Cultivating a feminist community network: Reflections of practices in the quilombo of Ribeirão Grande/Terra Seca

Introduction

This article is an outcome of an action-research project that gathered community members, farmers, technologists, agro-ecologists and community network practitioners to make possible a community network in the quilombo of Ribeirão Grande/Terra Seca, located in Barra do Turvo city, São Paulo state, Brazil. The quilombos emerged as refuges for Black people who escaped repression during the entire period of slavery in Brazil, between the 16th and 19th centuries. The inhabitants of these communities are called quilombolas. With the 1988 Constitution, they gained the right to own and use the land they were on, but not without plenty of political struggles. Today Brazil has more than 15,000 quilombola communities.[1]

Within quilombo Ribeirão Grande/Terra Seca there is a group of women that takes part in a network called Agroecological Network of Women Farmers (RAMA in Portuguese – Rede Agroecológica de Mulheres Agricultoras), and one of the issues they faced collectively related to difficulties of communication, as farmer Eloíza explains:

> There is a network of women in the groups, without communication for a long time. […] We used to live here, my sister. I used to send little papers from one side to the other, sending several messages because several people are in the group. [...] So we need to have communication. Without charge they brought this one. Which was better for us, we can make the offers (of products), selling and arranging a meeting. So the internet is being unlocked in the neighbourhood here Terra Seca.
> (Interview with Eloíza, January 2021)

During the process we had the chance to hear some great histories of ancient technological systems operating, such as the small individual lighthouses made out of bamboo that people used before electricity arrived in the territory. Back then, people walked everywhere and at night they needed those artisanal lamps to be

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1 Araujo, D. (2021, 30 March). The contribution of bell hooks and Paulo Freire to the construction of community networks. *GenderIT.org*. https://www.genderit.org/feminist-talk/contribution-bell-hooks-and-paulo-freire-construction-community-networks

able to walk through the woods. Elders described how they could tell who was coming by the different shapes of light from these in the dark.

So these women mobilised different formats of communication through time, varying from artisanal lamps to pieces of paper to mobile phone messages travelling through routers and the electromagnetic spectrum.

providers (ISPs), teaching us a lot about the sense of community and challenging the status quo of technological infrastructures.

This essay explores positive and negative aspects of our practices in the design and nurturing of the Ribeirão Grande/Terra Seca community network, the use of feminist and popular education methodologies, respect and appreciation of local knowledge, and

The Ribeirão Grande/Terra Seca quilombola women were co-designers of the community network, approaching its core infrastructure with a very different logic from traditional internet service providers (ISPs), teaching us a lot about the sense of community and challenging the status quo of technological infrastructures.

The RAMA women, keen to have connectivity, themselves envisioned and facilitated the community network project to improve their communication resources. Together with the quilombola residents from the Ribeirão Grande/Terra Seca, we initiated a community network with the RAMA women farmers so that with the help of the internet, they could market their produce in the city. This connectivity enabled better communication between them, their buyers and the logistics chain. The Ribeirão Grande/Terra Seca quilombola women were co-designers of the community network, approaching its core infrastructure with a very different logic from traditional internet service

the importance of considering gender, race and colonialism as oppressions present in the places where community networks operate and are needed. We share these reflections so that they can be useful for other community network activists, advocates and groups when it comes to their technological practices and methodologies.

In our search for socially, culturally, ethically engaged and responsible definitions of technology, we come across our own gaps and prejudices: especially how to see and work on racial relations and, crucially, how community network practitioners ignore their own prejudices.

To this end, we have divided the article into five parts. First, we present quilombo Ribeirão Grande/Barra Seca and quilombola struggles and resistance actors that comprise the project. Second, we share our theoretical inspirations from feminist studies on technology and racial relations, especially those that appeared appropriate to help us rethink sociotechnical systems in the community network context. Third, we address the concept of technology to deal with the intersectionality of oppressions that are built on it. Next, we share some insights on the feminist methodology we used and its outcome. Finally, we comment on the impact the COVID-19 pandemic had on the project and in the quilombo, before closing with some final reflections.

The community network in quilombo Ribeirão Grande/Terra Seca

According to CONAQ (National Coordination for the Articulation of Black Rural Quilombola Communities), "quilombos are synonymous with Black resistance and are historically the places where slaves took refuge and rescued their African origins." The word quilombo originates from the African language Quimbundo, which means society formed by young warriors who belonged to ethnic groups uprooted from their communities. And, although it continues to permeate the sociocultural relations of Brazilian society, as a system, slavery lasted until 1888 and was responsible for the entry into Brazil of more than 3.5 million men and women prisoners from the African continent.[2]

As presented in the introduction, the Brazilian 1988 Constitution has recognised the quilombolas' right to own and use the land on which their communities were created, but not without resistance and tireless political struggles and civil society

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intervention. Today Brazil has more than 15,000 quilombola communities, including quilombo Ribeirão Grande/Terra Seca, one of the seven quilombos present in the city of Barra do Turvo, Ribeira's Valley region. The valley is the largest remaining area of the Atlantic Forest in the country and the existence of traditional communities made it possible to conserve these areas. In this region are 24 Guarani communities, 66 quilombola communities and around 7,000 family farming establishments that involve traditional peasants (the caipiras), traditional fisherpeople (caiçaras) and Indigenous and quilombola returnees from metropolises: in general, children of peasant parents excluded from the land in the past and driven to urban areas and who have now returned to rural activity.[3]

The organisation we have partnered with, RAMA, comprises eight groups of women from the seven quilombos present in the city of Barra do Turvo. These groups are called The Daisies, Roses from the Valley, The Perobas, Women from quilombo Ribeirão Grande, Women from Quilombo Cedar, Women from Red River, Group Hope and Women from Shells. They are quilombola ecological farmers who organise the women of the neighbourhood in cooperatives and associations. They get together to strengthen resistance relations, improve their ecological agriculture practices, and market their products to consumers in the cities of Registro and São Paulo.[4]

The female protagonism in the quilombos where RAMA operates is notable, including Nilce de Pontes Pereira dos Santos, the founder of the Association of Quilombos Remnants of Ribeirão Grande and neighbourhoods of the city of Barra do Turvo, and CONAQ's representative within the National Agroecological Articulation. Nilce was already a protagonist in bridging the digital gap by enrolling quilombo Ribeirão Grande/Terra Seca in a governmental digital inclusion programme called GESAC, which implemented a satellite connectivity and a digital centre in the quilombo. The connectivity provided by the GESAC project was a great step but unfortunately it only provided one single internet hotspot. Nilce sees the benefit of connectivity as a means to communicate the quilombolas' needs outside their territory, amplifying their rights and demands, but at the same time, she is worried about the use of the internet by the youth, afraid that it can become a means to alienation and digital scams.[5]

It must be mentioned that all RAMA women were politically and socially networked before they started to be digitally connected. Indeed, the first time we (the community network articulators group described in the appendix) went to the quilombos territory, the women were jointly engaged in agricultural operations, demonstrating their collective articulation in agroecology and cooperative living in what

[3] Jancz, C., Marques, G., Nobre, M., Moreno, R., Miranda, R., Saori, S., & Franco, V. (2018). *Práticas feministas de transformação da economia: Autonomia das mulheres e agroecologia no Vale do Ribeira*. São Paulo. SOF.

