



**RESIDENCY IN SCIENCE, TECHNOLOGY AND SOCIETY (CTS)
HABITAT, AGROECOLOGY, SOLIDARITY ECONOMY AND ECO-SYSTEMIC
HEALTH: INTEGRATING POSTGRADUATE AND EXTENSION**

Andrade . Neder . Tostes . Wiesinieski . Aureliano . Pazos (Orgs.)



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Brasília, 2023

Liza Maria Souza de Andrade | Ricardo Toledo Neder
Simone Parrela Tostes | Livia Barros Wiesinieski
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BRASÍLIA-DF

2023

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PRESENTATION

This book aims to present the fundamentals and the basis of the multi professional course in CTS - Science, Technology, and Society in residency (Lato Sensu Graduation + Extension), characterized by a pedagogical practice and educational planning type PEX - research associated with teaching and integrated with extension. The proposal socially and territorially articulates three interdisciplinary themes: Habitat (Housing, Architecture, Urbanism, and Environment in the Countryside and the City); Agroecology (Food Sovereignty, Family Farm, Field, and City Integration); Health (Epidemiological Surveillance, Collective Health, Family Health, Sanitation, Ecosanitation, and Ecological Infrastructure) and a fourth transdisciplinary theme: Associated Work (Solidarity Economy, Training and Education, Occupation, Income, and Solidarity Technology).

The contents of the chapters were developed in the discipline of Special Studies in Technology, Environment, and Sustainability of the Graduate Program of the Faculty of Architecture and Urbanism of the University of Brasília (PPG-FAU/UnB), offered in 2021, integrated into the Extension Course Fundamentals in Science Technology and Society (CTS) - Habitat, Agroecology, Solidarity Economics, and Ecosystem Health, a partnership of the Science Policy Center, Technology and Society (NPCTS/CEAM/UnB) and professors of the Faculty of Architecture and Urbanism (PPG-FAU), the Faculty of Planaltina (FUP), the Faculty of Agriculture and Veterinary Medicine (FAV) and CDS/UnB, the Collective Health course of the Faculty of Ceilândia (FCE), the Faculty of Education (FE) and the Institute of Humanities (IH).

Thus, the process of construction of the Multiprofessional Residency CTS was initiated to form a transdisciplinary epistemological base in Solidarity Technoscience, inserting the University Extension in graduation studies, integrating 15 master's and doctoral students to more than 50 people from social movements, collectives, professional entities, government technicians, researchers and professors from other institutions as well as undergraduate students. The students were organized into working groups in the online meetings by the Teams platform, through which the following themes were discussed: i) solidarity technology, sociotechnical adequacy, and solidarity economy; ii) Freirean education and work; iii) territorial connections, social struggles and networks of solidarity; iv) sociotechnical adequacy for habitat production: spatial patterns in the field and the city; v) sociotechnical adequacy for agroecology and urban agriculture; and vi) ecosystem

health, sanitation, and governance, which make up the contents of the chapters of this book.

In the introductory chapter, it is detailed how the methodological process of structuring the course took place, divided into two parts: 1) theoretical-methodological foundations based on Solidarity Technoscience, forms of Technical Assistance, and the University Extension; and 2) political-pedagogical proposal of the course, including the themes, the territories surrounding the Distrito Federal that will be worked on the course, the curriculum matrix and the general functioning. Then Finally, the expected results and the developments already in progress are discussed.

The essence of the Residency consists in uniting Graduation And Extension in a trans-multi-interdisciplinary character with the vision of university public policy (opposite that of private or official philanthropy) offering vacancies for 35 trans-multi-disciplinary technical agents (managers, urban architects, lawyers, economists, sociologists, social workers, technicians, and engineers, community health agents), of which 28 will receive scholarships, and 14 territorial agents (2 agents from each of the 7 territories of the Distrito Federal and surrounding areas) able to act as multipliers of community initiatives, to provide sociotechnical advice to local entities and to articulate resources, people, entities, tools, and territorial tactics in seven territories surrounding the Distrito Federal in favor of the protagonism of subjects and groups in their daily territories.

The Lato Senu Course and the Multiprofessional Residency Extension Program CTS – Habitat, Agroecology, Ecosystem Health, and Solidarity Health (linked to PPG-FAU/UnB and the Extension Decanery – DEX/UnB) are being sponsored by the 2021 ATHIS Notice of the Council of Architecture and Urbanism of Brazil (CAU/BR¹) and with the parliamentary amendment of Mrs. Erika Kokay, directed to the payment of scholarships.

It also has the support of research and extensionist practices carried out by the Research and Peripheral Extension Group, emerging works within the matter of the project “Habitat production in the territory of DF and surroundings: urban and rural ecosystems and sociotechnical advice”, coordinated by Professor Liza Andrade, with drone images produced by engineer Valmor Pazos Filho, as well as with project “Digital Platform Cooperativism (prototype for seven territories of the Distrito Federal), mapping of actors, agencies and sociotechnical adequacy in rural and urban territories of production of the popular circuits of the economy – a CTS approach”, coordinated by Professor Ricardo Neder. Both projects are funded by the Distrito Federal Research Support Fund (FAP-DF).

Support was received from research and experiences of the Agroecology Center of

UnB, coordinated by Professor Flaviane Canavesi, of the Ecoplanetary project, coordinated by Professor Aldira Dominguez, and the Life and Water project in ARIS, coordinated by Professor Perci Coelho.

The list of modules below has the respective module: professors-coordinators and doctoral tutors of ppg/FAU/UnB of the Fundamentals extension course in science, technology and society (CTS) – Habitat, Agroecology, Solidarity Economy and Ecosystem Health.

-Solidarity technology, sociotechnical adequacy and solidarity economy - Professor Dr. Ricardo Toledo Neder - FUP/UnB; Tutor - Lívia Cristina Barros da Silva Wiesinieski;

-Freirean education and work - Professor Dr. Raquel de Almeida Moraes - FE/UnB; Tutor - Ana Luiza Aureliano Silva;

-Territorial connections, social struggles and solidarity networks - Professor Dr. Perci Coelho de Souza - IH/UnB; Tutor - Letícia Miguel Teixeira;

-Sociotechnical adequacy for habitat production: spatial patterns in the countryside and in the city - Professor Dr. Liza Maria Souza de Andrade - FAU/UnB; Tutor - Juliette Anna Fanny Lenoir;

-Sociotechnical adequacy for agroecology and urban agriculture - Professor Dr. Flaviane Canavesi - FAV/UnB; Tutor - Natalia da Silva Lemos;

-Ecosystem health, sanitation and governance - Professor Dr. Aldira Guimarães Duarte Dominguez - FCE/UnB; Tutor - Diogo Isao Santos Sakai; and

-Technical Support - Valmor Cerqueira Pazos - FAU/UnB - master's account FE/UnB.

¹<https://www.caubr.gov.br/athis-edital/>

The course has the partnership of the Nucleation of Residency AU+E UFBA/UnB, the BrCidades Network, the Housing-Advisory Network, the MST, MTST, Fiocruz, Oca do Sol and the following associations in the territories:

- Association of Powerful Women of Santa Luzia - Estrutural City/DF;
- Association of Residents of Santa Luzia - Estrutural City/ DF;
- Association of Residents, Fighters and Supporters of Dorothy Stang Residential - ARIS Dorothy Stang - Sobradinho / DF;
- Nature House in the Sol Nacente- ARIS Sol Nascente - Ceilândia/DF;
- ASPRAFES - Association of Farmers and Farmers FA - Small Rural Settlement William - MST - Planaltina/DF;
- APRACOA - Association of Rural and Artisanal Producers of The Oziel III Settlement - Pipiripau - Planaltina/DF;
- COOPERCARAJÁS - Carajás Agroecological Production and Marketing Cooperative - Brasília/DF;
- Quilombo Mesquita Renovating Association - Quilombo Mesquita - Western City/GO;
- Preserves Serrinha - REDE Association of Preservation and Sustainable Development of Serrinha do Paranoá - Paranoá/ DF; and
- National Coordination of MTST (working in Nova Planaltina - DF) and Coletivo Negro Raiz

SUMMARY

INTRODUCTION

Liza Maria Souza de Andrade, Ricardo Toledo Neder, Simone Parrela Tostes, Livia Cristina Barros da Silva Wiesinieksi. _____12

SOCIOTECHNICAL ADEQUACY AND SOLIDARITY ECONOMY

Ricardo Toledo Neder, Livia Cristina Barros da Silva Wiesinieksi, Emilene Eustachio, Iasmin de Sousa Jaime, Simone Parrela Tostes, Rafael Reis. _____53

Freirean EDUCATION AND WORK CULTURE

Raquel de Almeida Moraes, Ana Luiza Aureliano Silva, Laiane Tavares de Rezende, Antonio Carlos de Mello Rosa, Yasmim Whitney Moura Benjamin, Valmor Cerqueira Pazos. _____109

TERRITORIAL CONNECTIONS, SOCIAL STRUGGLES AND NETWORKS OF SOLIDARITY

Perci Coelho de Souza, Letícia Miguel Teixeira, Cinthia Mariane Nolaço de Oliveira, Clarissa Saporì Avelar, Gabriel Ribeiro Couto, Geraldo Fábio Alves de Souza, Juliana Leal Santana, Kamila Dos Santos Pita, Sarah Lima Cirino. _____149

SOCIOTECHNICAL ADEQUACY FOR THE PRODUCTION OF HABITAT IN THE FIELD AND IN THE CITY

Liza Maria Souza de Andrade, Juliette Anna Fanny Lenoir, Bárbara Helena da Silva Montalva, Camila Pithon Raynal, Cláudia Evie Akijama Goddard, Gustavina Alves da Silva, Ivan Lazaro de Oliveira Rocha, Juliana Furlanetto Pereira, Lélío Marcus Munhoz Kolhy, Lucas Mincaroni Neto Radatz, Luiz Souza Neto, Marina da Silva Ribeiro, Tamiris de Oliveira Machado. _____209

SOCIOTECHNICAL ADEQUACY FOR AGROECOLOGY AND URBAN AGRICULTURE

Flaviane de Carvalho Canavesi, Natalia da Silva Lemos, Acácio Machado Alves, Alcyjara Andreia Cruz de Lacerda, Antônio de Almeida Nobre Júnior, Camila Bezerra Nobre de Medeiros, Maria Consolación Udry, Letícia Lara do Carmo, Louise Marie Coelho Guerard, Nayane Karoline França da Fonseca, Thaís Tavares Beserra, Valmor Cerqueira Pazos. _____259

ECOSYSTEM HEALTH, SANITATION, AND GOVERNANCE

Aldira Guimaraes Duarte Dominguez, Diogo Isao Santos Sakai, Alba Evangelista Ramos, Camila Dias de Aragão, Erivan de Jesus Santos Junior, Gleice Kelly Campelo Barbosa (*in memorian*), Hisa Dutra Alves, Julia Maria de Oliveira Compan, Plácido Lima Ferreira Sobrinho, Satyam Bömer Dienstmann, Vinicius Araujo Gonçalves. _____283

Territorial Connections, Social Struggles and Solidarity Networks



Chapter 03

Authors:

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Gabriel Ribeiro Couto | Geraldo Fábio Alves de Souza | Juliana Leal Santana
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TERRITORIAL CONNECTIONS, SOCIAL STRUGGLES AND SOLIDARITY NETWORKS

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SUMMARY: This chapter is the result of discussions of the discipline of Fundamentals in Science, Technology and Society - CTS, which promoted the integration of knowledge about habitat, agroecology, solidarity economy, ecosystem health and urban and rural social struggles. The understanding of the concept of solidarity technoscience, which is in dialogue with the expression of social technology, is related to a knowledge that empirically seeks, in a simple and accessible way, to solve a problem of broad social impact through products, methods and processes of low cost and easy applicability, and can be replicated in community. The group that composed the course was formed by regular students of UnB graduation programs, special students and people from outside the academy, especially for their performances in their communities. The group was divided into six thematic groups, and the present work was developed by Axis / Group 3 - Territorial Connections, Social Struggles and Solidarity Networks - with the method of investigation and understanding of social technology theories, informational reach, sociotechnical networks and sociotechnical subjects.

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INTRODUCTION

The discipline of Fundamentals in Science, Technology and Society - CTS, despite being offered by the graduation of the Faculty of Architecture and Urbanism of the University of Brasília, due to the covid-19 pandemics, in the remote form, this experience was the first, and must be the embryo of a multidisciplinary residence. In this sense, it promoted the integration of knowledge about habitat, agroecology, solidarity economy, ecosystem health and urban and rural social struggles through exhibitions of thematic seminars and debates among its participants. In addition to the multidisciplinary faculty, it had the participation of UNB graduation students, predominantly of the Architecture and Urbanism course, and with members of the external community, especially social leaders and people involved in urban, rural, gender and racial struggles.

According to the concepts exposed and discussed in the discipline and that will be developed throughout this chapter, it can be considered beforehand that each individual who contributed to the debates and elaboration of this text is a subject-network within their action groups, a sociotechnical agent.

