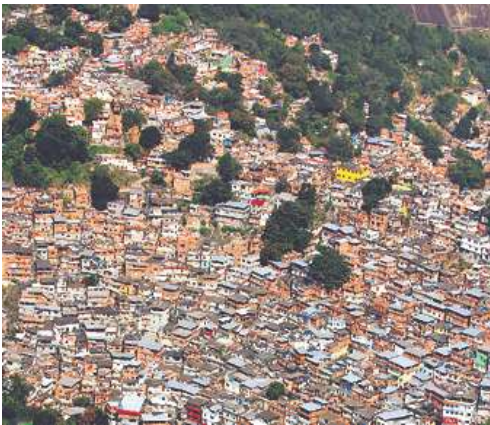
PRESENTATION AIMS

Show the experiences of the Brazilian YouthMappers' chapter Unificar Ações e Informações Geoespaciais (UAIGeo), in partner with Centro de Estudos Superiores de Tefé-Universidade do Estado do Amazonas - CEST/UEA, within mapping riverside communities in the Amazon rainforest.



CHALLENGES TO PRODUCING THE OFFICIAL CARTOGRAPHY IN BRAZIL

Extension of the territory: 8.516.000 km²;
Number of municipalities: 5.568 plus the Federal District;
Expensive cost of producing the local mapping.
Precarious investment in cartography in Brazil.



Favelas (Slum)