[4] SOF. (2020, 27 January). 2020 começou com mais um encontro de redes de comercialização solidária em Barra do Turvo. https://www.sof.org.br/2020-comecou-com-mais-um-encontro-de-redes-de-comercializacao-solidaria-em-barra-do-turvo

[5] Interview on 24 January 2021.

can be seen as a strong social technology. As a result of the partnerships with RAMA and the feminist organisation SOF (Sempreviva Organização Feminista – Always Alive Feminist Organisation), we have co-created the community network of quilombo Ribeirão Grande/Terra Seca. SOF has been working with RAMA since 2015 with a feminist and agroecological perspective, based on an understanding of economics centred around the reproduction of all the resources necessary for life, taking food production and consumption as a starting point in seeking the democratisation of all power relations involved in social reproduction.[6] The proposal of the community network in this territory therefore begins with the wish from RAMA and SOF of adding to and potentiating the sale of organic products through the women farmers of

the Vale do Ribeira's solidarity economy and agroecology networks. MariaLab (a feminist hackerspace), through its project Vedetas, and member Carla Jancz, started the process of sensitising RAMA in seeking to realise communication autonomy in the territory. They began to imagine a community network in the Ribeira's Valley region back in 2017 with the workshop, "Capacity-building and sharing experiences for an inclusive economy".[7]

On this initial visit, Carla Jancz made a general analysis of the territory and talked to the women about the possibility of installing an autonomous network to distribute internet on site.[8]

Previous interaction by SOF and the trust they built with RAMA was fundamental for this action-research project, which started in

> " *Our methodologies were inspired by feminist principles such as active listening, self-reflection, doing our best to engage women and having the means so they could participate in different roles (what was not always possible, and what we will address in the next section). And also popular education principles such as valuing local knowledge, wisdom, labour and experience, avoiding hierarchies of different knowledges, participative workshops with youth, women and local experts, and learning through and with the process.* "

6 Jancz, C., Marques, G., Nobre, M., Moreno, R., Miranda, R., Saori, S., & Franco, V. (2018). Op. cit.
7 With the support of the British Council's Newton Fund.
8 Jancz, C., Marques, G., Nobre, M., Moreno, R., Miranda, R., Saori, S., & Franco, V. (2018). Op. cit.

2019 as a project undertaken as part of the Feminist Internet Research Network (FIRN), "Action Research on Feminist Autonomous Infrastructure".[9] FIRN is an initiative led by the Association for Progressive Communications (APC) and funded by the International Development Research Centre (IDRC). Since then we have been sharing human and internet bandwidth through the communal construction of a community network. We travelled to quilombo Ribeirão Grande/Terra Seca several times, where we engaged in workshops and practical activities and set up the community network with the locals and with the help of residents of other quilombos (working team from the quilombo listed in the appendix).[10] At the same time, co-creating the community network with RAMA, we conducted a participatory research process that resulted in a paper for the APRIA Journal,[11] a narrative report and multimedia deliveries (a video and three zines)[12] and furthermore in this paper.

Our methodologies were inspired by feminist principles such as active listening, self-reflection, doing our best to engage women and having the means so they could participate in different roles (what was not always possible, and what we will address in the next section). And also popular education principles such as valuing local knowledge, wisdom, labour and experience, avoiding hierarchies of different knowledges, participative workshops with youth, women and local experts, and learning through and with the process.[13] Paulo Freire speaks against what he calls an "educational banking system" that reproduces capitalist relations of transferring and acquiring in knowledge practices. Instead, the philosopher challenges educators to see the exchange of knowledge process as an act of love.[14]

In practical terms, regarding the methodologies used, we had a good initial interaction, conducted immersive workshops with the locals, always asked for their opinions on each step of implementation such as nodes and applications, and came back to the basics whenever new people arrived, and reconciled ourselves with the unavoidable turnover of people from the quilombos. So, the data we gathered and experiences we share come from this participative process, from the collective gatherings and also from semi-structured interviews with the locals. In that sense, most of the questions came directly from either the local leaders, workshop participants and the working team, posing a challenge to our initial plans and projections and opening new paths to our own perspectives on technologies.

9 Zanolli, B., & Prado, D. (2021). *Encounters, coffees and conflicts: Reflections from action-research on a feminist autonomous network.* https://firn.genderit.org/research/encounters-coffees-and-conflicts-reflections-action-research-feminist-autonomous-network

10 Zanolli, B. (2021, 13 December). Sharing human and internet bandwidth of a community network in the middle of a pandemic. *GenderIT.org.* https://genderit.org/feminist-talk/sharing-human-and-internet-bandwidth-community-network-middle-pandemic

11 Zanolli, B., & Prado, D. (2022). Feminist by design and designed by diverse feminists: Reflections on a community network project in Brazil. *APRIA Journal: Feminist by Design.* https://apria.artez.nl/feminist-by-design-and-designed-by-diverse-feminists

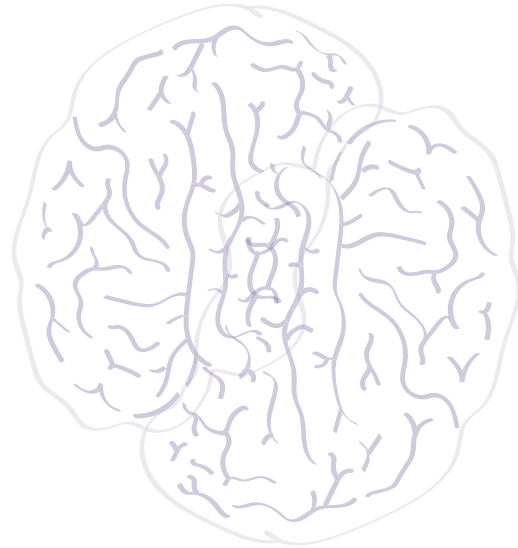12 https://vimeo.com/657450798 and Zanolli, B., & Prado, D. (2021). Op. cit.