Science, Technology and Society - CTS is a type of knowledge that demonstrates, through academic investigations, that not only the science produced in formal academies, and universities, in fact, science and technology, but also popular knowledge and social technology, modalities of knowledge that need to be recognized and valued, and can even be used in the implementation of public policies that need to be better suited to the realities of society. The debates about the CTS also sought to reflect on the consequences of the hegemony of technical-scientific and academic knowledge and its consequences for society.

Often, hegemonic technology, disseminated as the only correct one, comes only to refer to patterns of consumption of food and products harmful to individual and collective health, but that serve the interests of dominant economic groups in the landmarks of capitalist consumer society. Aligned with such interests, hegemonic science generally operates for the benefit of market power, as in situations where science reveals that the consumption of certain foods is harmful to health and, subsequently, through market pressures, denies such information.

However, popular and counter-hegemonic knowledge has always existed in parallel, and in this global era, through the expansion of forms of communication, they were strengthened through sociotechnical networks, and human connections that rely on technology to unite sociotechnical subjects. In group 3, the work was coordinated by

the professor of the social service department of the Institute of Human Sciences of the University of Brasília, Perci Coelho de Souza. The professor proposed a dialogue between social technologies - the essence of the discipline of CTS Fundamentals - and his work of analyzing social relations from a new non-technological sociotechnical condition (in the reductionist sense of the term, of "hard" technology), which he has developed since the mid-2000s, based on French Marxist theory. The concept of network is worked by Professor Perci Souza from the perspective of the Informational Revolution proposed by Jean Lojkin (1999) and Paul Boccara (1984), and confronts some proposals of Manuel Castells (1999). The network is understood as a socio-technical condition of the dynamics of capitalist accumulation in the current moment.



Figure 35: network image of individuals. Own elaboration, 2022.

According to Professor Perci Souza (2006), this puts us immersed - considering the concept of subsuming work to capital - in a logic of disorder of value production. If capital does not have living work, individuals (not the work of machines, which is not alive) conditioned to networks, will not be able to produce value. It needs to free the workforce of its productive potential in a network. That is why large companies have their headquarters in developed countries and production in underdeveloped countries in Asia or Latin America.

This perspective confirms the network as a socio-historical imperative, not technological. Capital is the social relationship of classes – the producing class and the capital gains extraction class. But the conditions are no longer industrial, but digital.

This relates to the territory as we understand it as an expression of the social relations objectified in space. That is, overcoming the ancient geographical notion that understood the territory only as a part of the land, physical space in which the State is concretized– a basic understanding of the territory linked to the geopolitics of the configuration of the National States still in the nineteenth century. The “used territory” term, created by the philosopher and geographer Milton Santos, refers to a territory that had its dynamics historically made by the social battles of the groups, and it is a central theme that reveals the conflicts that globalization and liberal capitalism of the 21st century have imprinted on the less affluent classes. But these, with solidarity and creativity, have survived with resilience to the injustices of every order: lack of opportunities for education and employment, lack of decent housing and even the restriction of access to food and water. Against all this, the poor population has been learning to “fend for themselves,” but, as highlighted by Milton Santos (2000) in his book *For Another Globalization*, the poor class is aware of its exclusion from the upper circuit of the urban economy, where there is formality, legality, CNPJ, institutional and governmental support, the middle class, which lives in competitiveness, individualism, and low solidarity, still maintains the illusory belief of achieving a status observed in the more affluent class.

The lower circuit of the urban economy, where informality is observed, the improvisation of solutions, is often criticized by the middle class, which is not seen in this same process of cruelty and low solidarity. Milton Santos (2000) speaks about the perversity of globalization that popular culture has been learning to avoid, because scarcity teaches. The illusion of the ambitious ostentation of the middle class is used against itself as a mass of maneuver to legitimize the interests of those who have been in power for centuries and want to remain with their privileges, deceiving everyone with the discourse that everything is right, providing mistaken judgments about perfection that is never achieved.

Another concept of Milton Santos is the “concentrated region,” which deals with the scientific-technical informational device that, from the end of the 20th century, began to connect the space of social relations. This has to do with the material platform that sustains the internet. Professor Souza then develops the idea of informational reach that:

it supports all informational urban relations and tends to convert and converge all the old bases of support of urban social relations. It becomes, therefore, the process of subsuming the urban material space to the new immaterial condition of the city information networks, especially through telematic networks. This new urban condition succeeds the urban-industrial pattern, becoming the new urban-informational condition (SOUZA, 2006. p. 103).

Thus, there is no separation between the public sphere and the sphere of production. The dynamics of social struggle take place through networks. It is important to highlight that these are not metaphorical, normative, or methodological networks: they are networks due to the historical condition that capital has come to assume. There is, therefore, a sociopolitical conditioning factor, but also potential for the dissemination and action of social struggles. The very execution of this virtual mode CTS discipline demonstrates this theory.

Through the communication networks (e-mails, social networks, virtual applications, etc.) it is possible to connect the “nodes” that Souza (2006) conceptualizes as collective equipment and services connected by these virtual means. Nodes can also be understood as institutions connected by these information networks. From the moment that there is information exchanged between two nodes – a source and an information receiver – it paves the way for a set of other informational interactions that will form a circuit that, as a whole, creates a social network that is the constituent of an informational reach of a geographical space. The possibilities of the informational reach as a space of politics and immaterial production are very wide, and from some cases brought by the members of group 3, we seek to analyze and interpret how they occur in these practical cases.

FUNDAMENTALS IN SOCIOTECHNICAL ADEQUACY AND SOLIDARITY ECONOMY

In order to democratize access and production of knowledge through the new sciences, it was necessary to address the foundations of solidarity technoscience, which the main source adopted were publications by Renato Dagnino, a pioneer in solidarity technology and CTS (Science Technology and Society) in Brazil. The solidarity economy is an autonomous way of managing human and material resources with principles of solidarity, self-management and economic viability.



Figure 36: solidarity economy scheme.
Source: <https://economia.culturamix.com/medidas/apresentacao-da-economia-solidaria>. Adapted by the team.

Technoscience is understood as the knowledge acquired by a social actor for the production of goods and services, but in this chapter, it is treated as solidarity, because its model is self-managed and is based on the collective ownership of the means of production, where material gain can be appropriated according to the collective's decision. It is a combination of science, technology, culture, and beliefs, the result of attempts and failures. There are attempts that work out at improvements made on a product or service are right.

This technoscience presents a bias oriented in the intention of generating knowledge for the production of goods and services, capable of promoting the sustainability of solidarity enterprises that are emerging within the Brazilian peripheral capitalist economy (DAGNINO, 2019). Solidarity technoscience enables the strengthening of the production forms – associated and self-managed – based on the collective ownership of the means of production, typical of the solidarity economy.

Cognitive policy, controlled in a hegemonic way by the scientific elite, rarely benefits the social actors who maintain the science produced by it (from the collection of taxes). Opposite to the thought (which still hangs even in the left-wing) that it should be expected neutral technoscience that replaces this, currently contaminated by capitalist values, the proposal of Sociotechnical Adequacy is to “contaminate” the spaces of production of goods and services through sociotechnical agents, with an alternative production style of development and with the values and interests of social actors, who will benefit the most from its implementation. For this, it is a fundamental activity of awareness within

these public institutions, so that there is an expansion of these spaces and dispute for the hegemony that will lead to their reorientation (DAGNINO, 2019).

It is important to clarify that it is not interesting that conventional technology, which develops in academies and industries as high technology, disappears, but that social technoscience is supplemented to this technology with the proposed new model, a more democratic model. The economic-productive agent that will ideally take the place of companies is understood as an interested and participant in the design and use of the technology necessary for the production of goods and services. The solidarity enterprises, in this conception, assume an active character, of an agent interested in the concept of technology, in the sense that it incorporates its interests and values, well different from that passive one still predominant in certain circles (DAGNINO, 2014).

Sociotechnical Adequacy (AST) is a process within alternative technologies that, in addition to the results obtained, prioritizes the procedures of construction and adequacy of a technological resource. It must be based on action research to be, in fact, effective. Therefore, sociotechnical agents should consider the technoscience already used in the territory, without expropriating the knowledge of social actors.

According to Dagnino (2019), there is a difference between replication and reapplication of technologies. The reapplication presupposes a high proportion of operations and appropriation of technology by the community. It involves the community in a participatory and compensatory way in direct (income) or indirect (improvement of quality of life, etc.) types. The reapplication of technology is sociotechnical adequacy which can also be defined as “empirical and spontaneous know-how which mixes with technical knowledge and generates a third process of incorporation, which differs from the previous ones, which we call sociotechnical adequacy” (NEDER, 2015).

Work, occupation, income, social technology and solidarity economy

Dagnino (2014) establishes, in his article *Social Technology and Solidarity Economy: building the bridge*, a relationship between social technology and solidarity economy, understanding the need to establish a link that connects these two fields of knowledge that, for the author, were separated. Social technology is such a broad concept that it has academic references and even from organizations such as SESC and Rede Globo, so it considers it a polysemic term that was, in a way, appropriated by the right-wing.

According to Renato Dagnino (2019), solidarity enterprises need social technology, which is the search for experiences that involve the interaction of people from a community

in favor of solutions to everyday problems, which often go unnoticed and without recognition. They are characterized by the collective ownership of the means of production, by the self-management work process, and by the need for a formal scientific basis, since the processes of exclusion generate social technology. Thus, the popular protagonism of social technology is basic for understanding its essence and the need to establish recognition of the informal sector of the economy.

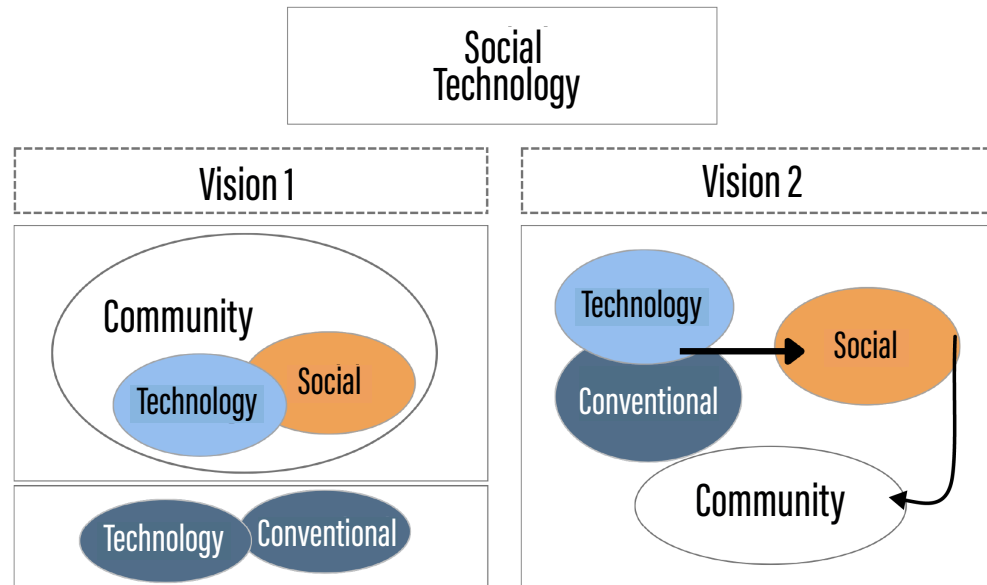


Figure 37: Visions which the concept of TS are based, according to Duque and Valadão (2017). Adapted by the team.

From the need to question the myths of the neutrality of science and technological determinism, Dagnino (2019) advanced on the concepts of social technology and solidarity economy elaborating the concept of solidarity technoscience. Dagnino (2019) defines the concept of solidarity technoscience as a cognitive result of the action of a collective of producers that organizes itself in order to create resistance to performing a work process in which socioeconomic context engenders solutions directed to the collective ownership of the means of production. These forms of resistance come from a social agreement – which legitimizes associations as a way of defending and fighting for common social interests – and influence the productive environment, either aiming at control (self-management), or under cooperation (participatory volunteer). This process causes a change in the generated product, whose material gain may be appropriate according to the decision of the collective

of a solidarity enterprise (DAGNINO, 2019, p. 63).

The geographer Milton Santos (1979) created a theory called “Circuits of Urban Economy” to explain the process of urbanization in peripheral countries, using the concepts of the upper circuit and lower circuit of the economy. Without making confusion with the terms, because it is an incorrect simplification to call informal economics a lower circuit, the theory of the two circuits of the urban economy seeks to explain how cities in peripheral countries such as Brazil have two subsystems of urban economy: the superior subsystem – composed of large companies, financial and high-tech activities – and the lower subsystem – composed of activities with the use of labor intensive and informal, that have no support from the formal economy.



Figure 38: Lower and upper source economy circuits. Source: Perfifau, on youtube. Video: https://www.youtube.com/watch?v=1nBCsL_px5w.