riverside communities

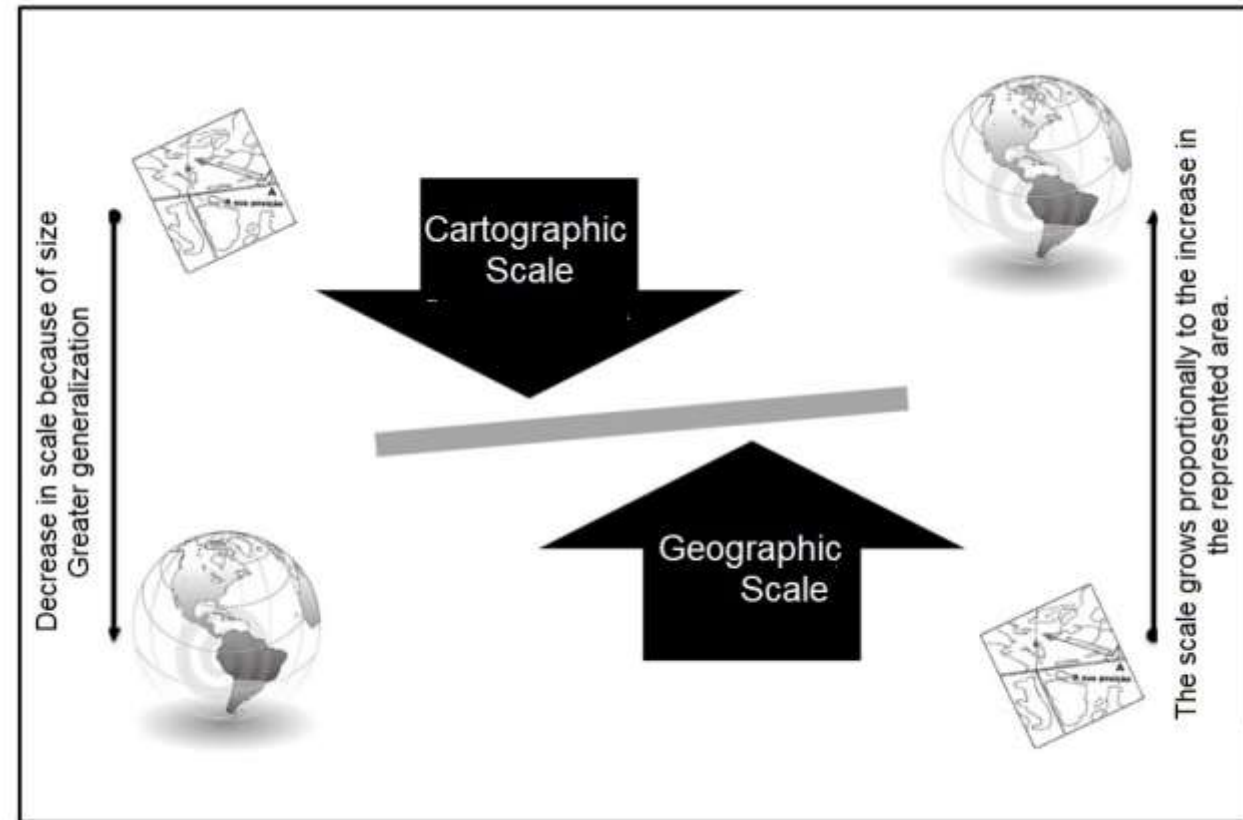


small towns



Challenges to producing the Official Cartography in Brazil

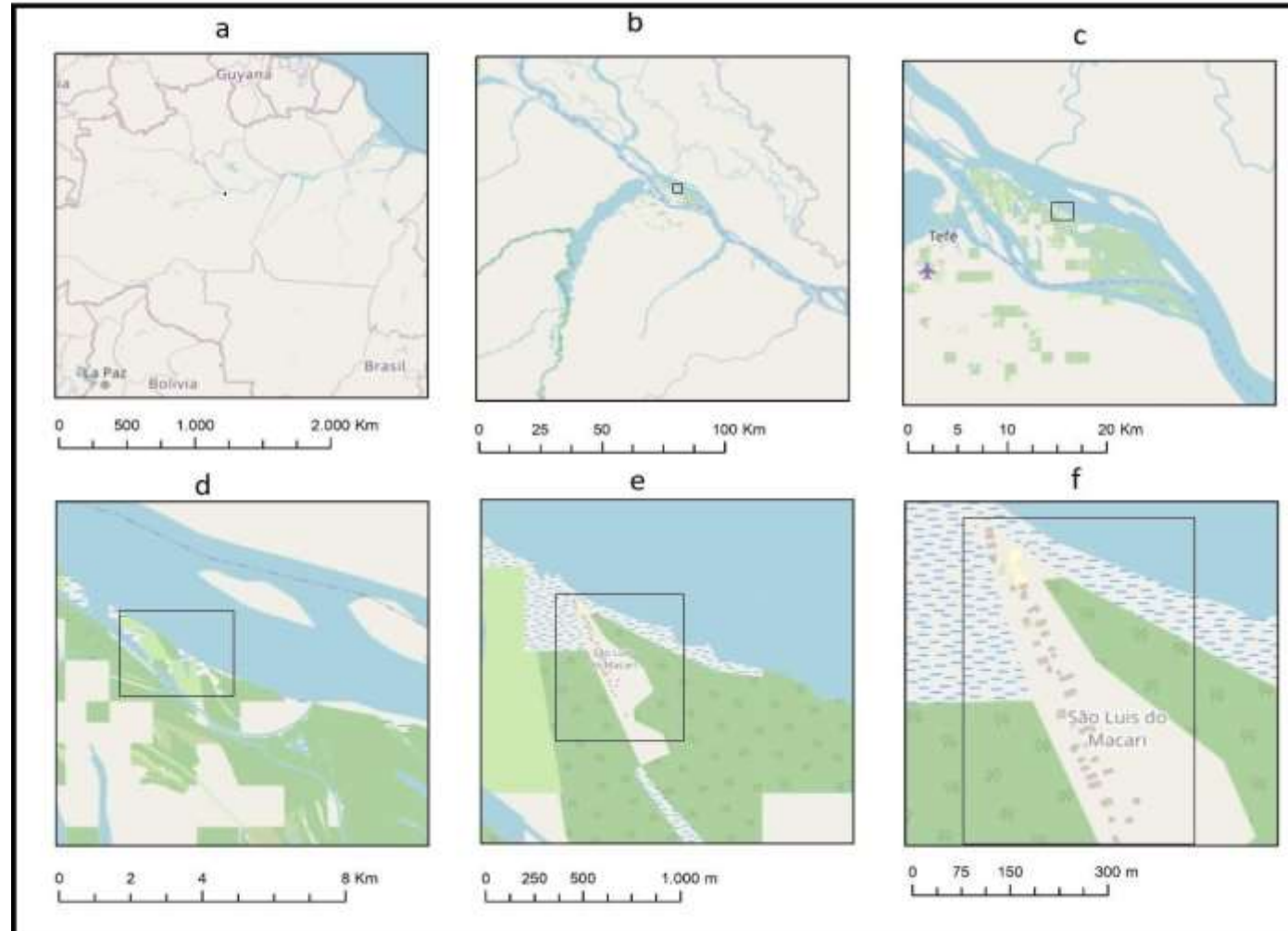
The image shows how the notion of small and large scale is inversely understood to depending on the scale of analysis (cartographic or geographic) (SANTOS, 2012, p.106).¹



Autor: BRASIL, Joildes (2012).

¹ SANTOS, J. B. Discussões sobre o conceito de escala e os mapeamentos de solos no Brasil. Caminhos de Geografia, Uberlândia. v. 13, n. 44, p. 102–112, 2012. Disponível <http://www.seer.ufu.br/index.php/caminhosdegeografia/>