13 Freire, P. (1996). Pedagogia da autonomia. Paz e Terra.

14 Freire, P. (1974). Pedagogia do oprimido. Paz e Terra.

Feminist perspectives on technology

Rethinking and rebuilding technology is quite a challenge. Social structure puts those tasked with it having to face socially imposed norms and structures, in order to confront the most usual mechanisms that sustain power through technology building. Adding to these challenges is having to understand the complexity of the tangled relations of class, gender, race, colonialism and capitalism as part of an all-connected structure that constitutes the shaping of technology, and not as isolated parts of our social life. Feminist studies of technoscience have long shown how male bias affects both the definition of technology and the way it is developed, contributing to the downfall of the technological neutrality paradigm, exposing how technological spaces are gendered and the general view of technology as a rich, white, male culture.[15] Also, Black feminists have been struggling with the racist marks of technology and how it mediates the construction and sustenance of a racist world.[16]

Those feminist efforts reach not only mainstream high-tech developers, but also contexts where very well-intentioned social movements make efforts in confronting conventional technology and rebuilding technological models. From the 1970s up until now, there are studies showing up sexist and racist marks on alternative development of technology. Studies from the 1970s, for example, on the politics of Appropriate Technology that fostered projects of technological development in the so-called developing countries of the South, mainly in Africa and Asia, criticised the exclusion of women from the main projects and training in their communities. The authors conclude that such exclusion many times led to the failure of projects as the women were not engaged; they were the ones operating equipment and their maintenance – which didn't happen as

15 Haraway, D. (1995). Saberes localizados: A questão da ciência para o feminismo e o privilégio da perspectiva parcial. *Cadernos Pagu*, 5. http://periodicos.sbu.unicamp.br/ojs/index.php/cadpagu/article/view/1773; Wacjman, J. (1991). *Feminism Confronts Technology*. Pennsylvania State University Press; Wacjman, J. (2001). Gender and technology. In J. D. Wright, N. J. Smelser, & P. B. Baltes (Eds.), *International Encyclopedia of the Social and Behavioral Sciences*. Elsevier; Wacjman, J. (2004). *Technofeminism*. Polity Press.
16 Benjamin, R. (2019). *Captivating Technology: Race, Carceral Technoscience, and Liberatory Imagination in Everyday Life*. Duke University Press.

they were not trained – which led to the disuse of the technology itself.[17]

In Latin America, since the 2000s, the scenario has not been at all different. Even though significant efforts are still being made in breaking the norms and involving women and people of colour in alternative technological projects, the fact is that gender and racist biases can still be noticed. Studies from a feminist perspective of those actions in Brazil show that those exclusions keep on being reproduced, and women's knowledge often is not considered as an important part of project development.[18] In the field of community networks, looking at feminist autonomous infrastructures[19] through a more empirical, experience-based perspective, multiple experiences of women reaffirm how difficult it is to be accepted as equals and occupy decision-making positions in community networks or even at least be able to attend educational, community or power spaces without being bothered or harassed.[20]

The social conditions that keep excluding feminised bodies and people of colour from the protagonism in technological development go way beyond being or not in laboratories and high-tech industries; they connect directly with the places designed by societies as being adequate for those people. The territories where community networks are and the ones that lack connectivity, for example, are racialised communities, such as quilombos, Indigenous communities and urban peripheries.[21] The implementation of community networks is therefore linked to technological training and the knowledge that already exists in these territories.

However, today, in digital technologies initiatives, the presence of white men is predominant. It is not just a matter of representativeness or quantity; the entire thought process of the digital technologies that enable the internet to exist comes from Eurocentric and North American white male perspectives.[22] In this sense, sociotechnical systems carry and reproduce colonial heritages and young women of colour face many layers of exclusion.[23]

During the project development, we experienced a telling situation. One of the teenagers participating said we should not

17 Carr, M. (1981). Technologies Appropriate for Women: Theory, practice and policy. In R. Dauber & M. Cain (Eds.), *Women and Technological Change in Developing Countries*. Westview Press.

18 Vasconcellos, B. M., Dias, R. B., & Fraga, L. S. (2017). Tecendo conexões entre feminismo e alternativas sociotécnicas. *Scientiae Studia, 15*, 97-119.

19 Toupin, S., & Hache, A. (2015). Feminist autonomous infrastructures. In A. Finlay (Ed.), *Global Information Society Watch 2015: Sexual rights and the internet*. APC and Hivos. https://www.giswatch.org/index.php/en/internet-rights/feminist-autonomous-infrastructures

20 Zanolli, B., & El Khoury, C. (2019, 23 October). Our routes: Women's node - An illustrated journey of women in community networks. *Gender IT.org*. https://genderit.org/feminist-talk/our-routes-womens-node-illustrated-journey-women-community-networks

21 Araujo, D. (2021, 30 March). Op. cit.

22 Benjamin, R. (2020). Retomando nosso fôlego: estudos de ciência e tecnologia, teoria racial crítica e imaginação carcerária. In T. Silva (Ed.), *Comunidades, algoritmos e ativismos digitais*. LiteraRUA.

23 https://www.youtube.com/watch?v=gKKR_IHP6JM

invite young women to work on electrical connections, because "they were clumsy". This led us to have a group conversation about gender and technology where, as facilitators, we shared our own experiences of gender bias and technology and how it can undermine women's self-confidence. As a consequence, we specifically called on women to operate the electrical connections from that day onwards, so as to ensure we were applying in practice what we were considering in theory. Community networks have to inevitably deal with similar viewpoints of women not being technologically competent. It is important to note that it is not only such biases that keeps young Black women away from technological labour; such exclusion has also a lot to do with their social role as caregivers, as those in charge of reproductive work, which segregates them into specific places, away from technological development.

In quilombo Ribeirão Grande/Terra Seca, for example, RAMA leaders Dolíria and Nilce stated in an interview[24] that there were fewer women participating in the community network workshops and implementations because there are actually fewer women living in the territory itself. This is because young women leave home to labour as domestic workers right from the age of 14 or 15. This fact intersects three axes of oppression women face – gender, race and class. Brazil still has a strong practice reminiscent of slavery where young, Black working-class women are corralled into domestic labour as they

tend to be groomed for the market from a young age so that they can send money back home. Even those who do remain in the territory have more responsibilities in their homes such as care and household chores. In addition, there is the gender construct that confines women to the domestic sphere. They are married off at a young age to take over the role of carers as the men – fathers, husbands, et al. – disapprove of them being away from home and with people they do not know. According to the interview, in the quilombo territory, young men tend to stay longer to do heavy load work in agriculture and construction.

The fact that young women, especially Black women, have to leave their homeland, or public spaces of political construction, away from their families and others to take care of reproductive tasks following a colonial order where racialised bodies have to serve and take care of white people, has a significant place on how relations and possibilities are built into technological projects. How we socially distribute the work of reproduction and care is structural of places people occupy (or not). This has a direct impact on those with time available and considered fit to get involved in the (technological) projects.

The social and historical exclusion of women and people of colour as protagonists in technological development is not, therefore, a simple question of culturally imposed norms; what also comes into play is how economical and political capitalist

[24] Interview with RAMA leaders Dolíria and Nilce, 24 January 2021.

order is propped up by gender and race oppressions. The implication of class, gender and race are part of a colonialist system that builds on structures that keep certain bodies restricted to some places, especially caregiving, while others, as Christina Carrasco[25] points out, operates as Homo economicus circulating freely in the market (supposedly independent of care), and we could add, developing the technological systems that maintain its interests.