When we think of popular socio-technical knowledge, there is a connection with this lower circuit of the economy, which is actually what guarantees the survival of a large part of the population that is far removed from the reality of formal employment.

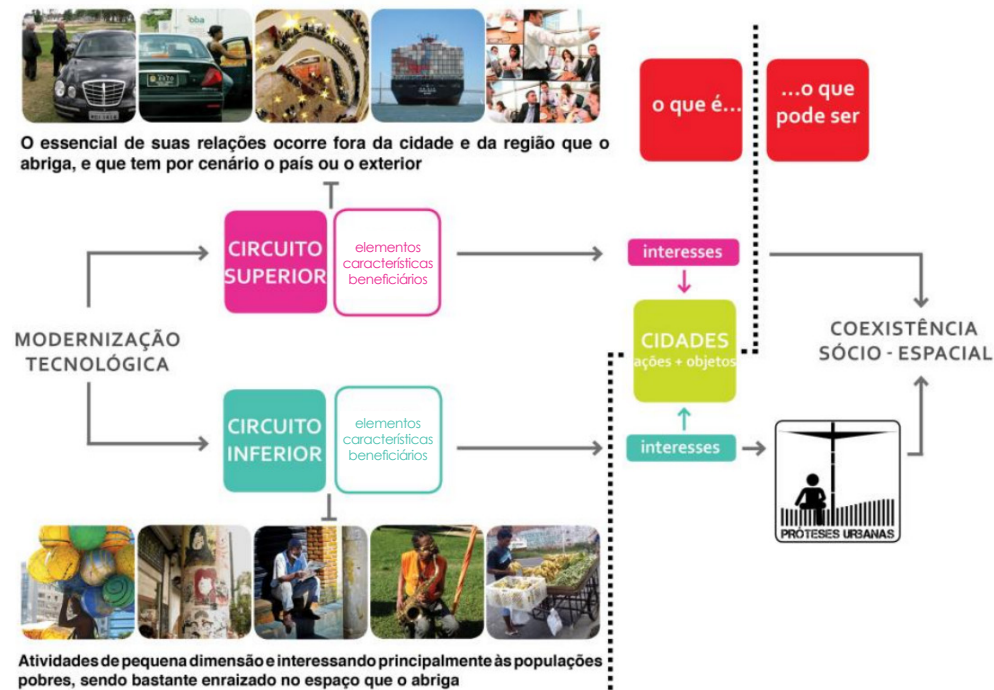


Figure 39: Lower and upper economy circuits. Source: NASCIMENTO *et al*, 2010. Available from: http://www.nomads.usp.br/virus/virus04/project/virus_04_project_2_pt.pdf

In informal territories and in the circuit environments of the popular economy, there is no traditional legal, fiscal, financial and banking certainty. The work and the provision of services and exchanges take place frankly, and even credit is shared by bonds of the neighborhood, tradition and habit of loan partnership and friendship. This orientation is shared by the Brazilian experiences of creating microprojects demanded by groups and neighbors community in ordinary neighborhoods to access currency and social resources through community development banks.

In popular territories, the right to the city and housing is equivalent to the creation of the right to social technology, understood as a dominant of self-managed forms of production through the associated work of communities. In the city, under the historical characteristics of the so-called self-construction and its organizational forms, this domain of the productive cycle over the sociotechnical conditions of organization of leaders, social and popular movements, can be promoted by semi-structured projects of teaching-

research-extension in the form of multiprofessional residence.

Sociotechnical adequacy and sociotechnical advice for territorial connections, social struggles and solidarity networks

Considering the Sociotechnical Adequacy (AST) as a stimulator and bridge between technology and society, in a process of integration of technical knowledge with the popular and empirical know-how, which merges with the process of incorporation and redesign (DAGNINO, 2019), in addition to the sharing of generating codes among the subjects, the concept of "pedagogical and sociotechnical interactionism" (NEDER, 2013) is generated. According to Dagnino (2019), these processes assume a strategy that involves awareness, mobilization, participation, and empowerment of popular movements and emerging counter-hegemonic collectives, which build powerful networks and tactics in the territories – understanding the territory as a used territory (SANTOS, 1999), a space practiced by the feeling of belonging and having an identity – constituting through the demands, identities and existing knowledge, involving and potentializing communities and territorial connections in a participatory manner. Therefore, sociotechnical adequacy, according to Neder (2013), is understood through the condition of incorporation of knowledge by social groups and people, so that they can only change and transform reality.

This exchange of knowledge between the subjects is made mainly through sociotechnical counselings in the territories, which have an important role in the articulation and involvement of these networks and connections, aiming to achieve solidarity technoscience, developing active social technologies in an interdisciplinary, transdisciplinary and which grows with communities. This advice, in the area of Architecture and Urbanism, for example, already arises through a strong articulation between social movements of struggle for housing between the late 1970s and the beginning of the 1980s, in direct actions of land occupations and land regularization in search of urban improvements. In this context, sociotechnical counseling assumes that there is a political-cognitive and ideological reality in the various groups and social movements and creates bridges between communities and sociotechnical subjects, giving potential to the multiple networks and relationships with their territories in the adequacy and socio-technical democratization. The important thing is also to consider that sociotechnical advice is a two-sided path for those who offer the service, because it also receives a lot of practical knowledge from the counselor, in a Freirian line that those who teach learn to teach, and who learns teach when learning.

Quem ensina
aprende ao ensinar.
E quem aprende
ensina ao aprender.

Paulo Freire

 PENSADOR



Figure 40: Source: www.pensador.com

Topics that will be addressed in the modules of the CTS Residence

The residency in Science, Technology and Society - CTS provides for the integration of knowledge related to habitat, agroecology, solidarity economy and ecosystem health, and specifically related to the topics addressed: territorial connections, cultural issues, identity, right to work, informality, political participation and social movements; agrarian reform, agroecology, politics and well-being; governance, health, sanitation and environment, SDGs, self-built production, microplanning, resilience tactics, affective cartography of action and patterns of organization, micro-basins and popularization of geoprocessing, community ties, gender and racial affirmation, privilege recognition, combating sexism, racism, homophobia, protection of traditional knowledge.

METHODOLOGICAL PATH

After weeks of initial exposure to the theoretical references of the disciplines, with synchronous virtual classes (due to the pandemic of covid-19) of professors Renato Dagnino, Ricardo Neder, Liza Andrade, Perci Coelho de Souza, Raquel Moraes, Flaviane Canavesi and Aldira Dominguez, the group began to develop the skeleton of a chapter. This material is a record to share experiences of exchanges between the sociotechnical subjects of regular students and actors of different social movements, who met to discuss the theme of Group 3, the discipline and course of Fundamentals in CTS. Although there is a predominance of architects and engineers in the group, with a greater objective of contributing to the formulation of a multidisciplinary residency extension course in the

area of social technology, the exchange of experiences allowed us to understand that many sociotechnical subjects were not formed exclusively by direct professional practice in their fields of activity.

Professor Perci, group 3 advisor who presented his Life & Water Project for ARIS 2020/2022, which has been happening during the covid-19 pandemic with virtual meetings and WhatsApp group permanence, was able to exemplify the structuring parameters of connectivity, accessibility, and political direction that experience has demonstrated. Many of the members of Group 3 are also part of the collective BR Cidades, a DF nucleus, which constitutes a sociotechnical network due to the articulations for exchanges of knowledge and experiences involving people from academia, social movements, public institutions and the third sector.

The methodology guided by Professor Perci was initiated with the elaboration of a form for identification of the network subjects and their social struggles, which were connected through Groups of WhatsApp. This strategy was based on the work developed since his doctorate, about which he was mentioned in the introduction of this chapter. The form was made available digitally to Group 3 participants on the Google Forms platform. There were questions divided into six thematic groups, in order to allow the characterization of the network subjects that integrate different social struggles.

Each participant brought an experience, to which we sought to expose the potential and how their network connections occur. This starting point allowed us to analyze who are the socio-technical subjects and the network subjects. The following framework is the answers found in the questionnaire that allow the characterization of our group.

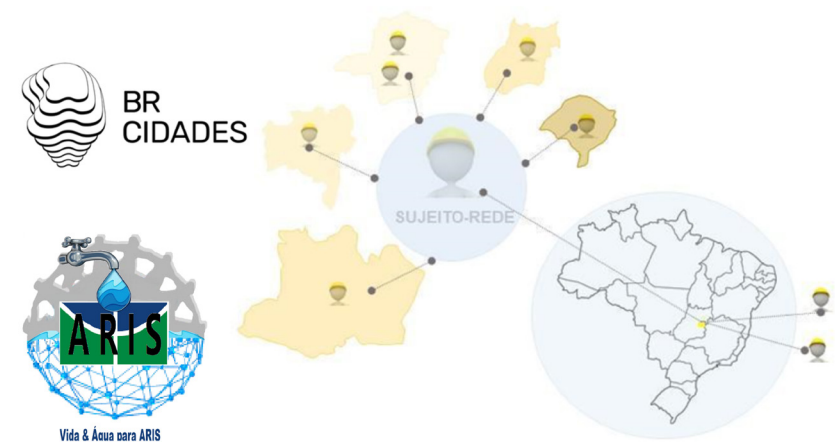


Figure 41: BR Logos, Cities and Life and Water project for ARIS, and schematic representation of the territorial distribution of the group/Axis 3 network subjects in the national territory. Although gathered from the Distrito Federal, the origins are from various locations in the country. Source: authors, 2021.

Network Subject Identification

The informational reach is cited by Souza (2006) as the new territory of social interaction – immaterial and not physical, but intuitive – and as a means of constituting informational circuits and connecting “us” of publicization and expansion of cooperation, productive and political networks. This communication network takes the physical space of relations established between network-subjects for a new modern spatiality, divergent from the traditional urban environment and its interactions, and which is now established through a virtual reality capable of having greater informational and strategic reach in favor of cooperation between groups and social struggles, becoming an effective instrument for discussions and decisions made by public opinion.

The purpose of this work is to understand how the network subjects consolidate urban social relations with space through the immaterial/intangible condition of information networks, with emphasis on the use of communication applications as a model to support the social bases that are currently established.

For the identification of the subjects by the research, criteria such as gender, schooling and relationship of the individual with the territory were analyzed. The research refers to the clipping of indicator sets from the interaction of the subject-network with the Internet, for the monitoring, sharing of information and interaction of groups and organizations, and to promote the discussion of topics raised and relevant nowadays. It was identified as a gender of greatest representativeness of this female network-subject, with higher education in Architecture and Urbanism. Other formations mentioned were also in the area of Engineering and Pedagogy. Most of the group resides in the Distrito Federal, and only two individuals are in other federative units: Anápolis, Goiás and São Paulo (capital). However, most individuals live in federative units different from that of their birth, as shown in Figure 41.

Through the collection of information from the network subjects, the effectiveness of the cyber net environment could be verified as a new social space where connection networks are formed for monitoring and cooperation to exchange information about network activities.

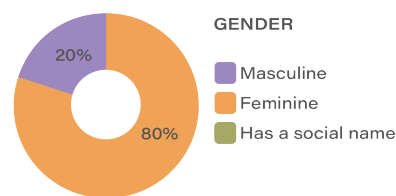


Figure 42: Result of the forms of the characterization of the subjects-network in social struggles. Source: authors, 2021.

Perspective in the Territory

The diagnosis obtained from the subject’s perspective in the territory showed that the majority evaluates their place of residence as satisfactory or very satisfactory for the provision of basic sanitation services (water supply, urban cleaning, urban drainage, solid waste and rainwater management), telephony (fixed with broadband, cellphone), teaching equipment (daycare, elementary school, middle school, high school, higher education, and graduation), urban mobility (bus, applications, taxi, light vehicle on rails - VLT, subway, bikeways), emergency service (hospital, fire station, police station) and entertainment equipment (bars, restaurants and shopping malls), but are divided as to the equipment of culture and entertainment (newsstand, cinema, theater, museum, pay TV) and prayer or meditation.