CHALLENGES TO PRODUCING THE OFFICIAL CARTOGRAPHY IN BRAZIL



a, b, c: Small-scales; **d:** Medium - scale; **e, f:** Large - scales

CHALLENGES TO PRODUCING THE OFFICIAL CARTOGRAPHY IN BRAZIL

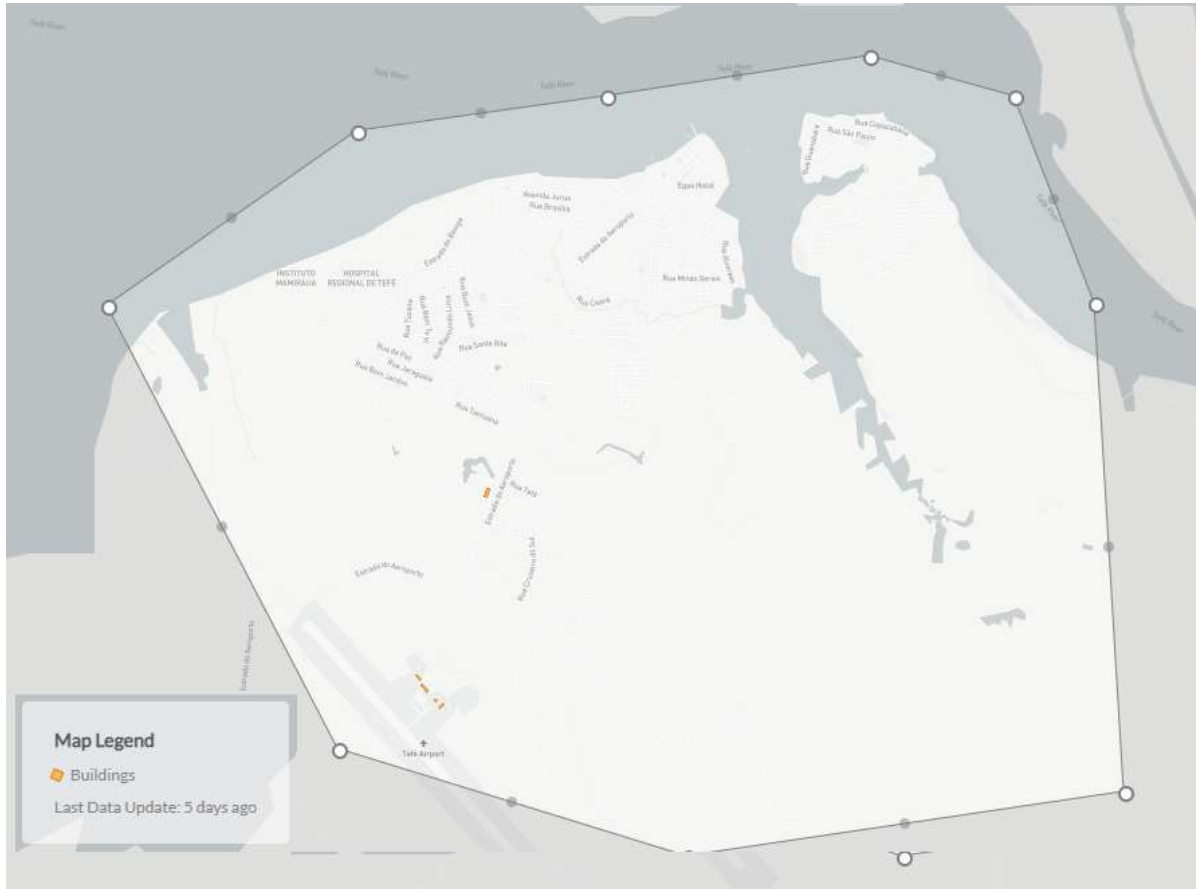
Technical agreement between:

- Centro de Gestão e Operacional do Sistema de Proteção da Amazônia;
- Serviço Geológico Brasileiro;
- Diretoria de Hidrografia da Amazônia;
- Departamento de Ciência e Tecnologia (Comando do Exército);

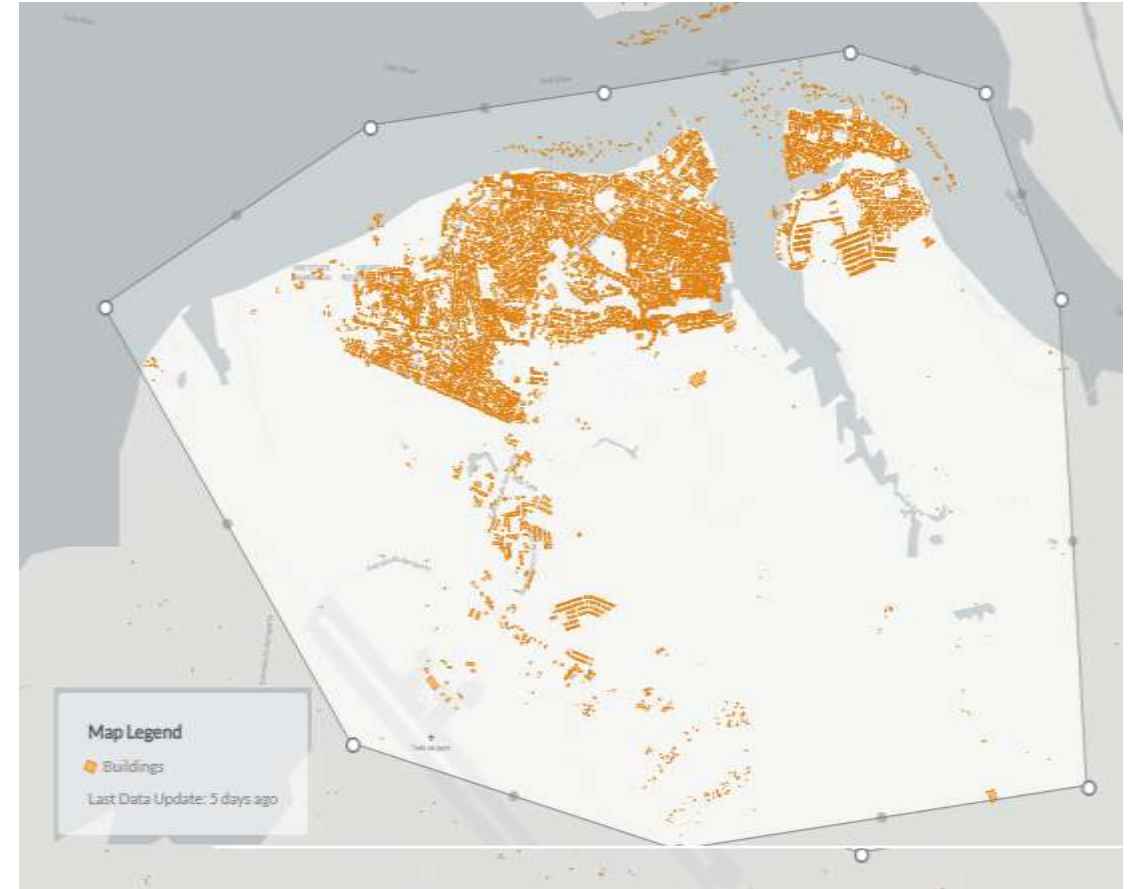
Goals: topographic map (1:50.000 until 1:250.000), geological map (1:100.000 and 1:250.000), nautical chart and aerophysical products (scale 1:100.000)