Technology therefore cannot be seen as isolated from those structures, and we have to consider which bodies occupy which places. Black feminist thought has long been engaged in acting on and analysing how class, gender and race cannot be seen or treated as separate categories, but as an intersectional system that sustains the power structure of our societies.[26] The idea of intersectionality is advocated mainly by Black women as a big contribution to rethink society as a whole, and as Carla Akotirene points out, it is an ancestral tool built on iron and Atlantic waters.[27] As Patricia Collins emphasises, the view Black women have on society is privileged on understanding the structures of power since they occupy so many of its margins. And that view allows them to create radical politics and theory.[28]

Even though the concept of intersectionality has gained popularity in recent years, its complexity is far from being fully understood. Black feminist authors[29] criticise the ways the concept has been misused by white feminism without recognising its main critics. They reinforce that the concept emerged from social struggle; it was politics by Black feminists in Brazil[30] and the USA, before it became a theory. Its politics is deeply engaged with exposing the racist and colonialist structures of society and confronting them as well as showing how gender perception is entwined with it. And the concept is being used sometimes as a way of making differences evident, without questioning the causes. In our research, initially, we were also not doing justice to the concept and we sometimes mistook it for the diversity we were looking for technological projects, so we ended up undermining the importance of such a powerful concept. It was Tamara Terso, one of our consultants for this paper, who pointed it out and reinforced the complexity of the concept. She defined intersectionality as "an instrument that gives visibility to the causes of such distinctions in the field of technology – racism, sexism, transphobia, capitalism – problematizing these oppressions from the place of technology."

Reflecting on the context of confronting technological systems of power, inspired by those provocations, what we notice is a highly unequal presence of Black women in places of technological development

[25] Carrasco, C. (2006). La Economía Feminista: Una apuesta por outra economia. In M. J. Vara (Ed.), *Estúdios sobre gênero y economia*. Akal.

[26] Akotirene, C. (2019). *Interseccionalidade*. Polen.

[27] Ibid.

[28] Collins, P. H. (2016). *Aprendendo com a outsider within: A significação sciológica do pensamento feminista negro*. Sociedade e Estado.

[29] Akotirene, C. (2019). Op. cit.; Ribeiro, D. (2019). *O que é lugar de fala?* Editora Jandaíra.

[30] Precursors of the struggle in Brazil such as Lelia Gonzalez and Sueli Carneiro are must-know pioneers references.

in a way not lived by white women. Also, notably from our experience, white women in tech have more visibility than Black men in Brazil. As already said, community network projects are ones that usually include work done with racialised territories, rural or from urban peripheries, in an encounter with white people – mainly urban from privileged neighbourhoods. This project was no different and could be termed as an encounter between mainly white women from the city, with Black women from the quilombos. Daiane Araújo, our consultant and working team member, helped us to ask the question: Why did we not visualise that and consider it in the main discussions in the early stages of project planning and execution? And one answer is the role of whiteness in these scenarios.

Even though whiteness has a main role in building and sustaining the racist system we live in, part of what guarantees its place of power is through keeping its own racial condition invisible. Whiteness as a place of symbolic, subjective and material privileges, which contribute to the reproduction of racial prejudice and the maintenance of racism, sustains its place of power in the racial order, through the invisibility of its own racialisation.[31] When white people do not see themselves as belonging to a white race, they organise themselves from the view of their body and experience in the world as the norm – from which "other" identities are defined. White people were educated not to recognise themselves as white people, but "as human beings who represent disembodied human universality, the standard, the norm as a place of power," and that reaches the territory of technology.[32]

The invisibility of whiteness as having a racialised experience is necessary not only to white consciousness but also to institutions and society, as a mechanism to sustain a colonial and capitalist order of dominance. Without this denial of racist structures the unequal distribution of material and symbolic resources would be evident.[33] In the Brazilian context, many studies and reports make the material inequalities evident and demonstrate the inevitable privileges of white people, including those occupying the bottom of a classist system, in terms of jobs, education, housing and budget.[34]

Therefore, a neoliberal and colonial system relies on a racial order, where whiteness guarantees its privileges through the invisibility of its racial experience. And in the geopolitical world we live in, that inevitably will relate to the hierarchies posed between North and South and within the centre and peripheries of the South itself.

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[31] Cardoso, L. (2011). O Branco-Objeto: O movimento Negro situando a branquitude. *Instrumento: Revista Est. Pesq. Educ., 13*(1), 81-93; Kilomba, G. (2019). Memórias de plantação: Episódios de racismo cotidiano. Cobogó.

[32] Carreira, D. (2018). O lugar dos sujeitos brancos na luta antirracista. *Revista Sur, 28.* https://sur.conectas.org/o-lugar-dos-sujeitos-brancos-na-luta-antirracista

[33] Flax, J. (1998). *American Dream in Black and White: The Clarence Thomas Hearings.* Cornell University Press.

[34] Schuman, L. V. (2012). *Entre o "encardido", o "branco" e o "branquíssimo": Raça, hierarquia e poder na construção da branquitude paulistada.* Doctoral thesis, Universidade de São Paulo.

The fact that our group, composed of mainly white women, was able to access funding to make the community network project viable has to do with the privilege of knowing English, the language that is spoken in the international donor environment, and also to be able to travel abroad and know people from different spaces to weave working networks that facilitate entry into the global North funding environment. And that is not a reality for most community members, reinforcing the argument that the community networks environment itself reproduces these capitalist logics of expropriation, not recognising the actors that live the daily challenges of lack of connectivity or those of maintaining a community network. In addition, global North actors usually put themselves as the ultimate experts of community networks and only publish the materials and state-of-the-art research in English, excluding plenty of global South actors from the discussions and visibility.

Past and present analyses of those experiences clearly point to an historical exclusion of women, of feminised bodies and of people of colour from the hall of those read as having technological skills; and the hierarchical idea that whiteness and global North hold of defining what is to be named technology and having the appropriate means to build it. And here we have explored those two topics that had much influence on the project and making a case not only to rethink the way we do things but also how we can conceptualise technology itself.

Experimenting with the concept of technology

Modern Western technology emerges as one of the devices that make up the scenario of racial and geopolitical hierarchies in this system organised by whiteness, colonialism and capitalism, and has played a role in the sustenance of an unequal world. The alleged neutrality, objectivity and universality of scientific knowledge and technological development is supported by the constructs that take white people (from the North) – and their cultures – as the only referent from which it is possible to understand the world, and in the physical and symbolic elimination of knowledge defined as others, and of ways of thinking about the world outlined as subaltern by whiteness.[35] Those racists' biases on technological development are ones to be taken very seriously when we enter the context of community network. Within this project it calls our attention to critical and implicated notions of

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[35] Benjamin, R. (2019). Op. cit.; Kilomba, G. (2019). Op. cit.

technology that can face the challenge of confronting racist structures of power. It is inspired by a consensus among authors from different parts of the world, especially women, that considering only the technical aspects of connectivity that community networks can foster is not enough to resolve social imbalances in communities, and may even increase local disparities through imbalanced power relations. "Even more worrisome are stereotypes, bias, normalised discriminatory and violent practices when reproduced inside the communities.[…] Every form of discrimination and violence should be addressed inside communities, so that they do not take root deeper, eroding inclusion and equality."[36] And because "the agenda of last-mile connectivity is rooted in conceptions of the internet being emancipatory and empowering, in a way that often blinds the agenda to the actual, specific needs of the communities on the ground"[37] there is a strong need for holistic perspectives and methodologies that can take on this challenge and include racial and gender biases, so that community networks can "move beyond the narratives of last-mile connectivity, and engage with the specifics of the political economy, institutionalised power, culture, micro-politics and inequalities present within areas, communities and people, moving towards more convivial, peaceful and plural societies."[38]