HOUSING ASSESSMENT

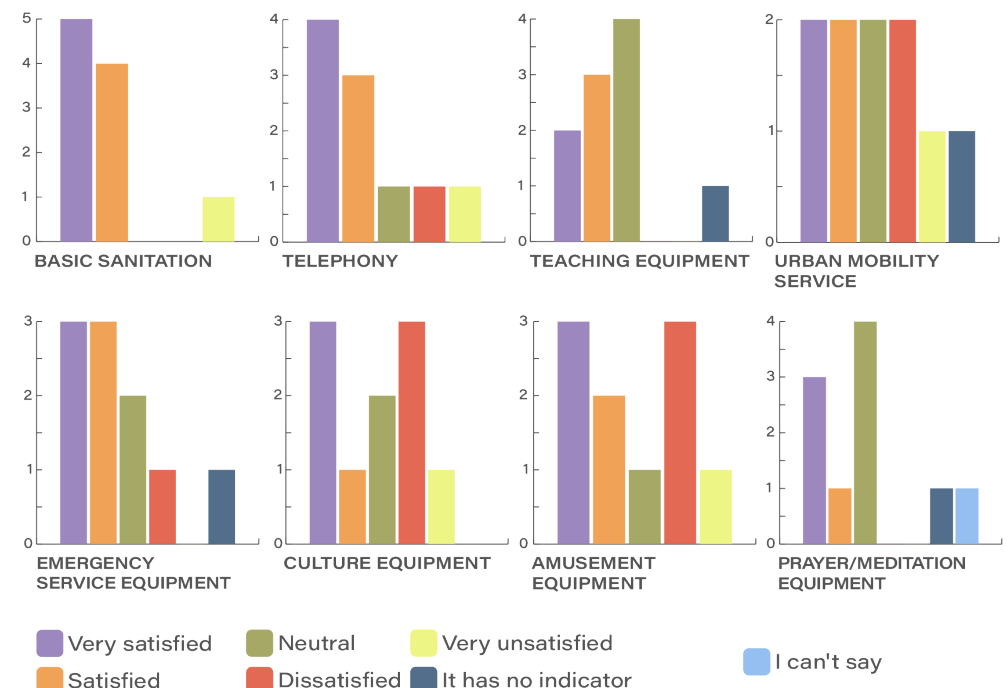


Figure 43: Result of the characterization forms of the network subjects in social struggles regarding places of housing and work and infrastructure and equipment services. Source: authors, 2021.

When the questionnaire is directed to the workplace, the network subjects, in percentage terms, check evaluations in the same pattern as the place of residence, except for the equipment of culture and entertainment, in which evaluation indexes did not indicate a predominance of positive or negative consideration, ranging from very satisfied to very dissatisfied. And of the fun equipment, half considered themselves satisfied or very satisfied, and the other half, dissatisfied or very dissatisfied.

Social struggles

The action of the subject in social struggle movements was molded by the dominant typology in environmental/socio-environmental movements, followed by the housing of social, feminist, black and homeless workers (MTST). Most of them worked less than 6 months or more than 24 months, and the subject's relations with the movement are divided into: half who declared to establish a social-based relationship, and half - indirect professional counseling - who presented motivations of personal subjective order and the dominant scale in a local municipal character, which may mean that the motivations articulate more personal interests than work and that most subjects have more affinity with their surroundings, although they are engaged in social struggles - despite the scenario of social segregation in which they live.

TYPE OF SOCIAL MOVEMENT IN WHICH YOU PARTICIPATED THAT WILL BE THE OBJECT OF THE NARRATIVE IN THE RESEARCH



Other options that were not marked: Indigenous movement; Movement LGBTQIA+; Labor movement; Student movement; Movement by right to housing, against evictions; Rural Workers Movement Landless (MTST)

Figure 44: Result of the characterization forms of the network subjects in social struggles regarding the type of entities. Source: authors, 2021

The experiences reported were as follows: Jardim Esperança Association, in São Paulo; Collective Territorial Term Project; Movement around the recovery of Ribeirão Sobradinho; OCCUPATION CCBB; ATHIS Brasília; Moura RRP; Guardians of the Environment; and racial and educational struggles.

Subject-network digital connectivity

The scenario of social distancing imposed by the health crisis of the covid-19 increases the need for digital connectivity of the subject-network, a condition revealed by the answers of the group members, who sought to demonstrate this condition. The information obtained by the form revealed that seven of the ten members have an average daily time of more than four hours connected to the Internet. Of these ten members, nine use WhatsApp as a connecting device with social networks linked to their movements, which explains the informational and operational reach of the sociotechnical network in the current pandemic scenario, which limits and prevents throngs and contact in the territories. However, at the same time, it allows effective network connectivity with different subjects, as explained in the data collected, which indicates that the largest portion of the members groups has more than 30 people.

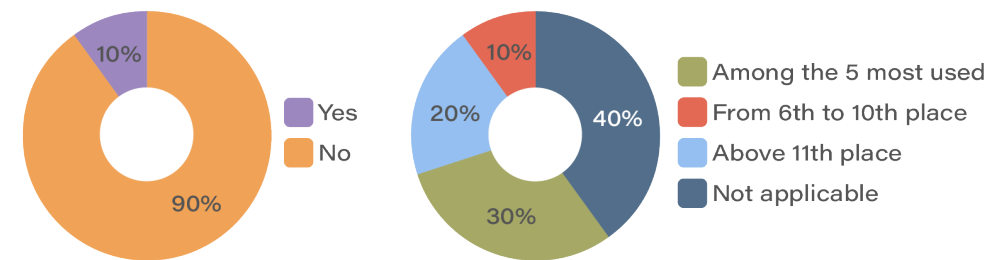


Figure 45: Result of the characterization forms of the network-subjects in social struggles, demonstrating that in 90% of the WhatsApp cases are used as a connecting device, but in the second graph the WhatsApp groups related to the chosen movement occupy what place in their ranking of the most used DAILY? Considering the period of validity of your participation in the movement. Source: authors, 2021.

The information obtained shows WhatsApp as the main connectivity tool, but other data show that the groups of the platform related to the movements listed by the members occupy varied positions in the rankings of the most used daily. That is, the connectivity factor presents the most unequal data among the members, which reveals different types and powers of engagement and relationship with their movements, and reinforces the character of the informational reach under social movements today.

Subject-network accessibility in their digital circuits

The accessibility of the network subjects through the networks of message applications was a starting point to think about the experiences of the sociotechnical subjects. Focusing on the use of WhatsApp as a means of communication and exchange of information between the network subjects and movements, four forms of interaction were specified in the form: (i) use of the application for listening and monitoring of publications in the movement group, representing 50% preference of respondents; (ii) use of the application to share information authored by third parties, with 40% representation of responses in the chart; (iii) use of WhatsApp for external sharing on other networks about group information in the application, representing 10% of responses; and (iv) use of WhatsApp to produce self-authored information. There were no answers or identification regarding the alternative (iv), and another interaction option through WhatsApp was not expressed, giving the understanding that all respondents feel covered by at least one of the options.



Figure 46: Result of the forms of the characterization of the network-subjects in social struggles, demonstrating information exchange activity via WhatsApp with the movement during the period in which he participated. Source: authors, 2021.

About the collaboration between network-subjects and movements, and the impacts that have accessibility in digital circuits for updates, communications and exchanges. This model ensures the possibility of sharing content formulated by a group member (or by others) that may allow the understanding of the context more comprehensively, including being possible to ensure the involvement and sharing of information on other networks. Among the main positive impacts of the contribution of the network-subjects to the movements, the fast exchange of information made possible by digital networks such as WhatsApp is the one that most strengthen the collective. Highlighting some points accentuated in the individual responses, the ability to involve a large part of the team and leadership in one place was cited, and although not all beneficiaries of the movement have access to telephone or applications, it is a digital mechanism that involves the team, even if it does not reach its audience in a majority way.

In another case, from the sharing of information by the application, collaborative mapping processes are carried out with the participation and contribution of those who are in the group. Positivity is demonstrated regarding the use of the application as a way of exchanging information and as a way of keeping the team aligned and organized in the activities developed by the movement. In another contribution, a positive appreciation is presented about the articulation with the group, which also enables the strengthening and empowerment of movements such as the one of the black population and also of people with different incomes and experiences and their individual views of the world.

It was found that, in general, the use of the WhatsApp application as a tool for contribution and interaction of the movement is positive, being useful for exchanging knowledge, empowering individuals, engaging with actions within the movements, positioning, and discussing on topics pertinent to the group's actions.

Political Directness Device

We sought to raise the main negotiating agenda of the movements, with the possibility of including them as a struggle for equipment/public policies of human and social rights; recognition of the identity of minorities; alternative to economic or social policy order; alternative to ethical standards (corruption) at different proportions of the State; right to housing with land regularization; and environmental awareness for the preservation of natural resources.

Four struggles were identified, most of them by human and social rights equipment/public policies. The descriptions of these struggles included issues such as the promotion

of safe housing, combating forced removal, promoting public policies that advocate racial rights and equality for blacks, and promoting rights for people in conditions of social, sanitary, and housing vulnerability caused by the covid-19 pandemic, in a set of initiatives contrary to the policy of social hygiene and exclusion to which the various social segments are subjected.

One of the representatives of Group 3 is inserted in a movement to fight for the right to housing with land regularization, which tries to promote the collective ownership of the land dissociated from the individual property of the houses of those involved.

Another fight identified was environmental awareness and preservation of Ribeirão Sobradinho, in the Distrito Federal. And finally, there is a record of a movement of the struggle for the recognition of the identity of the Banto culture, its knowledge and struggles in various territories.

The last survey of the questionnaire sought to know the ideological affinity of the social movements approached by the members of Group 3 in relation to the categories: radical right; center-right; center; center-left; radical left. There was also the possibility of ignorance or non-application of this framework. The answers are shown in Figure 47.

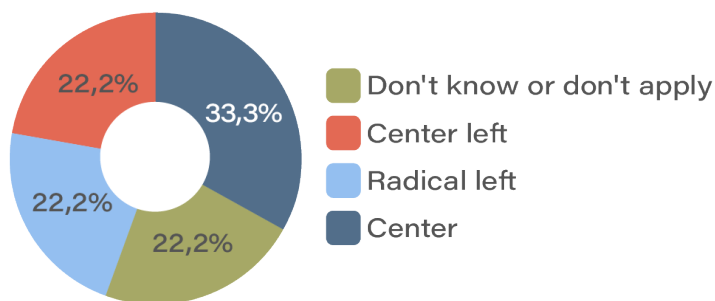


Figure 47: Result of the characterization forms of the network subjects in social struggles, demonstrating the main point of the negotiating agenda during the participation period. Source: authors, 2021.

Commenting on the previous question, group 3 members made considerations in a broad spectrum of possibilities. There were answers about the lack of political direction of those who were talking about environmental movements, some consider that there are participants from various political directions, while others define it as a movement without political positioning. Some have related the political direction indicated as support to the

public authorities with a view to guaranteeing a certain right, and not as an explanation of its own political-ideological position or the movement in which it participates.

One of the group's participants commented that social struggles, race struggles and educational struggles are not political, but to "prove and say that I am a human being, regardless of my skin color." The question of political direction also incited a commentary on intense and unequal dispute in the territory and strong resistance.

On the other hand, there was an explanation that the answer given was related to the fact that the movement was anticapitalist and in support of minorities and still marginalized groups. Finally, one member said he had associated the movement with the center-left, even though there was no explicit statement about it. The classification was attributed to being a struggle that makes counter-hegemonic propositions in a capitalist reality, but it is not a revolutionary struggle, which is fought against the status quo and private property.

EXPERIENCES IN TERRITORIES

The group brought six experiences that include issues of urbanization, self-construction, technical advice for housing solutions, urban struggles, issues of tradition, environmental, gender, and racial and their connections through networks. In addition to the information extracted from the questionnaire, the experiences described in this chapter sought to relate the concepts presented by Professor Perci with each of the cases, in order to exemplify the theory and dialogue with it.

Case 1 - Practical Project in ATHIS Araras: Jardim Esperança Association

Description and contextualization

The Practical project in ATHIS Araras is the result of a public call of the Council of Architecture and Urbanism of the State of São Paulo (CAU/SP) in 2021, which consisted in the formation of a professional field to act in technical assistance for housing of social interest in the countryside.

The institution Projeto Generations is a non-profit organization that works in partnership with the Federation of Community Associations of the State of São Paulo (FACESP) in the formalization and organization of groups of people in vulnerable situations, in addition to promoting professional training courses. It was one of the organizations contracted by CAU/SP in this notice.

Among the associations registered in FACESP, the selected was the Jardim Esperança settlement, which for four months will receive advice from thirty architects, remunerated by CAU/SP, to produce a dossier in the process of land regularization and housing improvements with the municipal government.

The community fights for the right to decent housing in the municipality of Araras, in the state of São Paulo. Formed by "Ararenses", it settled with improvised shacks in a space that was once the disposal site of stolen vehicles and debris, an area of a decommissioned railway line of the São Paulo S/A Railway (FEPASA), on the banks of the São João Plant, in 2010.

The work methodology involves data collection of historical, legal and socioeconomic data, technical visit to the occupation (to recognize the area and its residents) and workshops with the participation of all of the community. This first part of the activity was carried out in a training course, also promoted by the Generations Project in partnership with CAU/SP, during the months of August and October 2020. The result of data collection and analysis provided the starting point for the projects and for the preparation of the REURB-S requirement.

Description and contextualization of the territory

The area of occupation is in the rural area (Figure 48) and belongs to the Union, which, sought by the municipal government, expressed interest in passing the area to the Municipality of Araras. At the moment, the documentation issued by the Superintendence of The Union's Patrimony (SPU) is awaited to prove the transfer.

Composed of fifty-six families distributed in the extension of one kilometer, the occupation does not have access to basic sanitation services. The distribution of drinking water was started in 2015 by the help of a tank truck, twice a week. Access to electricity comes from alternative sources such as photovoltaic panel, battery and generator.