CHALLENGES TO PRODUCING THE OFFICIAL CARTOGRAPHY IN BRAZIL



The Tefé city (Amazonas -State) in
OSM before the project (2019)



The Tefé city (Amazonas -State)
in OSM after the project (2022)

CHALLENGES TO PRODUCING THE OFFICIAL CARTOGRAPHY IN BRAZIL

MapBiomas Brasil;

Mapcarta;

Infraestrutura Nacional de Dados Espaciais - INDE;

Centro de Sensoriamento Remoto - Universidade Federal de Minas Gerais - UFMG;

United Nations Organization;

Doctors Without Borders;



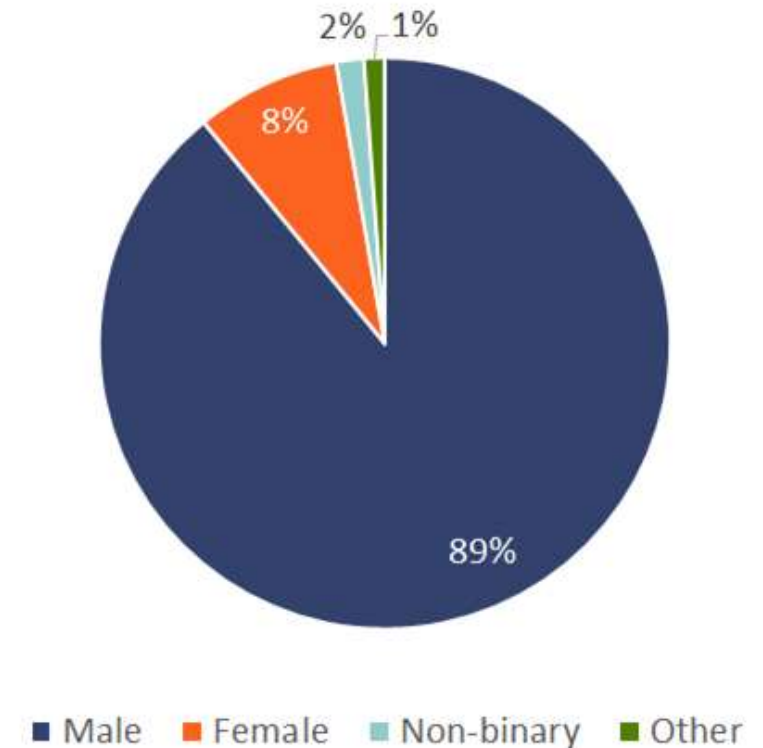
GENDER GAPS IN GEOSPATIAL FIELDS

Globally, on average 35% of female students entering the university choose fields in science, technology, engineering, and math - STEM.¹

Globally, twice as many men as women work in GIS (Geographic Information Systems).²

An estimated 2-5% of OpenStreetMap (OSM) contributors are women.⁴

Gender Breakdown of Respondents to 2021 OpenStreetMap Foundation Survey



1. "Descifrar el código: La educación de las niñas y las mujeres en ciencias, tecnología, ingeniería y matemáticas (STEM)". UNESCO. 2019.
2. "Gender in the GIS Workforce." *GIS Lounge*. 27 June 2014.
3. "Who Maps the World?". Holder, Sarah. Bloomberg. 14 Mar 2018.

EVERYWHERE SHE MAPS: SUPPORTING THE CREATION OF INCLUSIVE MAPPING COMMUNITIES



GENDER AND FORESTS IN THE AMAZON

The **collective nature of forest territories** controlled by Amazonian communities constitutes a context where **not all community members have guaranteed secure access or control over land.**

Persistent and widespread **gender inequality in Amazonian land titling practices** both in individual private lands and on communal lands (e.g. to male preference in ownership rights).



GENDER AND FORESTS IN THE AMAZON

The limited and uneven documentation of Amazonian communities does not allow generalizations. However, some common characteristics related to gender relations in the Amazon are identified:

- 1. **Strong community identity** that deflects attention from gender inequality
- 1. **Patriarchal cultural values** extended to **land titling**
- 1. **Division of labor by gender** associated with different physical spaces and areas of activity
- 4. The **productive and often invisible subsistence work** of women
- 4. The **geographic isolation** of many forest communities

INVISIBILITY OF COMMUNITIES IN TEFÉ - AM

Map are images that contribute to dialogues in a socially constructed world¹;

Few geospatial data about these communities in science literature and on the internet;

Difficulties in representing communities in Amazon rainforest²:

- 1- Wide demographic dispersion of communities in the Amazon;
- 2- High costs of satellite images that show communities;
- 3- Isolated space arrangement in the middle of a forested landscape - difficult to find them;
- 4- Difficulties in transport and communication;



¹Harley, B. (2009). Mapas, saber e poder. *Confins [Online]*, 5, 2009;

²Calegare, M. G. A., Higuchi, M. I. G., & Forsberg, S. S. (2013). Desafios metodológicos ao estudo de comunidades ribeirinhas amazônicas;

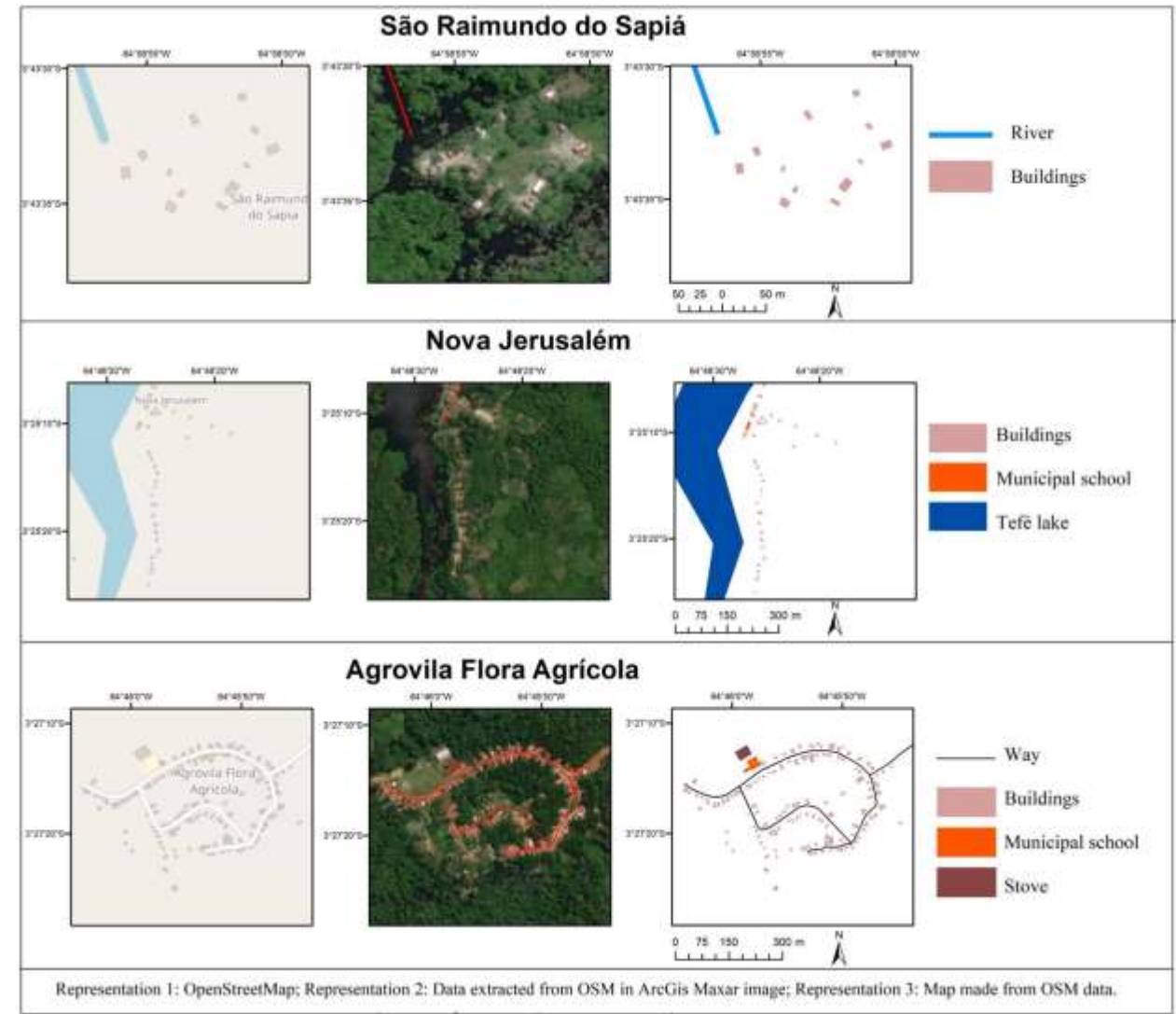
MAPPING COMMUNITIES IN THE GROUP

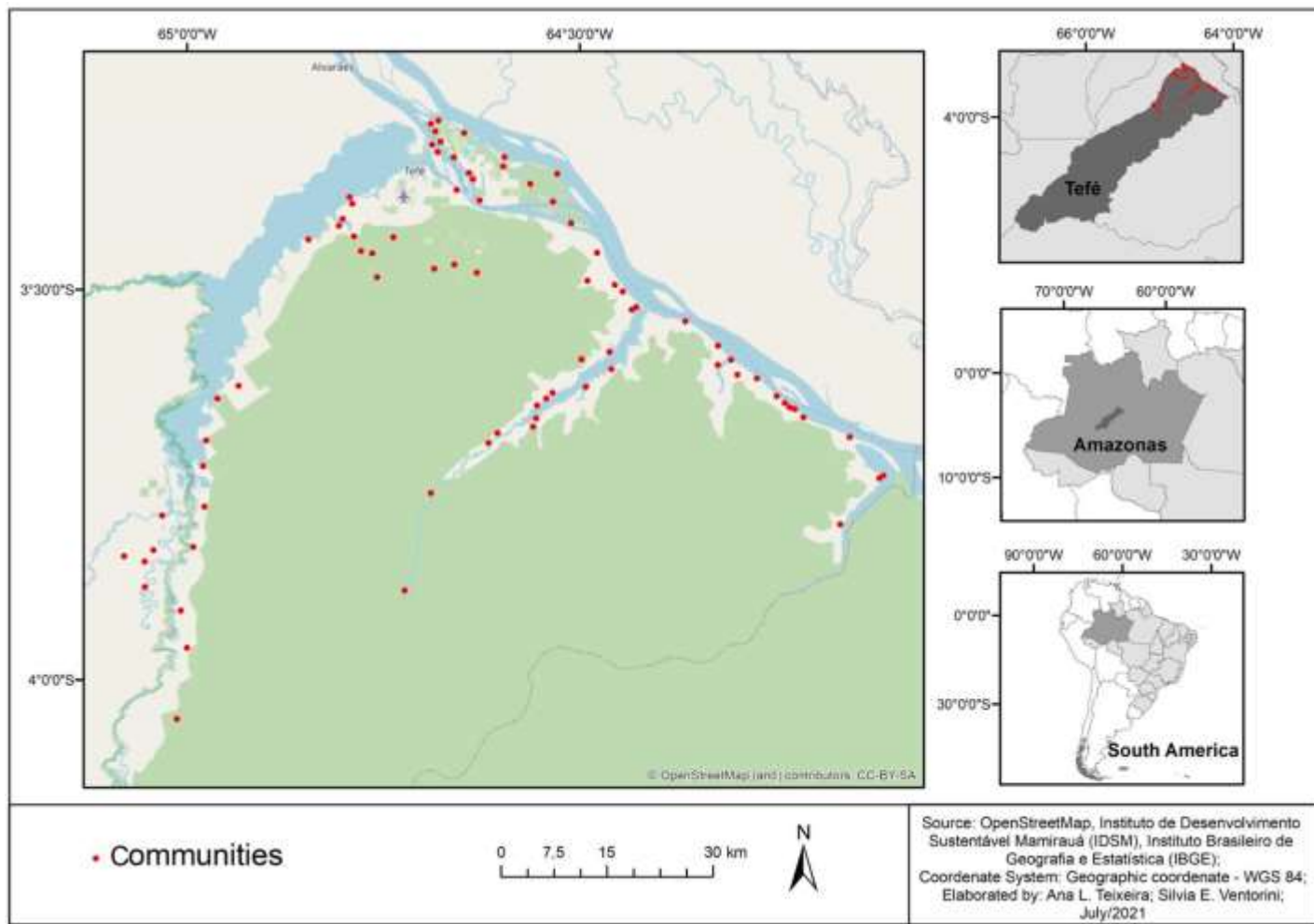
95 communities of Tefé mapped in OSM from a base provided by the Mamirauá Sustainable Development Institute;

Temporal analysis from two images available in OSM - Maxar and BING;

Some observations about the surroundings of the community;

Differences in available toponyms;





Community	Number of buldings	
	Bing	Maxar
Flora Agrícola	105	145
Bacuri	35	53
Boa Vista	15	20
Santa Cruz	24	20
Bela Vista do Sapiá	17	9
Vila Trindade	19	15

MAPPING COMMUNITIES IN THE HOT TASKING MANAGER

Difficulty of finding all the buildings in the municipality of Tefé due to its territorial extension (23,704 km²)