This kind of perception is of high importance, and must be constantly revisited, especially considering the role white people have in assuming the leadership of projects. And we put emphasis on that because what is seen in the territory of alternative technology production, which goes beyond community networks, is that racial structures are not visualised, reinforced by what Bento calls a narcissistic pact, where white people make unconscionable alliances to defend themselves, constantly denying racism and silencing it.[39] There is an imminent risk of a "white saviour" logic permeating so many experiences, where well-intentioned white subjects try to produce and disseminate technologies better adapted to non-white territories, trying to "help" or save them. And by focusing mainly on solving "others' problems", rather than destabilizing their own notion of "universality", their own position might as well continue to reinforce racism, machismo, colonialism and power disparities. And that is profoundly linked with the incorporation of a concept of technology as neutral, as an isolated artefact, not socially defined, not contextually implicated.

Imposing a model of technology on a community is very different from opening space for it to create its own logic to the community network. As an example: there is a demand and a plan from members

[36] Labardini, A. (2021, 13 December). Infrastructures of resistance: Community networks hacking the global crisis. *Gender IT.org.* https://genderit.org/editorial/infrastructures-resistance-community-networks-hacking-global-crisis

[37] Bhattacharjee, U. (2021, 12 December). Community networks: States, solutions and communities. *Gender IT.org.* https://genderit.org/feminist-talk/community-networks-states-solutions-and-communities

[38] Belur, S. B., & Brudvig, I. (2021, 11 December). Community networks as infrastructures of resistance: Re-centring the needs of women and communities in technology-making and connectivity. *Gender IT.org.* https://genderit.org/articles/community-networks-infrastructures-resistance-re-centring-needs-women-and-communities
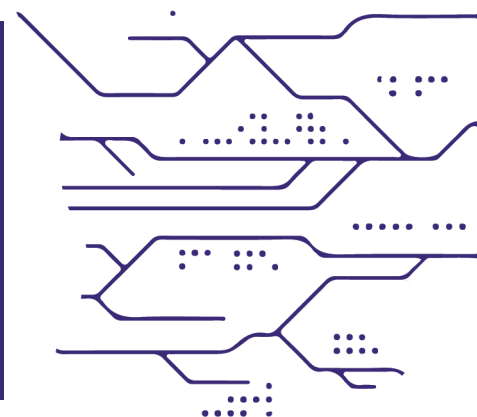
[39] Bento, M. A. S. (2002). *Pactos narcísicos no racismo: Branquitude e poder nas organizações empresariais e no poder público.* Doctoral thesis, Universidade de São Paulo.

to expand one node of the community network to be able to reach Pedrina, an elder woman, who is a member of RAMA, as her friends are worried that she is alone and isolated with her husband in her house. They see the community network as a way to increase personal relations and foster daily communications, and even help in emergencies. And by mobilising the whole infrastructure to attend to one single woman, they upend the logic of big ISPs that are not interested in regions where they do not see a significant market. When the women of RAMA chose to build a new tower and a community network

them, putting the communal logic into practice vehemently. Because although the logic of efficiency and productivity is that of a colonialist system sustained by whiteness, it is often also reproduced in those territories that historically resist the colonial order.

Therefore, not only the way in which it is done but also the concept must be rethought as we try to deal with the intersectionality of oppressions that are built on technology, as we have to face the fact that the most traditional concept of technology is highly patriarchal and

Imposing a model of technology on a community is very different from opening space for it to create its own logic to the community network.

node to be able to reach one woman they evaluate to be vulnerable, that is a priority invisible to technicians who would measure efficiency by the criteria of reaching more people with fewer resources. In that sense, another example of such communal logic is that although the project aimed at RAMA women's household connectivity, they chose instead to leave Wi-Fi hotspots for the whole community, sharing the bandwidth with 20 families instead of keeping it for their five families, resulting in poorer internet connection for all, rather than a reasonable one only for

colonialist. Feminist technology thinker Judy Wajcman[40] will argue that the very concept of technology is androcentric, centred on male experience of the world, coined in patriarchal – and, we might add, phallic – terms on a linear evolutionary trajectory from the truncheon to the rocket, in a semantic language in close dialogue with the construction of hegemonic masculinity (white).

Trying to redesign technology, therefore, led to the task of reconceptualising technology itself. The challenge in this
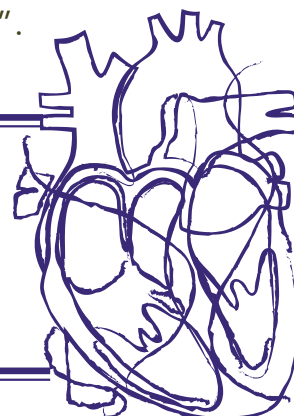
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[40] Wacjman, J. (1991). Op. cit.

case was to blur the borders that according to traditional occidental thought, divided and hierarchised digital technology and ancient agriculture, resistance or care technologies, and through a collective effort redefined technology as "like everything that involves a particular wisdom and ability to be materialized, and not just digital paraphernalia."

That redefinition is highly significant as it brings about at least three important elements: (a) that the concept of technology is not fixed or rigid as is usually seen, technology, its history and our ways of understanding it are socially implicated, and time, territory and context demand us to rethink that constantly; (b) that what whiteness historically defines as technology weighs heavily on the vulnerability of people of colour, and contributes to the maintenance of white people's places of power in the socio-technical system; (c) building community network projects implicated with an intersectional view, which means engaging in confronting gender and racial oppressions, will not be as simple as involving women or people of colour: it will demand rethinking the whole notions we have about technology and how it is supposed to be done.

Finally, reconceptualising technology is only possible if the ways we build projects are integrated with community autonomy, meaning that the "ways we do" affect the results of "what we do".

Some feminist insights into methodology

Bearing in mind the above, we explore how feminist approaches, practices and methodologies have helped with the structure and sustainability of the Ribeirão Grande/Terra Seca community network.[41] To begin with, there was a careful process of reflecting what not to do[42] in order to avoid reproducing prejudices and patriarchal approaches to technology and community networks. Women have historically been responsible for a house's sustainability yet they tend to be the least heard when talking about sustainability projects.