The health center where residents seek care is 15 kilometers away, and everything is carried out there, because the hospital is even further away. The state public school is 12 kilometers away, and to be able to move these students with municipal bus it was necessary to set up a camp in front of the City Hall.

The area has no transportation services or road infrastructure. Without offering municipal public transport, paved roads, bike path and walking, many residents make the commute to work in the city walking or by bike. The nearest bus stop is on the Anhanguera highway – a kilometer and a half away – which has an insufficient number of lines. There is the case of a resident who walks two hours to his place of work.



Figure 49: Offer of large equipment. Source: Image obtained from the final report of Groups 5 in the EPAATHIS course, promoted between August/2020 and Oct/2020

Because they did not have a sewage treatment station, one of the community leader joined a course and elaborated a biodigester septic tank (Figure 50) viable for each dwelling.



Figure 48: Location of occupancy. Source: Image obtained from the final report of Groups 5 in the EPAATHIS Course, promoted between August/2020 and October/2020.



Figure 50 - Sewage treatment through biodigester. Source: Image obtained from the final report of Groups 5 in the EPAATHIS course, promoted between August/2020 and Oct/2020

As described in the previous paragraphs, the lack of public transport and the distance to the center make it impossible to access the leisure equipment available in the municipality. As an option for leisure and entertainment, the residents only have the “Facão Stream” (named so by the residents), but it is polluted, which makes it perform only a contemplative function. In addition, the lack of street lighting causes a feeling of insecurity for night shifts.

Presentation of good practices

The Project shows the importance of movements organizing and seeking support from qualified professionals who fight for the rights of this portion of the population, respect their trajectory, and are allies in their fight for rights guaranteed by the Brazilian Federal Constitution, not always fulfilled.

Collaborations and potentialities

The contribution of architecture and urbanism professionals to the occupation through technical assistance did not include the availability of funds for the construction of improvement proposals but transmitted the understanding that housing is not only the possession of land, because it involves an environment with the provision of public services.

The community already builds through a joint effort, but the guidance of professionals can help in making decisions regarding the choice of more viable materials and environments more suitable for thermal comfort and the need of each family.

Case 2 - Collective Territorial Term Project Description and Contextualization

The Collective Territorial Term (TTC) is an instrument that unites legal, social and urban planning dimensions, aiming to ensure the permanence of residents in their places of residence and offer affordable housing continuously (RIBEIRO et al., 2018). The name is a translation of the term Community Land Trust (CLT), and can be defined concisely as a model in which land ownership is dissociated from building ownership, the first being managed collectively and the second individually, but according to rules established by the group. The functioning of TTCs presupposes the existence of an autonomous organization of those involved in the planning and management of the territory.

The model emerged in the United States in the 1960s in rural areas, through the organization of the black civil rights movement. Self-organized groups that lived and practiced agriculture in rural lands were the pioneers of experiences that worked through long-term land lease agreements or the collective purchase of areas supported by long-term financing or subsidies, and about this situation, there are several cases. In 1980, the first urban experience arose in Cincinnati. Over time, more groups have come to control the areas occupied in their own governance structures that also involve representatives of the neighborhood, local governments, and various organizations involved or affected by each of the CLTs. That is, administrative structures vary on a case-by-case basis. However, there are key elements that characterize all CLTs:

.Collective land ownership: the land belongs to the group of people with the same interests in its use;

.Individual ownership of buildings and improvements: each house belongs to an owner and all of them are subject to investment and transfers. The value of the house remains more accessible than elsewhere by not including the value of the land in the sale price – since the land belongs to the TTC;

.WWAcessible to perpetuity or permanence: removal of the land from the market, making it impossible to divest and increase its price in the sale value of individual houses. Thus, it is intended to guarantee permanently affordable housing;

.Spontaneous support: TTC participants should choose to be part of the TTC, committed to their goal of investing in the community and keeping it permanently affordable.

Other structuring aspects of the model have become more common over time, as communities began to interact with each other, systematize information about experiences, and have empirical confirmations of successful or unsuccessful policies. Currently, there are hundreds of varied experiences around the world, such as in Canada, England, Scotland, Australia and Kenya.

In Brazil, the NGO Comunidades Catalisadoras (COMCAT), which works with projects to bring an emancipatory approach from the favelas to the formal city, held workshops on the instrument in 2018, bringing some residents representatives of the CLT of Caño Martín Peña, a group of eight favelas in San Juan, Puerto Rico, to present the experience to the residents of Rio de Janeiro's slums. Among the various CLTs in the world, the Puerto Rican situation has several approaches to the Brazilian reality. From there came the TTC project, which operates for the implementation of the first experiences of the instrument in two communities in the city of Rio de Janeiro: the Trapicheiros favela, in the large Tijuca region, and conjunto Esperança – a venture of Minha Casa Minha Vida Entities – in the Jacarepaguá region.

The idea of the instrument is that the management of the land, the rules for the alienation of individual houses, as well as the use and care of the collective space, are determined by the residents themselves. It is important to point out that the TTC does not require the total support of residents of a community. That is, only those who are willing to assume the collective conditions of the instrument participate.

The project was organized on two fronts, one of community mobilization on the model, and another that works on legislative proposals that can formally introduce the instrument into the Brazilian legal system, simplifying its implementation. The network of people and institutions involved in the project was organized from the beginning with groups of distribution of emails and messages in the WhatsApp application for the structuring of project activities. The existence of the two mobilization fronts culminated in the creation of distinct thematic communication groups – legislation and mobilization – and a general group, in which plenary meetings are even convened.

In 2018 and 2019, the focus of the project was to carry out mobilization activities in the communities concerned, seeking to reach the maximum number of residents and

deepen knowledge about the TTC. Several activities were thought and carried out in this sense, from community workshops and playful meetings to dynamics of territorial planning, and door-to-door activities, among others. The project also began to receive invitations to present the TTC through classes and lectures, in addition to having representatives who published papers in academic congresses related to Urban Planning and Land Law.

In 2020, since the beginning of the global crisis of covid-19, all activities have been transferred to the virtual environment. The project sought to adapt to the new circumstances, supporting partner communities in their demands, and dedicated itself more ahead of the legislation, since mobilization has some limitations in the virtual environment. In total, eight legislative proposals have been executed to today involving changes in current legislation – at the municipal, state and federal levels – to support the development of TTCs, and a chapter to be proposed as an adhering to existing federal legislation.

In addition to the meetings of the TGs and the monthly plenary sessions of the whole group, some webinars, lives and lectures were promoted by the network. Despite having a direct impact on the engagement and mobilization meetings of community residents, the virtual environment also allowed the participation of employees and stakeholders from other parts of Brazil and also from abroad.



Figure 51: Image of some of the participants of the Virtual Plenary of the TTC of February 2021. Source: CatComm

The territories

1. Trapicheiros

Trapicheiros favela has existed for about 80 years and it is located in Tijuca, a middle-class neighborhood in the northern part of Rio de Janeiro, not far from the city center. Over the years, the community – which was still a little far from the formal city – began to have nearby middle-class buildings and, with this, there were episodes indicating that the presence of the community is uncomfortable for residents of the region who arrived later. Residents received concrete removal threats, linked to the movement of real estate speculation in their surroundings (COMCAT, 2019).

The community was already going through a process of land regularization, associated with the NGO Comunidades Catalisadoras, when there was the workshop with the CLT of Caño Martín Pena. The mobilization efforts of the TTC Working Group have produced several results, including the submission of a law project by the Association of Trapicheiros Residents and an alderman for the recognition of the community as an Area of Special Social Interest, which will facilitate the regularization of land ownership and protect the community from real estate speculation.



Figure 52: Residents of Trapicheiros in an organization meeting of the TT Pilot Project. Source: <https://rioonwatch.org.br/?p=44304>

2. Hope Set

This community of seventy families is the result of a struggle for rights of almost 20 years, planning actions and self-construction as task force. Through the Minha Casa Minha Vida Entities program, residents who once lived precariously as tenants in the city's slums, or were homeless, were able to build their homes in a collective process integrating social and environmental potentialities (COMCAT, 2019).

There is a powerful route of mobilization and dedication, with all residents participating intensely in the construction process, a prerequisite to qualifying to receive a home. Those who participated in the whole process have a strong sense of collectivity. The residents' plan has always been to own the land collectively, initially considering a cooperative model. However, due to Brazilian bureaucratic barriers, residents have adopted the TTC as a more appropriate means of land regularization, which will simultaneously strengthen and help recover the collective spirit of the community.



Figure 53: Final phase of the work of Conjunto Esperança in 2015. Source: <https://rioonwatch.org.br/?p=44304>

Good practices

The TTC project, in summary, seeks to expand the list of housing policy instruments in the Brazilian context. The construction has been part of the assumption that the Collective Territorial Terms depend on the construction of a proprietary arrangement that combines individual and collective interests. Thus, the protagonism of the communities that are fighting for the implementation of the instrument is an example of good practice of the project.

CatComm has played an important role in supporting, listening to, and strengthening communities that carry with them many examples of struggle and a lot of potentials to win their rights.

Collaborations and potentialities

We can affirm that the group of individuals and institutions that are involved in the TTC project configure, based on Souza (2006), the informational reach that supports the social relations existing in the communities of application of the instrument. In addition to The ComCat and the group of residents of the two communities of Rio de Janeiro, which can be identified as the central nodes of this reach, there are many others: residents of other communities interested in the instrument; representatives of various public sector organizations, such as the Federal University of Rio de Janeiro (UFRJ), the State University of Rio de Janeiro (UERJ), the Public Defender's Office, the Institute of Land and Cartography of the State of Rio de Janeiro (ITERJ), the Oswaldo Cruz Foundation (Fiocruz); civil society that operates on various fronts for the right to housing, such as the National Union for Popular Housing (UNMP) movement; collective Manivela Project; Engineers Without Borders; and TECHO. In sporadic opportunities, connections with researchers and members of TTCs outside Brazil were also made, further expanding the informational reach of the TTC project.

In a broader look, the TTC project as a whole can be interpreted as a node of an urban-informational network that currently acts in the two communities of Rio de Janeiro. At the same time, it participates in a broader informational reach, which brings together the set of movements and institutions that act in strategies to guarantee the Right to Housing in Brazil, inserting itself into a much more comprehensive circuit.

The main potential of the project is to realize and guarantee the right to adequate housing through the introduction of the Collective Territorial Term in Brazil, a new reference of public housing policy for the country, aligning itself with the conditions of urban planning

solutions at the local level. If this instrument is implemented, the entire informational reach will disseminate the experiences as an example to other territories. Thus, the potential of network connectivity will become more evident in this case. Many communities and families living in informality and suffering from serious problems related to the right to housing and insecurity of ownership could be benefited. Moreover, the strengthening and recognition of existing community organizations bring strength for subjects to fight for other collective rights, such as access to urban infrastructure and public services on a local proportion, among other issues that constitute the right to the city.

Case 3 - Movement around the recovery of Ribeirão Sobradinho

Description and contextualization of the territory

With 28 kilometers long, the Sobradinho Stream is the most important watercourse in the Sobradinho region, in the Distrito Federal. Given its importance, the sub-basin of the Ribeirão Sobradinho is defined, which in turn is in the São Bartolomeu River basin. On the national proportion, it is located in the hydrographic region of the Paranaíba Basin. And the final destination is the south of the continent. That is, the waters that surface in the region of Sobradinho join the largest river in the Distrito Federal, the São Bartolomeu River – which is 200 kilometers long and cuts through the region in the north-south direction – and continue until its waters get to the mouth of the Rio da Prata.



Figure 54: One of the waterfalls of Ribeirão Sobradinho. Source: <https://blogsosribeirao.wixsite.com/sosribeirao>.

The São Bartolomeu River was the gateway of the Bandeirantes in the region of the Distrito Federal. Since the inauguration of the new capital, this river has been tipped to be a reserve of drinking water to supply the Distrito Federal, as a second artificial lake. However, due to irregular urban occupation and high pollution, the plan was cancelled¹⁰. As a solution, the government carried out a million-dollar work – a cost of more than 300 million – to pump water from the Corumbá River in Goiás, which has São Bartolomeu as one of the main tributaries.



Figure 55: Group of volunteers makes visits to check the situation of the soil erosions. Source: : <https://blogsosribeirao.wixsite.com/sosribeirao>.

What is perceived is a disconnection between the conservation of the environment and the actions of the public authorities. The area of the Ribeirão Sobradinho basin suffers from irregular occupations, sewage dumping in water bodies (including by state company), removal of original vegetation, deforestation, and irresponsible land use among other problems such as the precarious drainage structure. This scenario presents a dead stream from the environmental point of view.

It is worth mentioning that the first springs of the Ribeirão are located near the newly created Alto da Boa Vista condominium. There are already the first attacks on the existence of the Ribeirão. When traveling the stretch of an urban area, about 8 kilometers, the aggressions suffered to make the river unsuitable for leisure and even for irrigation purposes. Currently, the stream is classified as class 3, according to Resolution no. 02/2014 of the Water Resources Council of the Distrito Federal.