Registering areas in Humanitarian OpenStreetMap Tasking Manager



90 contributors - Mapped 10.780 buildings including the city



Need for local contributors for data validation



Everywhere She Maps Program Support



Reverse the invisibility about the communities



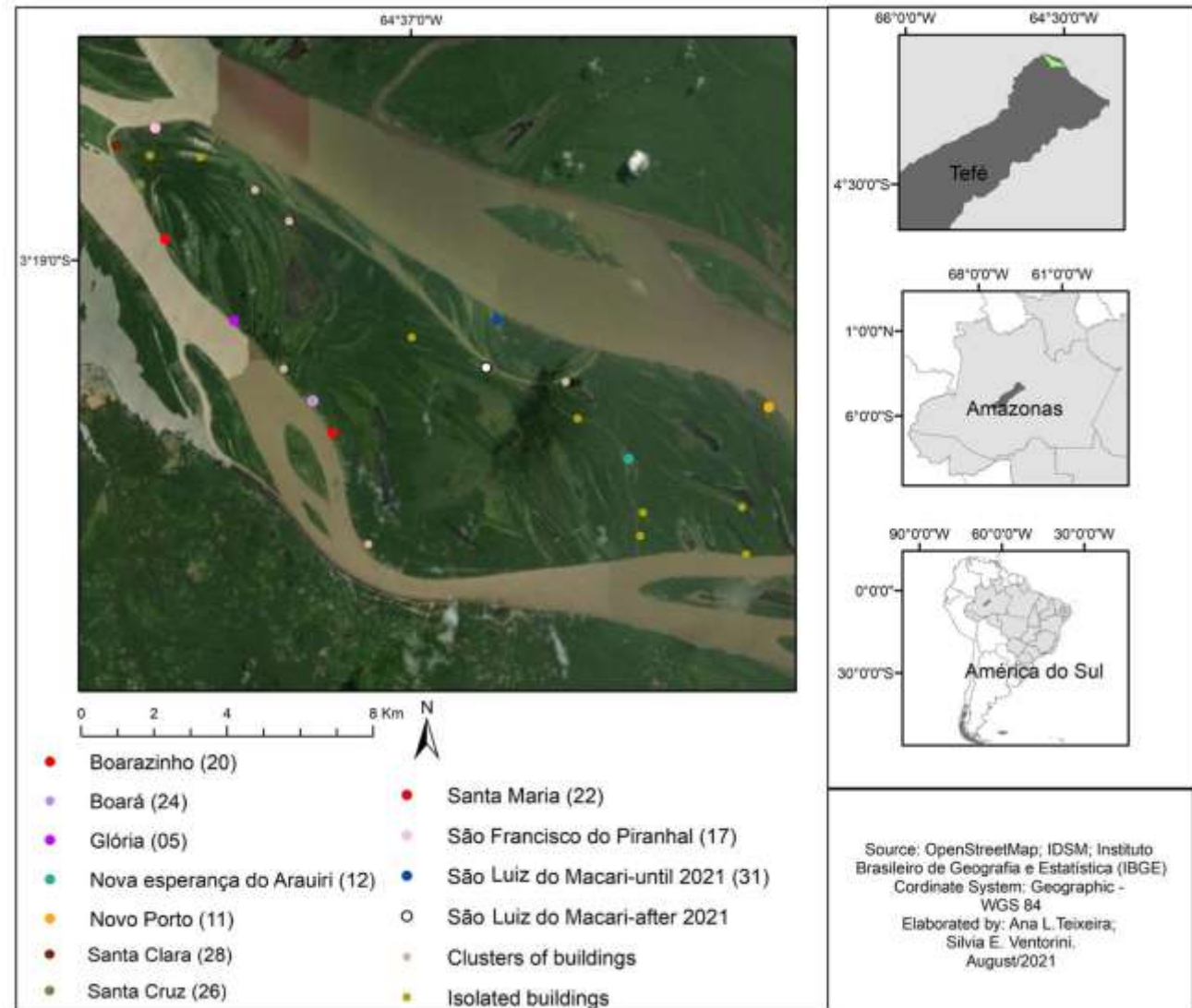
TARARÁ'S ISLAND - SUPPORT ESM PROGRAM

Investigation about toponyms of each community in Tarará's Island;

1- Participation of local residents for the validation of community toponyms;

2- Interview with locals in Tefé' street market;

3- Comparaison of databases to validate the toponyms;



COMMUNITY OF SÃO LUIZ DO MACARI

Information from local residents about the community's move elsewhere;



Active dynamics of the Solimões River - "Fall lands";