With this in mind, we have fostered some actions to make sure the environment was inviting for women, like shifting the

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[41] For more about feminist perspectives on community networks, see: Zanolli, B., Jancz, C., Gonzalez, C., Araujo dos Santos, D., & Prado, D. (2018). Feminist infrastructures and community networks. In A. Finlay (Ed.), *Global Information Society Watch 2018: Community networks.* APC & IDRC. https://giswatch.org/en/infrastructure/feminist-infrastructures-and-community-networks

[42] More about gender experiences and prejudices faced by women in the community network environments in the graphic piece "Our routes: Women's node – An illustrated journey of women in community networks": https://www.genderit.org/feminist-talk/our-routes-womens-node-Illustrated-journey-women-community-networks

focus from the technical to the human components; respecting the community time and sovereignty; working to have as much gender representation as possible; using learning methodologies that are inclusive and inviting, such as Popular Education,[43] and facilitating all the support needed for women to be able to attend – childcare, meals for them and their cared ones, transportation and family talks to explain the project so the parents would allow the girls to participate. Also, to constantly reflect and have conversations before, during and after each visit to the quilombo, in order to create an ambience of trust, support and respect for differences, a characteristic we believe has also contributed to the resiliency of the community network in pandemic times and to our personal growth.

So, although the RAMA women were not able to participate in all implementing activities, they have the leadership of the community network and are considered its guardians, being responsible for its management. This includes issuing passwords, knowing where the infrastructure is set up, doing basic troubleshooting and informing bigger problems with accuracy – and also for its future and sustainability – looking not only at the financial aspects but also all the work needed for its nurturing. Care work or labour of care is a feminist concept often associated with caregiving and domestic housework roles, including cleaning, cooking, child and elderly care,

and unpaid domestic labour. It includes all tasks that directly involve care processes done in service of others. It is usually performed by women, and although essential, it is most of the time invisibilised and taken for granted. In the context of a community network, it also extends to all the work performed in caring for the people, and the space and the relations needed for the network to exist.

Along with community network, connectivity has fostered personal relations and increased daily communications. Women do regular online check-ins among themselves and have this extra connectivity tool to look for each other; some even got more interested in the digital world after the community network was established. For instance, Clarisdina, an elderly woman who lives in isolation with her husband – also elderly – was happy with the community network and bought a smartphone. She now participates in the RAMA activities more actively and is present for friends and family who live outside the quilombos and has more means of asking for help in case of an emergency.

Considering how the community network also gives feedback to the RAMA group, it has made them more visible to their own community. They appreciate that a women's project brought the internet to the community, despite the mistrust of some men during the process. Some future plans for the community network

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[43] Popular Education is a form of education in Latin America that values people's prior knowledge and their cultural realities in the construction of new knowledge. Educator Paulo Freire was a great supporter of this approach, which encourages the development of a critical look at education and the participation of the community as a whole, encouraging dialogue and guided by the perspective of realising all the rights of the people. The teaching-learning process is seen as an act of knowledge and social transformation, recognising the importance of popular and scientific/technological knowledge.

includes accessing wholesale internet markets; creating a space so women can have privacy while using the computer – e.g. for RAMA women attending online therapy; and expanding the network to another quilombos nearby where more RAMA farmers live.

Undoubtedly, the internet has brought more comfort to daily lives but at the same time, some women demonstrate concerns over how this tool can end up reducing the warmth of in-person relations. In an example from the video produced as part of this project,[44] woman farmer Arlete demonstrates that in the pre-internet days, they used to gather for sleepovers to catch up with family and friends and ended up having a great time, sometimes staying up all night telling stories. What warmly united people in a deeper way is now replaced by long-distance chatting without in-person contact. Nevertheless, she concedes that the internet is also a research tool.

Since the initial interviews, we were able to gather the preoccupations of the community with the network project and after the arrival of the internet, and based on that, we did three zines:[45]

one with information regarding good use of the internet and digital security – to address the issue of youth alienation and avoiding digital scams, another to share our reflections from a study group on whiteness and diversity inclusion, and a final tutorial talking more about the practical and technical terms of the community network and how to add extra nodes, because quilombola women displayed a lot of interest and worries on managing the knowledge and the maintenance of the network and its sustainability. This knowledge was supposed to be shared through workshops on digital security but the COVID-19 pandemic put paid to in-person workshops.

So, taking all in account, the overall statement from the community is that the community network has played an important role in increasing communications. Now they can chat with each other from their farms. They have even made wooden benches in spots where the Wi-Fi signal is better. And, especially with COVID-19, where health, education and income became more challenging for the community, the internet played a role in diminishing their difficulties.

COVID-19

It is also essential to analyse how the pandemic has impacted on our action-research practices, deliveries and the community needs and what was catalysed during the past two years of the pandemic

in the quilombo Ribeirão Grande/Terra Seca territory. The questions are: Which were the values and the principles that made it possible for the community network to be sustainable in such adversities? What were the community impacts of having a feminist, autonomous community network during the pandemic? How did its governance take place?

[44] https://vimeo.com/657450798
[45] Zanolli, B., & Prado, D. (2021). Op. cit.

When we think of sustainability in such a community network context, the key question is far from "who will pay the bills?" Rather, it is "how are people – and community networks – going to stay alive in the midst of an economic and health crisis?" This means that a social sustainability that can be strong enough to deal with multiple adversities and is able to promote economic resilience is what people really need to keep themselves – and community network – alive.[46]

In the first place, there is a need to highlight how the COVID-19 pandemic has affected the quilombos, especially considering the lack of connectivity and basic rights that historically and structurally concerns those territories. This lack mostly relates to health and education: the denial of the rights to health information, crucial to create health measures and protect traditional communities; the difficulties in accessing government financial support to digital platforms and health-related needs; difficulties in accessing educational materials and online classes, and even school year cancellation on the grounds of lack of connectivity generated by inequalities.[47]

When the pandemic started, RAMA women showed more concern about us in the cities rather than themselves. In their close contact with nature, they felt more peaceful and in better shape to deal with the pandemic than city dwellers because, for instance, they did not have to go out for groceries with masks, gloves and social fear: to get healthy food they only had to go to their backyard vegetable garden and/or exchange food with neighbours. In selfless actions like these, we can see how collective sustainability values and agroecological principles of respecting nature and the common goods challenge the neoliberalism status quo of "every man for himself" and have built collective resistance in the quilombolas despite more than 300 years of slavery and its consequences. And since it is in adversity that communal solutions arise, they have set up creative ways to use their connectivity.

The community network internet connectivity facilitated communications and helped maintain their income-generation process during the pandemic. It supported them in selling their agroecological products, which was compromised due to social distancing, by improving means of communication and minimising inter-mediaries in the process. And because their economic sustainability is more stable thanks to connectivity, a small part of it is ploughed back to sustain the community network (payment of internet bills and maintaining a fund for improvements).

Thus, there is mutual feedback between the community network and the local economy, supporting the affirmation that the resilience of the community network relies on the sustainability of the community.

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46   For more about the importance of local knowledge and sovereignty in building community networks, see: Prado, D. (2019, 4 November). Community networks and feminist infrastructure: Reclaiming local knowledge and technologies beyond connectivity solutions. *Gender IT.org*. https://genderit.org/feminist-talk/community-networks-and-feminist-infrastructure-reclaiming-local-knowledge-and

47   https://quilombosemcovid19.org

The internet makes it possible to make individual video calls or to participate in lives, so that RAMA councillors and other political leaders for safeguarding the land can participate in regional and national political decision-making spaces, such as the National Articulation of Agroecology, the National Meetings of the Quilombos and Environment Councils. In these meetings, there are many discussions, advocacy and policies that help to maintain the quilombos' local economy. These include guaranteeing their right to land without invasions; fight agribusinesses, food monopolies and the extensive use of pesticides; engage in collective agroecological sales to government and major buyers; exploring community-based tourism activities; and guaranteeing basic human rights.