As the process of environmental aggravation of the Ribeirão is relatively recent, the

¹⁰https://www.correiobraziliense.com.br/app/noticia/cidades/2017/11/20/interna_cidadesdf,642033/lago-sao-bartolomeu-em-brasilia.shtml.

population realized, through their affective memories with Ribeirão Sobradinho, the need to act to recover this natural resource. Although, of course, there are other contexts for creating environmental movements and actions around this important basin.

This case study aims to analyze some of the projects that are in the fight network of Ribeirão Sobradinho, which has several movements in defense of ecology. Although not formally instituted, through the union of these projects there is a network from which we will analyze three links.

SOS Ribeirão Sobradinho Association

The SOS Ribeirão movement, a project developed in 2010, had as its starting point the completion of the master's degree in the environmental area of one of its founders, Raimundo Pereira Barbosa. Legally, the movement is classified as ANNG.

The initial discussion of SOS Ribeirão involved the affective memories of the founders and the possibility of future generations being able to enjoy the same resource. Among the activities of the NGO SOS Ribeirão and its volunteers, there are campaigns and lectures to disseminate and sensitize the population, which thus articulates and resumes the discussion on the revitalization of the Ribeirão and maintenance of this water resource for the enjoyment of the next generations.



Figure 56: Team of volunteers and participants of SOS Ribeirão Sobradinho; Activity in the house of the Ribeirão. Source: <https://blogsosribeirao.wixsite.com/sosribeirao>.

The formalization of the movement, with CNPJ and statute, in addition to other formal aspects, allows a better articulation with public agencies and the various instances of civil representation. For example, the SOS Ribeirão Sobradinho Association is sitting in working groups, basin committees, and public hearings. It is also noteworthy that the current movement's center, Casa do Ribeirão, is an agreement between the local administration for the assignment of public space. These actions are possible by formalizing the association.

On the other hand, on a daily basis, most of the practical actions of SOS Ribeirão are made possible by the voluntary contribution of individuals motivated to contribute and often do not even formally approach the organization. Other arms of the Ribeirão arise with the symbiosis of groups and individuals who conduct their own social and environmental projects.

Guardians of the Environment

The union of initiatives and people who acted with the same purpose – awareness for the reconstitution of the riparian forest and cleaning of the marshes, springs and tributaries of the Sobradinho Stream for the preservation of natural resources – led to the creation of the collective Guardians of the Environment: an informally structured group that uses social networks to disseminate their work and also to raise materials, equipment and new volunteers. However, sometimes some members use resources from their own pockets to provide demands that arise during the struggle for Ribeirão and its survival.

Acting essentially voluntarily, the founders of the Collective Guardians of the Environment accumulate success in the work proposals. The initiative of Professor Heron de Sena Filho, who made himself available to create a project to raise awareness among elementary school students at Escola Classe 5 (The Class 5 School) in Sobradinho I about the importance of the environment, explaining how degradation ends up interfering in the health of the river, is an example of success since 2016. The project developed in the school works in an interdisciplinary way and addresses recycling, composting, reuse of water and the preparation of seedlings for reforestation of the watercourse.

Another initiative with project status is the Environmental Nelsão, starring Nelson Rodrigues. The reuse of tires for the manufacture of urban art is one of the main works of this guardian. The various works spread throughout Sobradinho and gained prominence in traffic roundabouts and some gardens. To ensure the long reach of the initiative, the activist also involves children. Taking the project to the elementary school, Nelsão Ambiental creates

the opportunity for the children themselves to participate in environmental education and recycling activities.

The preservation activities were recognized by the community and as a curricular activity, in addition to the study, the production of organic fertilizer – from material produced in the school itself, properly separated to be used in composting sites – and the reuse of water, previously wasted in drinking fountains, are developed in the school to irrigate the seedlings produced in the school. The project became a model and there is the possibility of implementation in other educational units of Sobradinho.

In addition to the projects that have come together around the nickname of the Guardians of the Environment, there are other environmental activists who act as volunteers in the demands presented. The fact is that, by coming together, they managed to constitute a larger network, established from the network that each individual brought with them, capable of making larger articulations around the Ribeirão. Hence the efficiency of one of the most powerful weapons of the group, the complaints of irregular situations, mainly about the Ribeirão, but also aspects of local life. The intention of the movement is “to make the community see the environment with other eyes and start charging the government more actions”, as summarized by one of its participants in an interview with *Jornal Correio Braziliense*, on March 26, 2021.

The collective has no hierarchical posts or regulations. Those who are there work on several fronts of protection and struggle for nature.



Figure 57: Environmental education activities are carried out by members of the Guardians of the Environment in the elementary schools of Sobradinho. Source: <https://blogsosribeirao.wixsite.com/sosribeirao>.

RRP Moura

“Revitaliza, Recicla e Preserva” (Renovate the vitality, recycle and preserve) are the maxims of the RRP Moura project, which has as creator one of the Guardians of the Environment, Antônio Moura. In block 1 of Sobradinho, about 12 years ago, the large area that ceased to be green to become a dump became the challenge of the environmentalist. It was the withdrawal to charge the State effective actions in the area that led Moura to start the work of cleaning, planting seedlings and protecting the springs of the Ribeirão.



Figure 58: Antônio Moura in the RRP Moura project conceived by him. Source: <https://blogsosribeirao.wixsite.com/sosribeirao>.

However, although it is the creator who is most dedicated to the project, the activities have volunteers from the neighborhood and the community, who participate or not in other projects such as guardians of the environment. With regard to the dynamics of networks, this project does not have WhatsApp groups, and the information circulating is on personal websites or by citation of other groups.

The work has an effect, and visitors to the area recognize Moura's contribution to renovating the vitality and healthiness of the Ribeirão. Thus, it goes towards the consolidation of its goals, which are: to include the area in an ecological park on the marshes of the river and, through the planting of seedlings, to recover the riparian forest.

Presentation of good practices

The action of a network in favor of a common objective shows its efficiency in the analysis of the cases presented. We could propose a classification in three stages of the social movements presented.

At level I would be the Project RRP Moura, which does not have specific social networks, not even in the application WhatsApp. However, because he has a more exact action, he achieves good articulation with volunteers, often those are nearby neighbors.

At level II would fit the initiatives with articulation in social networks, such as Whatsapp and Facebook, but without formal aspects of organization, be it CNPJ or internal structuring, as positions. In this case, the collective Guardians of the Environment.

At level III would be projects more organized from the point of view of social and legal networks, as it is the case of the SOS Ribeirão Association.

Thus, it is verified that although there are projects that do not present formalities from the organizational and legal point of view, the effectiveness of the movement is guaranteed. Therefore, the specific actions of more personal initiatives complement each other with larger actions. From an informational point of view, more residents of the surrounding area and other interlocutors are accessed.

The various projects can, in different spheres, propose complaints and demands of the community, such as the proposition of expansion of the polygonal of the Jequitibás Park. The movements claim the creation of Conservation Units as a way to stop real estate speculation that threatens Ribeirão Sobradinho.

The group, which is often the fusion of various movements, is acting in the recovery of several river springs and in the cleaning of these places, asking for support from the population on a voluntary basis.

The problems demanded can be solved by actions of the competent agencies, but the issue of environmental education is fundamental in this process since most of the population does not know the Ribeirão, especially the young. Hence the importance of actions with schools in regular education.



Figure 59: In the area that was once a dump, social and environmental activists planted seedlings. Source: <https://blogsosribeirao.wixsite.com/sosribeirao>.

Another important action is the collection of movements with government agencies, such as the issue of rain nets and the release of effluents from the treatment plant by CAESB.

Technical studies for the creation and reclassification of conservation units, the Ribeirão Sobradinho hydrographic unit and specifically part of the socio-environmental diagnosis, are of paramount importance, since they deal with the need for dialogue/capture of socio-environmental conflicts and on possible interest groups, as well as potential activities to be developed.

Collaborations and potentialities

Sobradinho's socio-environmental projects began to apply changes in the population's mentality about nature and to pressure the public authorities to clean up the River. Through the union of projects and the collaboration of the community itself, with the activities around this Distrito Federal objective, the network that is formed indicates the potential for mobilization, including the involvement of children in the learning process of the preservation of natural resources.

Once full and expanded, the network of social struggles around The Sobradinho Stream becomes a world of potentialities to be explored. Here are some ideas for exploring this potential.

Association with rural producers: ecological sanitation and food security

The position of the stream is strategic, as it embraces the city of Sobradinho, in the original layout of the city. Thus, an urban area and a rural area (semi-urban) delimited by the aquatic environment were formed. Both zones contribute to the polluting load. The "chacareiros" (an owner of a small piece of land) and occupants of the rural area of Sobradinho release sanitary effluents and also contribute to pollution by the use of pesticides.

As the urban extension of the river is relatively small, the actions have a lower complexity, from the point of view of accessing those involved. From the network, it is possible to propose a coordinated work of transformation of agricultural production to the agroforestry model, or production without pesticides, with a guarantee of commercialization of producing for a permanent market in the warehouse of the river. And also carry out the implementation of sewage systems in an ecological way. Thus, from the water quality

control, verify the efficiency of the techniques employed and serve as a pilot for other points of the Distrito Federal.

Sewage treatment plant: popular pressure on the government

Today the sewage treatment plant of CAESB (state company) dumps semi-treated effluent in Ribeirão Sobradinho, nicknamed by the population "mouth of the princess". As there is the regular collection to users of sewage service tariffs, under the justification that "wastewater must be adequately treated before returning to the environment", a large mobilization can be carried out to suspend the payment of tariffs in the Sobradinho region, so that CAESB fulfills its role. Such a move can be encouraging so that other sites pressure the company to carry out the treatments.

Of course, there must be a legal study about the best form to operationalize the lawsuit. But the fact is that CAESB does not meet what it sells to the consumer: "this treatment will improve the environmental quality of the soil and water bodies of the Distrito Federal and the life quality of the population" ¹¹.

Memories rescue

A specific project can be proposed, through the affective memories of the community, to retell the history of the Region of Sobradinho. In the region near the watercourse of the Ribeirão there is an occupation of indigenous peoples of the Xucuru ethnic group (including, at another point, there is a FUNAI building), umbanda terreiros (an specific kind of a temple of African-rooted religion), leisure clubs, the sanctuary of Our Lady of the Rainbow and other actors that would certainly enrich the narrative of the riverside's neighbors.

Broad network favoring discussion for shared management

As a public good, water resources can be managed in a shared way. The network established around the social struggles of Ribeirão Sobradinho favors the identification of the various characters from the context of the Ribeirão, as well as the articulation of these agents.

If shared water management is possible, projects such as the creation of the city

¹¹Available in: http://www.adasa.df.gov.br/images/stories/anexos/perguntas_contas_agua_tarifas.pdf. Access in 5. set. 2021.

Urbitá, which will host about 120,000 people, with water supplies coming directly from the water table, could be stopped.

Case 4 - Occupation CCBB Resists

Description and contextualization of the territory

This occupation, located 1 km away from the Planalto Palace, in the Asa Norte (Plano Piloto, DF) and next to the Banco do Brasil Cultural Center (CCBB), has resisted for more than 40 years. In fact, there are working families living there, they do the collection and recycling of materials for a living and remain in the place because they have already constituted and consolidated a relationship and a workflow. It is an area abandoned by the government for decades, and which is now the target of strong real estate speculation, being claimed by the Government of the Distrito Federal (GDF) for the possible construction of an Audiovisual Park, intended for private communication companies, such as television stations and producers – a hypothesis discussed since 2017. Therefore, the target condition of these families intensifies even more, as they are victims of consecutive evictions in the middle of the pandemic, ordered by a necropolitics rooted in the current Brazilian State.

In 2020, with the advance of the pandemic, the governor of the Distrito Federal, Ibaneis Rocha, intensified eviction operations, ordering and orchestrating five short-term operations in the CCBB Occupation, executed by the Legal DF and the Military Police in a violent manner, without any prior support of social protection services of the removed families, which increased the vulnerability of residents in the face of the health crisis, in addition to disrespecting District Law 6657/2020, accepted in August 2020, which prohibits eviction orders during the pandemic.

According to data from the Zero Eviction campaign – national action, with international support, which aims to suspend evictions and is focusing on states and municipalities to pass specific laws to prevent them – more than 72,000 families in Brazil are threatened with removal and more than 12,000 have already been evicted.

In addition, Bill No827/2020 in the process of Congress also advocates the suspension of eviction orders during the covid-19 pandemic period. In other words, the agenda is urgent, and necessary and has been provoking support and social mobilizations from various spheres. Housing is a right and a minimum condition of survival in the pandemic. The approval of this project affirms the commitment pro-life and denies the genocide agenda that Brazil is experiencing at this time.