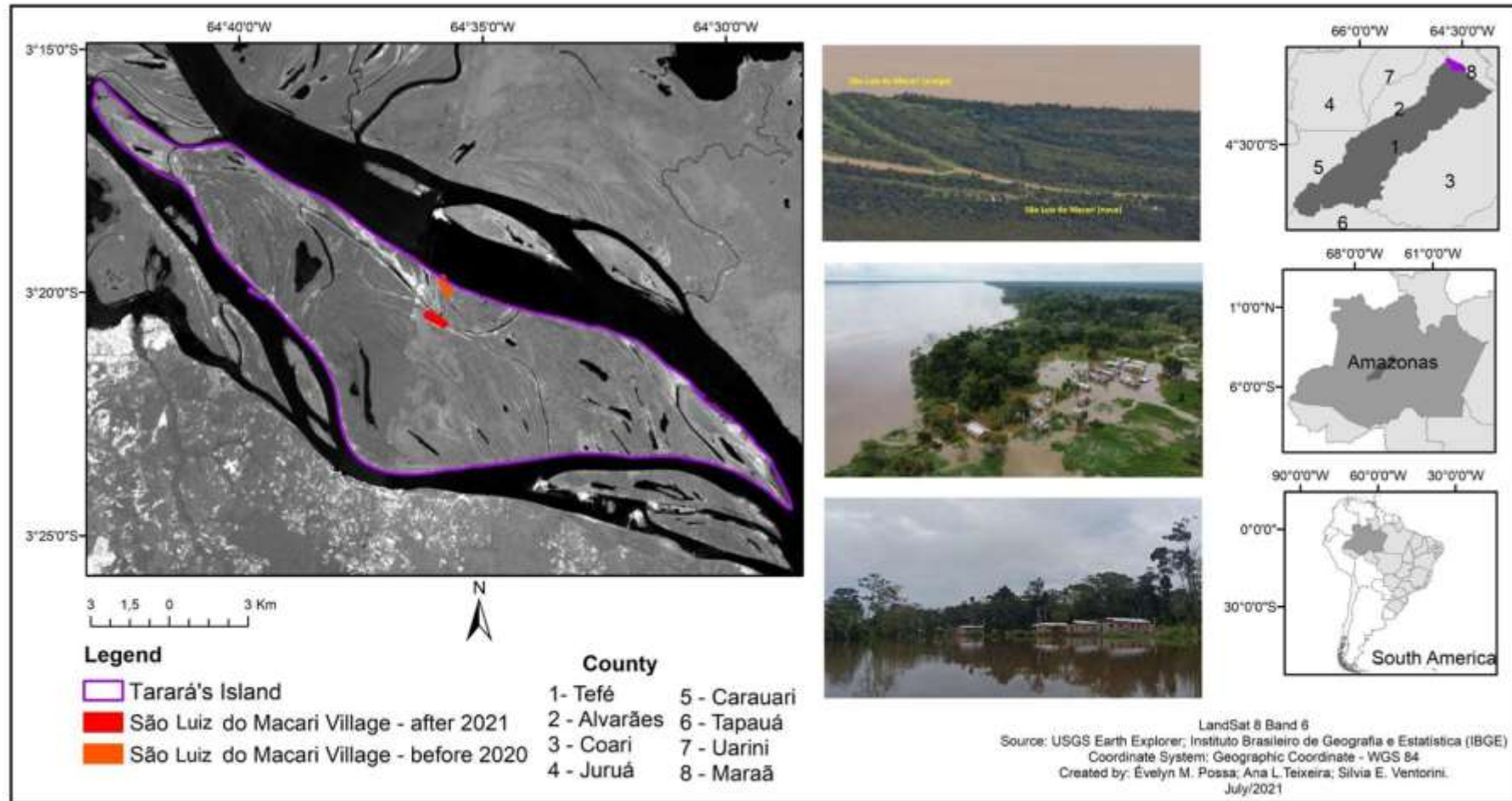
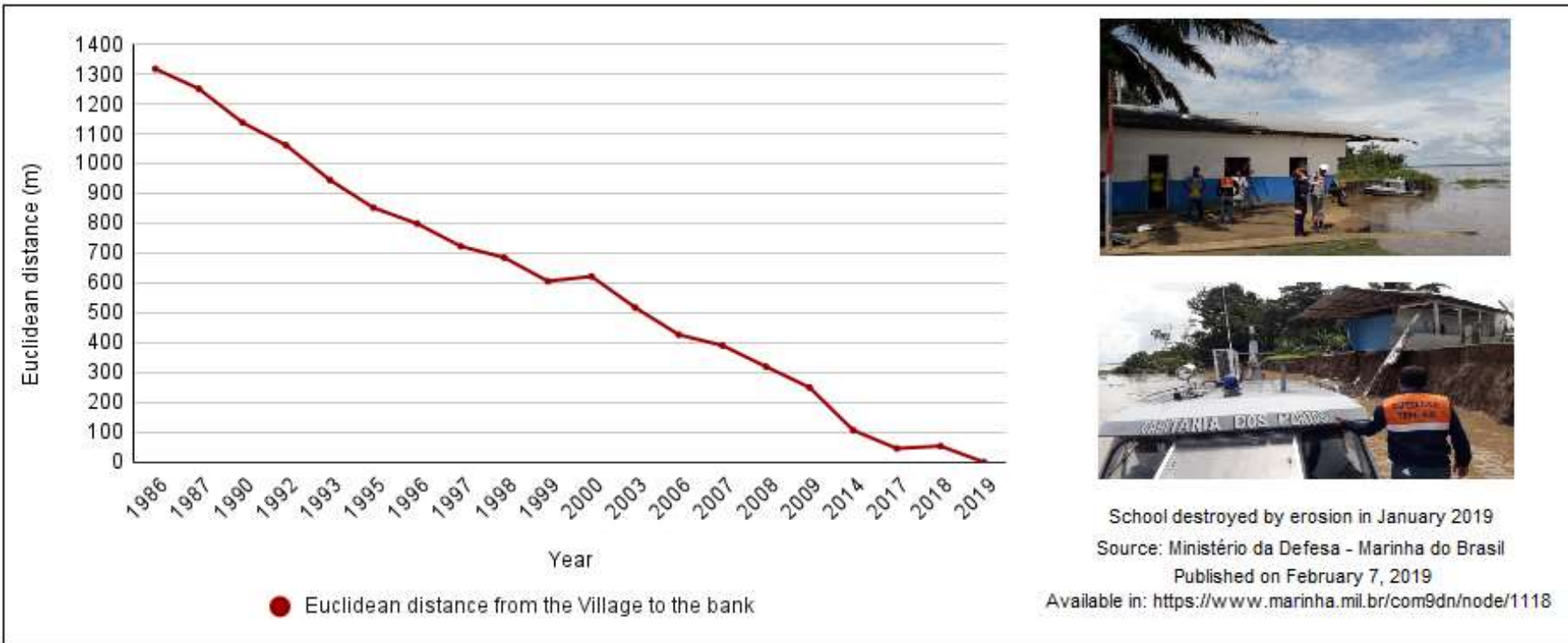


Photo: UAIGeo collection.

See more about this research in Youthmappers Blog: [UAIGeo in the Mapping of Riparian Communities in the Middle Solimões - Amazonas](#)

COMMUNITY OF SÃO LUIZ DO MACARI

More than 1 kilometer of fallen land over 33 years;



COMMUNITY OF SÃO LUIZ DO MACARI

Residents (and their homes) are moving gradually to the community further inland;



COMMUNITY OF SÃO LUIZ DO MACARI

Residents (and their homes) are moving gradually to the community further inland;



COMMUNITY OF SÃO LUIZ DO MACARI

Fieldwork to investigate the changing and other aspects of the region;



Thank you!

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