All these have been very challenging in the current chaotic Brazilian political scenario, with constant threats to quilombolas and even a racist ultra-right conservative as director of the Brazilian federal foundation for the promotion of Afro-Brazilianness, the Palmares Foundation.[48]

> *"The perception that emerges almost at the end of the project is that the fact that RAMA was already mobilised, having strong feminist partnerships such as SOF, and having met with a team of women involved with community network made it possible to design an action plan where women in the territory had protagonism in the central definitions of technological construction."*

[48] Teixeira, F. (2020, 22 July). Brazil's Black rights movement grapples with hostile official. *Reuters*. https://www.reuters.com/article/us-brazil-rights-race-trfn-idUSKCN24N265; Watson, K. (2020, 15 February). The racism denier in charge of defending black rights in Brazil. *BBC*. https://www.bbc.com/news/world-latin-america-51501111

Final considerations

A sustainable community network model from our perspective needs to be always open to change, and not watertight. The economic model must be resilient and adapt itself to reality; and for that it needs a strong social organisation that is inclusive, diverse, flexible and well articulated. Above all, it needs to foster and support the local economy and value care work. To that end, each community has its own models, strategies and forms of doing it; it needs to be heard and be the structural basis for its construction; and it needs to address specificity, work along with the community and have good principles, and inclusive and supportive guidelines.

Sustaining all this in daily actions is not easy, and reflecting critically on what we do is essential to overcome invisible reproduction of power structures. Therefore, through this article we have tried to make a critical analysis of the experience we lived through in the project, and among the many possible elements that can be brought to light, it seems to us that the feminist perspective that guided the project and the (late) perception of whiteness as a piece constitutive of its structuring deserve reflection. Not only because they were significant to the development of the project, but especially because it has had little visibility in the contexts of construction of the community network, as we have indicated throughout the text.

The constitutive feminist perspective of the project seems to us to have been a key element in the possibility of constituting a community network that had space and acceptance within the community, and that somehow worked for them. The perception that emerges almost at the end of the project is that the fact that RAMA was already mobilised, having strong feminist partnerships such as SOF, and having met with a team of women involved with community network made it possible to design an action plan where women in the territory had protagonism in the central definitions of technological construction. As we have tried to show with the theories and experiences of the project, they redesigned the concept of technology, connecting ancestry and technology; they remodelled the work methodology, organising the participations and their functions; they focused on the technological execution itself, imposing a more communal way of structuring the network; and assumed the maintenance of the network as a way of guaranteeing the support of the technological system over time.

In our view, these strong effects in the execution of the project became possible because there was a leading role of women and a feminist perspective of its organisation lent by the years of experience and articulation. And they found fertile ground for their claims in the technological field by working with a team that shared feminist premises with them. It is important to point out though, community network projects will not always find an organised feminist substrate like this for their actions,

which may imply greater challenges for the definition of technologies in effective dialogue with communities, and would require other forms of work and action. But despite that, what seems to us to be an important learning from this experience is that fostering feminist articulations and guidelines is a key element so that the routes of technological designs can be revisited in more sustainable terms.

On the other hand, we insist on reflecting about whiteness, even though we understand the intertwining that the racial system has with the capitalist and colonial structures we live in, because it was evident throughout the process that the invisibility of racial dimension of the project structuring and execution was a weak link. External gazes, from Black people, were necessary to draw attention to how white people involved in the project viewed race and to highlight the encounter between the centre and the margins of the racist system that characterises most of community network projects. The outcome of that provocation was the implication of the team in reflecting on the racism and rethinking throughout the project on necessary changes methodologically speaking. We addressed that by first not ignoring it and putting on ourselves the responsibilities to be more active in relation to how our whiteness and structural racism have affected our project. So, we had study groups to better understand these two factors and consulted specialists on race and technology relations.

When building the analyses throughout this article, and reflecting on whiteness, we sought to some extent to displace the most commonplace of power structures that not only talk about the neutrality of technology, but also, crucially, make invisible the role it plays in maintaining a racist order. In this sense, an important learning that emerges from this process is that for the structuring of a sustainable community network, it is important to start from the premise that the racial view of the people who build the projects is central to their political and methodological design. And, above all, silence in this sense is a powerful mechanism for maintaining places of power – including those of the well-intentioned seeking to make revolutions in the technological field.

People working with community networks need to be more aware of their own biases, and must study, reflect and work on recognising the ways in which whiteness and colonialist relations operate within their relations to these networks. Also, there is the need to sensitise community network advocates' environment to create more diverse spaces, having the logics of care as core in their process.

Lastly, this experience calls for an expansion of our perception of the multiple faces of oppression, and how it affects the territories where projects are developed. The expansion of our field of vision is a step that could foster actions that can actually open the space for subversion of technological systems through the voices and political perspective of the margins itself. This way we – mainly white people – can make an effort to mediate spaces where communities can have their voices heard and their perspective affect the routes of technological development, not only in their territories, but beyond them.
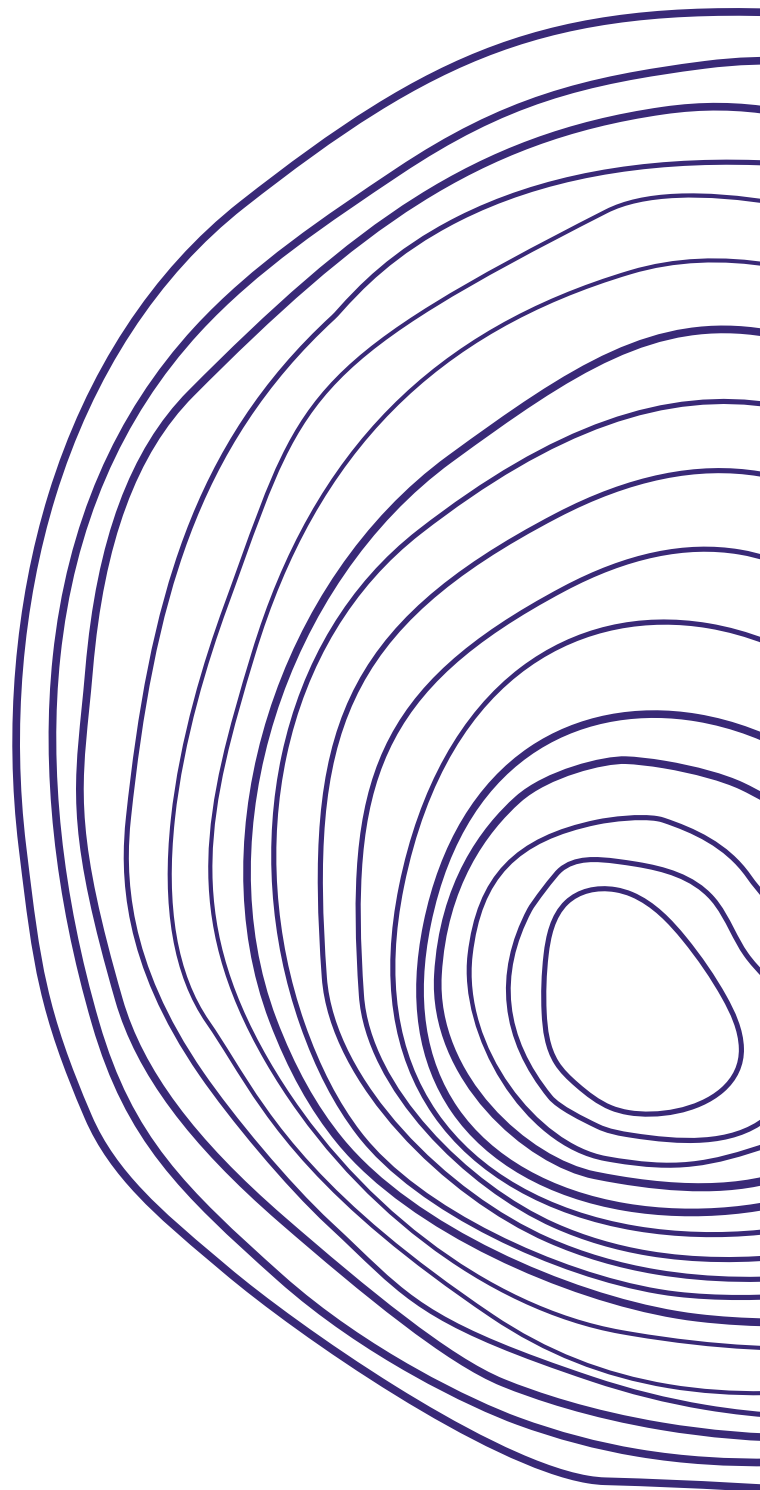
Appendix