Figure 60: Violation of District Law no. 6657/20. Source: Nando Motta (@desenhosdonando)

The Distrito Federal is historically marked by socio-spatial tensions, struggles and resistance since its birth, expanding in a process of planned segregation (CAMPOS, 1991) through a policy of exclusion, hygiene and expulsion of its population to the peripheries, tens of kilometers of the Plano Piloto, placed as an elitist “functional center”. This factor explains the birth of the Ceilândia Administrative Region (RA), which comes from “CIS”, arising from the campaign to eradicate invasions created in the 1970s with the aim of moving the residents of the favelas of the Plano Piloto to other areas, further away from this center. This also reveals one of the main problems and impasses in the Distrito Federal: the land issue, segregation and socio-spatial inequality. The CCBB Resists case materializes the situation of several families in the Distrito Federal and exposes the historical condition imposed in these territories.

The CCBB Occupation has been the target of five eviction operations so far. The first occurred in June 2020, and the second on March 22, 2021, after the decision of the president of the Superior Court of Justice (STJ), Humberto Martins, authorized the removal of the 38 families. Contrary to district law no. 6657/2020, the second operation resulted in the wrecking of the houses and the school of the place, founded in 2020, in the middle of a pandemic, to ensure access to education for the 20 children of the place in a situation of vulnerability, each having a volunteer teacher so then it wouldn't occur throngs, with the pedagogical arm of the collective BSB Invisible.

Ao menos 14.301 famílias foram removidas no Brasil durante a pandemia
remoções identificadas até 6 de junho de 2021
ocorrência



Ao menos 84.092 famílias estão ameaçadas de remoção no Brasil durante a pandemia
remoções identificadas até 6 de junho de 2021
ocorrência

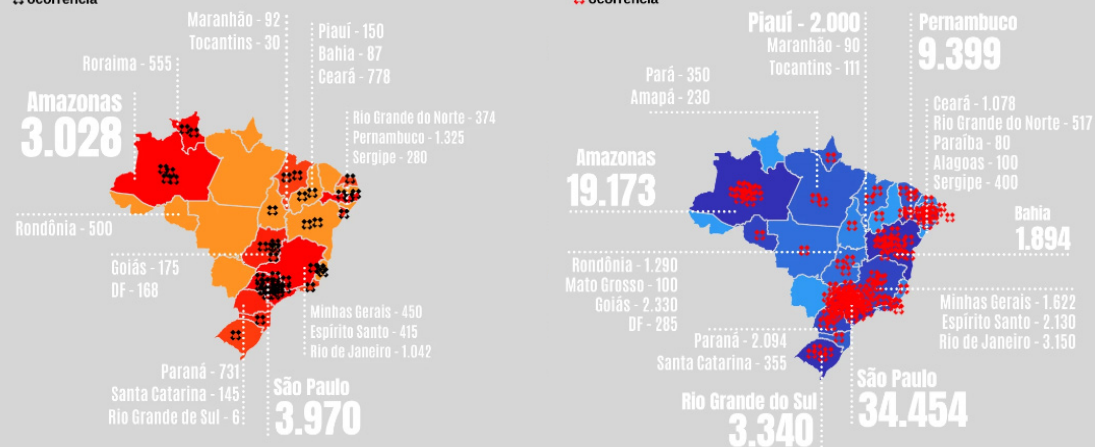


Figure 61: Information from the National Zero Eviction Campaign between March/20 and Feb/2021. Source: Zero Dump

The second eviction operation in the CCBB occurred quite violently, with the support of the shock troops, Military Police and DF legal, all equipped with tractors to wreck the Cerrado School, which was rebuilt by the leading resistance activist, Thiago Ávila, and several collectives of the Distrito Federal. They, together in the territory early in the morning, formed a collective hug around the School, as resistance to prevent its wrecking after the arrival of the task force on the site, in addition to calling for a broad movement of solidarity and mobilization on social networks by raising the hashtags #ocupaCCBBresiste and #DespejoNaPandemiaéCrime. But it wasn't enough to stop the joint battle, which forcibly removed the group of people hugging around the structure from taking down. After that, the Police Force ordered the arrest of Thiago Ávila in an aggressively way, who was the last to leave the roof of the school, and other protesters who accompanied him in the resistance. The school was demolished once again.

Between April and May, there were three more evictions, which materialize the historical exclusion imposed in the Distrito Federal along with the genocide policy orchestrated by Governor Ibaneis, which reproduces fallacies and false hegemonic and elitist narratives about the production of urban space as a justification for unjustifiable acts of eviction. In a statement, Ibaneis said: "In invasions, I will pass the tractor the way it is being done and I will arrest the real land grabbers of this city", referring to the families

and occupations of the territories. The STJ itself points to the case of the CCBB occupation as "damage to public order under the urban aspect", disqualifying it as an "irregular and disorderly" occupation, corroborating Ibaneis. That is, the government of the Distrito Federal ignores, breaks laws and neglects the basic rights of its population.



Figure 62: Group of people hugging the school along with the pressure of the joint battle. Photo: Scarlett Rocha



Figure 63: Wreck of houses and school by operation. Photo: Scarlett Rocha

Presentation of good practices

In the resistance to this scenario, a broad and powerful network of rooted solidarity has been formed - articulated in the territory and in social networks - through various movements, organizations, collectives, politicians and activists, who fight for the families of CCBB Resists and for the end of evictions in the Distrito Federal. This tactical network has been important in the collection of solidarity funds, with the collective BSB Invisible as a centerpiece in the articulation of resources, as well as Movimenta and the collective Dividir, which together with other activists have been important also in the articulation in social networks, especially in WhatsApp, with support teams, prevalence and fast

articulation in the territory. This solidarity chain was essential in the various moments and evictions that occurred in the CCBB Occupation, creating campaigns at various levels, such as joint fundraising by online “whip-round” and donation of tents, blankets and food as quick measures to get homeless families out of the streets. At a later moment, the DF BR Cidades Center and the Zero Df Eviction Campaign have brought ample legal and assistance support, articulating leaders of important and professional movements in various areas of activity, strengthening resistance.

An important piece of resistance in the CCBB Occupation was the Cerrado School, which resisted, rose up again, was overthrown and will now be transformed. Assembled with a lot of collective effort, with donations, and made of improvised materials, he served 20 children of the occupation, bringing education and food to all of them, who today are unstructured and studying on the ground and outdoors. So that children do not run the risk of being left without school again, the project, with the help of the network of actors involved, wants to set up a school inside a Kombi, where materials can be stored and the reach of children can be greater, that is, a mobile and itinerant school, made by the collective union of efforts that is turning increasingly into a reality.

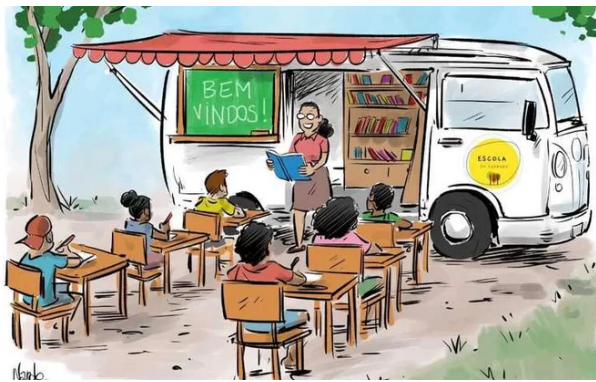


Figure 64: Collection campaign for the Itinerant School. Source: <https://voaa.me/escola-itinerante/>

The CCBB Resists, as an already emblematic case, has the power to contribute to the fight for the right to housing, education and the end of evictions in the Distrito Federal, forming a wide network of actors at various levels and scales of action, in addition to reporting and exposing the historical processes/projects of “social hygiene,” exclusion and segregation imposed in the Distrito Federal. As long as living is a privilege, occupying is a right!

CASE 5 - Technical Assistance for Housing of Social Interest

The Technical Assistance Law for Housing of Social Interest (ATHIS) (Federal Law no. 11.888/2008), created by architect and urban planner Clóvis Ilgenfritz, provides for projects and decent housing for low-income families.

Clovis was a Democratic architect with a very important role in public policy and student politics. He defended the creation of a council only for Architecture and Urbanism and had direct participation in the creation of the Laws Statutes of the City and ATHIS. ATHIS is a law aimed at the provision of basic infrastructure needs and the right to housing for a large portion of the Brazilian population living in precarious conditions. People who receive up to three minimum wages have, guaranteed by Federal Law no. 11,888/2008, free and public technical assistance – provided by qualified professionals responsible for the preparation of projects – and monitoring of renovation works, expansion or land regularization of their homes.

Despite being a policy aimed at ensuring decent housing for low-income populations, ATHIS is still not much publicized by communities, professionals, and academics in the areas of civil construction. It is clear the lack of awareness of the various forms of precarious housing in Brazil and in the world, and there are still few families having assistance in relation to the number of people who live in precarious situations and who are likely to be contemplated by ATHIS.

In addition to ensuring adequate housing, the policy focuses on the movement of the economy and local commerce with the requalification of buildings by ATHIS, generating jobs and income in civil construction, improving the quality of life of people in communities, and reducing spending resulting from poor housing health conditions.

There are several collectives, independent people, social enterprises and institutions mobilized by the cause, which generates a listening and network of voices for the responsible bodies. In addition, CAU/br, as well as all CAUs, since 2016 allocate part of their budget to encourage the implementation of the law in ATHIS.

According to CAU/RS, ATHIS serves the population where it is, avoiding the creation of new demands for infrastructure, services and transportation. In addition:

- .ensures the construction of housing in appropriate areas, in accordance with urban and environmental legislation, qualifying the urban space;
- .includes the low-income population in social policies and in the formal market

through the regularization of the property;

.promotes small-scale civil construction, associated with popular housing from the purchase of materials and hiring local labor (Figure 64);

.improves the quality of life and productivity of the population in the school environment and at work;

.lowers public health costs. Well-lit, ventilated houses with installed infrastructure prevent the emergence of diseases (Figures 65 and 66).



Figure 65: Before and after ATHIS. Source: CAU/RS collection.



Figure 66: Improvements in housing: a healthier home prevents numerous diseases. Photo: CODHAB DF.

Healthy Home Program - CAU/RS

According to the ATHIS CAU/RS office (2020), Casa Saudável is a Technical Assistance program (ATHIS) created by CAU/RS with the objective of contributing to the implementation of the Technical Assistance Law (Law No. 11,888/2008) in the municipalities of Rio Grande do Sul. For this, we seek an integration of the professional architect and urban planner with the teams that work with the Family Health Strategy (ESF), taking advantage of an existing structure and complementing the work of health professionals.

Most of the houses suitable for contemplation by Law No. 11,888/2008 present several unhealthiness caused by precarious constructions, which, for the project, is considered a sick house. Thus, the objective of the project is to unite architects who can contribute to the project solution of these defects from the construction, renovation and adaptation of bathrooms, septic tank, roofs, windows, floors and also favoring ventilation and lighting to bring a quality of life and health to residents who live there.

According to the ATHIS CAU/RS office (2020), a family that receives technical assistance can immediately start the renovation and improvement of their home, or the municipality can organize the collective demand and also seek resources of its own or other institutions.

Healthy Home Program - CAU/RS

Today, with 13 years of law, it is possible to see several Brazilian regions empowering and acting in ATHIS. This performance has generated great results, and although there is still a long way to go, with many families to be contemplated, the result is inspiring and satisfactory.

In Brasília, in 2015, there was the opening of technical assistance posts in regions where the demand profile for ATHIS predominated. The Housing Development Company of the Distrito Federal (CODHAB/DF) is responsible for some actions in housing and urban improvements that have been successful during these years.

I Technical Assistance Day in Housing of Social Interest of Brasília (JATHIS, 2017)

In order to promote information and mobilize communities, institutions, professionals and students in the area, the I Technical Assistance Day in Housing of Social Interest of Brasília took place in October 2017. Held in 3 days, it divided its activities into

theory and experience in the neighborhoods Sol Nascente, Puerto Rico and QNR, located in Ceilândia, a region considered as one of the largest Brazilian favelas, according to an estimate by the Brazilian Institute of Geography and Statistics in the 2010 census, on the so-called subnormal clusters.

The event had several lectures and workshops that had as general objective to perform basic training in projects in ATHIS. According to the workshop plan, made available by the organization of the event, the specific goals were: to encourage the work of future professionals in Architecture and Urbanism for practice at ATHIS; understand the process of Technical Assistance (TA) as multidisciplinary and complex, which requires several steps and time for it to be matured and implemented; and develop technical capacity to intervene in self-construction dwellings, identifying and highlighting the positive aspects of construction.

Event structure:

Venue: IESB Asa Sul Auditorium

Place of experience: Sol Nascente, UniCEUB and FACIPLAC

The event totaled 5 locations: 4 in the Sol Nascente and 1 in Santa Maria, with 20 families attended. The training of about 100 students of Architecture and Urbanism, divided into 20 teams of up to 5 students, had the technical support of CODHAB and teachers from 8 educational institutions. The event had other face-to-face editions in 2018 and 2019. In 2020, due to the pandemic, there was an adaptation and the event took place virtually, with the participation of people from all over the country, which brought a broader connection with other work experiences in ATHIS.