Our working group comprised a team of six women living in the city of São Paulo, around 400 km from Barra do Turvo city and the quilombos. We are women interested in decolonialism, anti-racism, women's organisation, agroecology, community technology and research around community networks. Brazilian researchers Bruna Zanolli and Débora Prado applied to FIRN (Feminist Internet Research Network), a project born of a partnership with the feminist organisation SOF (Sempreviva Organização Feminista – Always Alive Feminist Organisation), through the ecologist Natália Lobo and agronomist Gláucia Marques.

The possibility of a community network in the quilombo was previously raised by the information security specialist Carl Jancz (from project Vedetas from women's hackerspace MariaLab), with workshops with RAMA women to present the idea of a community network and its possibilities. We also had the powerful insights and technical collaboration of the geographer and activist Daiane Araújo, who completed the team.

Hence, although this paper is signed by Bruna Zanolli and Bruna Vasconcellos (researcher and professor at UFABC – Federal University of ABC), the knowledge presented here is a compendium of the collective work done in the past years, with reflections of the whole team together thorough meetings and field visits. We also benefited immensely from a consultancy with Tamara Terso, a scholar of technology, gender and race relations, who helped us navigate through our rich data gathered from field visit reports, interviews and written materials.

Quilombolas community network team

- **Arlete Aparecida de Souza Santos:** farmer from Perobas – RAMA

- **Clarisdina A. dos Santos:** farmer from Perobas – RAMA

- **Doliria Rodrigues de Paula Reis:** farmer from Perobas – RAMA

- **Dalcides Marques dos Reis:** local farmer

- **Eloíza Santos:** farmer from Perobas – RAMA, commerce leader

- **Edicarlo Pedroso:** local farmer and construction worker

- **Jane Aparecida de Souza Santos:** farmer from Perobas – RAMA

- **Natael de Souza Santos:** local farmer and construction worker

- **Lucas de Paula Reis:** local farmer

- **Gilson Santos de Paula:** local farmer

- **José Augusto Santos:** local farmer

- **Edilaine de Souza:** local student and farmer

- **Nilce de Pontes Pereira:** farmer from Perobas – RAMA and CONAQ leader

- **Izaíra de Pontes Maciel:** farmer from Perobas – RAMA

- **Pedrina de Paula Pereira:** farmer from Perobas – RAMA

- **Pablo Kauê de Souza Santos:** local student and farmer

- **Ana Rita Pedroso de Paula:** local student and farmer

- **Vanilda Aparecida de Souza Santos:** farmer from Perobas – RAMA and community leader

Bios of research and project team

Bruna Vasconcelos (co-author) is an action-researcher in the field of gender and technology, specially engaged with the areas of social technology, solidarity economy and agroecology. She works as a professor in Federal University of ABC, Brazil, where she coordinates the Esperança Garcia Center for Gender Studies. Also co-founder and member of the Popular Engineering Network Oswaldo Sevá.

Bruna Zanolli (author and project leader) is a hands-on researcher in the areas of community networks and digital care. She is interested in how feminism, decolonial thinking and popular education can be used as tools to narrow the gaps of access in their multiple layers. She is also a member of the Transfeminist Network of Digital Care, a network focused on diversifying the voices, bodies and methodologies of digital practices and care.

Carla Jancz (technologist) is an information security specialist who works with digital security for third-sector organisations and with free technologies and autonomous networks from a feminist and holistic perspective. She is a member of MariaLab, a feminist hacker collective that explores the intersection between gender and technology based in São Paulo, Brazil.

Daiane Araujo dos Santos (technologist) is a Brazilian activist in human rights and information and communication technologies (ICTs) who contributes to the implementation of community networks in Brazil, bringing discussions about critical appropriation of technology and its impact on people's social and community life. Living in the periphery of the south of São Paulo (Brazil), she graduated in Geography in 2018 and, since 2010, has been working in social movements.

Débora Prado (communication leader/research) is a journalist and activist with a background in social communications, feminism and human rights. Since 2017 she has been involved in researching feminist technologies and knowledge to challenge androcentric and colonial norms.

Glaucia Marques (consultant) is an agronomist and is part of the SOF (Sempreviva Organização Feminista) technical team that operates in the Vale do Ribeira region, contributing with solidarity commercialisation and agroecological and feminist technical assistance to the Agroecological Network of Women Farmers (RAMA, the Portuguese acronym representing Rede Agroecológica de Mulheres Agricultoras).

Natália Santos Lobo (producer and rapporteur) is an agroecologist and part of SOF's technical team in Vale do Ribeira, working with the RAMA network.

Peetssa P2RCA (bamboo specialist) is a bamboo constructor and led the construction of a bamboo tower for the Ribeirão Grande/Terra Seca community network.

Tâmara Terso (research consultant) Amefrican journalist, researcher at the Center for Studies and Research in Discourse and Media Analysis (CEPAD/UFBA) and Center for Communication, Democracy and Citizenship (CCDC/UFBA). Associated with Intervozes and speaker of the Ondas da Resistência podcast. She worked on the project as a consultant in technology, race and gender relations.