During the editions, it was possible to prove the need to act with a set more ample and multidisciplinary of other agents, in addition to students and professionals in the area. The engagement of civil engineers, building technicians, agronomists, social workers and others, strengthens the entire struggle for ATHIS. Likewise, community practice with dialogue and understanding, without prejudice with direct stakeholders (local residents), is fundamental to better understanding and meeting their needs, because they are the ones who experience daily the challenges related to housing and collective life as a whole.

Case 6 - Nzinga Institute for The Study of Capoeira Angola and Banto Educational Traditions

The Group Nzinga de Capoeira Angola was created in 1995, in São Paulo, in the garage of singer Vanessa da Matta, in Morro do Querosene, according to Mestre Tião Carvalho, master of popular culture of Maranhão and member of the Nzinga group since its foundation. At the time, Master Janja (Rosângela Araújo), a native of Feira de Santana, Bahia, lived in the city because of the preparation of her doctoral thesis, as well as Master Paulinha (Paula Barreto) accompanied by Master Poloca (Paulo Barreto), who was also in the city due to studies. The three already had the trajectory of capoeiristas in the line of Master Pastinha (Vicente Ferreira Pastinha), who rescued the knowledge and traditions of Capoeira Angola, banto tradition¹², in the city of Salvador, since the beginning of the twentieth century, having formed an academy of Capoeira Angola located in the region of Pelourinho, an academy that founded other masters, as Master Moraes, founder of the Grupo de Capoeira Angola Pelourinho (GCAP) in the 1980s, at the Santo Antônio fort in Salvador.



Figure 67: Photo of the founding masters: Paulinha, Poloca and Janja. Source: NZINGA DF



Figure 68: 1st CD and group magazine. Source: NZINGA DF

According to studies by Mestre de Capoeira Angola, Cobra Mansa, capoeira developed in Brazil is related to a dance and fighting practice from southern Angola, which the goal is to put the foot on the opponent's head, in a movement similar to the kick of a zebra. This fight called n'golo („zebra" in quimbundo, banto language), was practiced to

¹²The Banto or Bantu tradition concerns a language family that has given rise to several other African languages. Today there are more than 400 ethnic groups that speak Bant languages, all of them in the south of the Equator. The Banto peoples were one of the most numerous groups to arrive in Brazil at the time of slavery, brought from Angola, the Congo and Mozambique, and had significant participation in the formation of Brazilian culture and people. Several words of Portuguese spoken in Brazil originate from Quimbundo, a Banta language of Angola. For example: moleque, cafuné, quilombo, caçula, cochilo, jiló, fubá and farofa.

the sound of drums and had many movements similar to Capoeira Angola. The use of the berimbau instrument also originates from Banto peoples. Capoeira Angola, rescued and disseminated by Nzinga, preaches orality, non-competitiveness and not much emphasis on the physical performance of its participant, in view of the recognition that the practice can be exercised by various bodies and ages. The Nzinga group does not understand Capoeira Angola as a sport, but as a cultural manifestation, a practice transmitted by orality and group experience, emphasizing the values of cooperation and discipline.

The name Nzinga is a tribute to the queen of Ndongo, present-day Angola, the great military strategist and cunning diplomat Nzinga Mbandi (1582-1663), who personally headed the army until the age of 73, maintaining the sovereignty of her kingdom until her death at the age of 81.



Figure 69: Image of Queen Nzinga, Master Pastinha and an assembly with reference to N'golo. Source: NZINGA DF

Spirituality and ancestry are also present in the group, as well as the anti-racist and anti-sexist struggle, the recognition of the privileges of white and cisgender people, and the need for the spread of the pedagogical values of Capoeira Angola to its practitioners and community in general.

Since the creation of the Nzinga group in São Paulo, he has worked for his masters and practitioners in events in the areas of culture and education, both in the practice of capoeira and in the recording of CDs and documentaries, production of books and magazines, in lectures and as militancy in the street, in demonstrations and debates. The dissemination and practice of Capoeira Angola by the Nzinga group occurred and affected middle-class people linked to the university and also needy communities, where he acted

with a more social character. All sociotechnical subjects in various ways contribute to the diffusion of the network of capoeiristas around the planet. In the years 2001 and 2002, Nzinga opened centers in Salvador and Brasília, as well as established itself in fact as the Institute of Studies of Capoeira Angola and Banto Educational Traditions. The nucleus of São Paulo, in 2003, was established in Jardim Colombo, west of the capital, in a community with many social needs, where capoeira Angola classes and popular cultures were offered to children and adolescents within the Ginga Muleke project. In Salvador, Nzinga settled first in the Rio Vermelho neighborhood, and later moved to a poorer community, Alto da Sereia, between Rio Vermelho and Ondina¹³, also seeking to offer the transmission of the values of the philosophy of Capoeira Angola, which emphasizes the importance of understanding about the awareness of the relationship between the individual and the community.

In the community of Alto da Sereia, in Salvador, during the almost twenty years of operation, some generations of children participated in the activities of capoeira classes and training involving movement, musicality, an exhibition of educational films at Cine Sereia, Orchestra of Berimbaus, circles on Fridays and on commemorative dates, such as the day of Iemanjá, birthday of Mestre Pastinha, Called A Woman (an event that the Nzinga group promotes for discussion on gender violence within capoeira).

Many students, also for the opportunity to be in the group, became teachers or composed tributes together with the masters to participate in events in other centers, such as a presentation of the Berimbaus Orchestra, the National Conference of Culture in 2013, and the Latinidades Festival in 2015 in Brasilia. The video of the ten-year-old record of Alto da Sereia, which also tells a bit of the story of resistance, can be accessed on YouTube¹⁴.



Figure 70: Photos of a circle at the feast of Yemanjá, which took place every year on February 2, and of an instrument training at the center of Salvador, with children and adolescents from the community. Source: NZINGA DF

¹³Alto da Sereia is an Urban Quilombo stuck in one of the noblest points of Salvador, being a place of resistance to the permanence of families.

¹⁴<https://www.youtube.com/watch?v=QxDEgyXTgao>. Fonte: Nzinga.

The center of Brasília, founded in 2002, went through several places, predominantly in training places in the central region, by trying to aggregate the largest number of participants in various points of the Distrito Federal. During these almost twenty years, Nzinga DF participated in activities at UnB, at Elementary School Vivendo e Aprendendo, Conferência Nacional de Cultura (Nacional Culture Conference), Conferência Nacional das Cidades (Nacional Conference of the Cities) and Conferência de Direitos Humanos (Human Rights Conference). Currently, it maintains its head school at CONIC, performing some activities in Zumbi dos Palmares Square and the Setor de Diversões Sul.

He was also present at events of the gender and racial agendas, such as International Women's Day, March of the Daisies and Black Consciousness Day, with activities at the Plano Piloto Bus Station, Praça Zumbi dos Palmares, Esplanada, Casa do Cantador in Ceilândia, Tem Dendê Project (with paranoá children in the candomblé yard of Mãe Baiana, in 2013), Projects at CESAS (youth and adult education school at 602 south) and other events and demonstrations in public spaces.

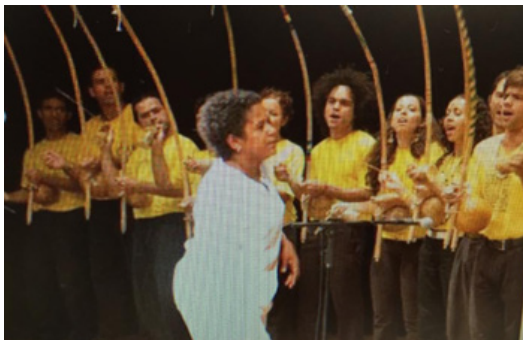


Figure 71: Berimbaus Orchestra. Source: NZINGA DF



Figure 72: Capoeira circle at Funarte in 2004. Source: NZINGA DF



Figure 73: Capoeira circle at Escola Vivendo, in 2015. Source: NZINGA DF



Figure 74: Training of the Berimbaus Orchestra, in 2013, at UnB. Source: NZINGA DF



Figure 75: Capoeira activities at the Social Center, Tia Angelina Day Care Center and Varjão Central Square, in 2016. Source: NZINGA DF



Figure 76: Capoeira circle at the ceremony of decoration orders the cultural merit, in 2015, and demonstrations on the Esplanada in 2016. Source: NZINGA DF



Figure 77: External circle at the Museum of the Republic on May 8, 2015. Source: Nzinga DF.



Figure 78: Circle at Cesas School, 602 south, in 2016. Source: Nzinga DF.



Figure 79: Circle in Praça Zumbi dos Palmares, in 2019. Source: Nzinga DF.



Figure 80: Presentation of the Berimbaus Orchestra at the São Batuque Festival in 2016.. Source: Nzinga DF.



Figure 81: Presentation of the Berimbaus Orchestra at the Latinidades festival in 2015. Source: Nzinga DF.



Figure 82: Procession of berimbaus in demonstration for democracy in 2016. Source: Nzinga DF.



Figure 83: Procession of berimbaus for the end of violence against women, in 2015, at the Pilot Plan Bus Station. Source: Nzinga DF.

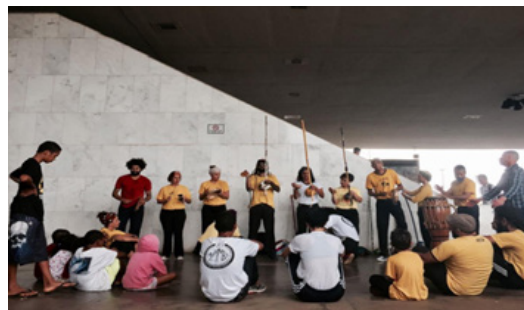


Figure 84: Circle on the bus station for National Black Consciousness Day in 2016. Source: Nzinga DF.

In the years 2020 and 2021, the center of Brasilia did not perform face-to-face activities because of the pandemic of covid-19. However, the foundation in CONIC was prepared for a safe return. An activity was also structured to broadcast the book „Mestre Gato e Comadre Onça” (Master Cat and the Jaguar), which tells the story of capoeira and which the group intended to take to the public network of the Distrito Federal through a project approved by FAC.



Figure 85: FAC Project. Source: Nzinga DF.



Figure 86: Circle in front of the Palmares Foundation in 2017. Source: Nzinga DF.

The story of the book revolves around Mestre Gato, an expert capoeirista who ventures to teach capoeira in the forest, but suffers the threat of Comadre Onça. „Come laze, let's play capoeira!" he invites. „Capoeira is a game of mandingueiro (african wizard or enchanter), tinhoso(furious), with her the jaguar could never," said Mestre Gato. And then actually she shows up, asking for some lessons..."

The activities at the Museu Vivo da Memória Candanga, near the Núcleo Bandeirante. Aimed at students from public schools, the project was proposed in the context in which the idea of starting a work aimed at children in Nzinga DF predominated, in a rhythmic and constant way, in addition to the punctual workshops in schools and other spaces, involving the child audience. With the covid-19 came the adaptation to virtual activities.

CONCLUSIONS

The contribution that this chapter intends to make to the multidisciplinary extension course CTS refers to the experience of looking at the networks of sociotechnical subjects. Social technology breaks with the individualizing ideology of the totality of the subject who reproduced and produced the world we see. The plurality and transversality of themes

involving the informational revolution and the accessibility of the subject-network in a chosen social struggle can be observed in the case examples.

The ability to articulate the subject-network through digital media is something very related to what Milton Santos calls, in his work "For another Globalization", as "information progress". Santos (2001) defines that the revolution of this connected mass can promote another globalization, more solidary, and less dependent on the capital of perverse globalization, which restricts relations and prevents life from following more independent and sustainable courses.

The need to change the pattern of consumption and production, currently in conflict with the maintenance of the planet's natural resources, can be added to the strengthening of the solidarity economy as a solution most appropriate to end the consumption patterns of large capital. Against the hegemonic knowledge of an academy that often stands in favor of the interests of large markets, a new construction of knowledge is necessary, based on the union of practical empirical knowledge with formal knowledge.

In addition, the network analysis by its network subjects was the methodology proposed by Professor Perci, being "network" the socio-historical condition of capital accumulation. The form answered by each subject-network that was part of the research revealed the potential of the network. This research corroborates the notion of Milton Santos (2000) that with advanced communication there would be a rematch of popular culture against mass culture.

The concepts of network, territory and solidarity, in this path of informational evolution, also allow to overcome the individual narrative – hostage of liberalism and modernity – as well as the procedures of solidarity economy and its assumptions.

According to Dagnino (2014), solidarity enterprises need social technology, which is the search for experiences involving the interaction of people from a community in favor of solutions to everyday problems, which often is unnoticed and without recognition. Such enterprises are characterized by the collective ownership of the means of production and by the process of self-management work, with no need for a formal scientific basis, since the processes of exclusion themselves generate social technology.

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