

## ACME

An International Journal for Critical Geographies

Revue internationale de géographie critique

Revista internacional de geografía crítica



# Indigenous Economies for Post-Covid Development Lessons from the North Rupununi, Guyana

Jayalaxshmi Mistry, Deirdre Jafferally, Grace Albert, Rebecca Xavier, Bernie Robertson, Ena George, Sean Mendonca and Andrea Berardi

Volume 22, Number 2, 2023

URI: <https://id.erudit.org/iderudit/1100522ar>

DOI: <https://doi.org/10.7202/1100522ar>

[See table of contents](#)

### Publisher(s)

Centre for Social Spatial & Economic Justice at the University of British Columbia

### ISSN

1492-9732 (digital)

[Explore this journal](#)

### Cite this article

Mistry, J., Jafferally, D., Albert, G., Xavier, R., Robertson, B., George, E., Mendonca, S. & Berardi, A. (2023). Indigenous Economies for Post-Covid Development: Lessons from the North Rupununi, Guyana. *ACME*, 22(2), 947–970. <https://doi.org/10.7202/1100522ar>

### Article abstract

Despite being disproportionately susceptible to infectious diseases like COVID-19, many Indigenous peoples still hold traditional knowledge that is responding and adapting to new circumstances and crises such as the pandemic. In this paper, we present the findings from a participatory video project in eight Makushi and Wapishan Indigenous communities in the North Rupununi, Guyana, that explored the difficulties and disruptions that came about through COVID-19, but also the opportunities for change and transformation. Over four months, Indigenous researchers gathered the views and perspectives of their communities through a participatory video process. Our findings show that there was limited information provided to communities and their leaders (especially at the start of the pandemic), and support, in the form of supplies and relief, was ad-hoc and inconsistent. As people lost income from paid work, they turned to traditional farming, fishing and hunting to sustain their lives and to support others who did not have the conditions to support themselves. While many Indigenous community members retreated to their isolated farms as a protective measure, community leaders took responsibility to protect their lands and territory by installing gates on access roads and establishing patrols to enforce rules. The recognition that their traditional knowledge was not only culturally important but necessary for survival during the pandemic, gave it a newfound relevance and legitimacy, particularly for young people. Supporting Indigenous economies such as farming are not only critical for maintaining nature and traditional cultures today, but also for being resilient to future social and ecological crises.

© Jayalaxshmi Mistry, Deirdre Jafferally, Grace Albert, Rebecca Xavier, Bernie Robertson, Ena George, Sean Mendonca and Andrea Berardi, 2023



This document is protected by copyright law. Use of the services of Érudit (including reproduction) is subject to its terms and conditions, which can be viewed online.

<https://apropos.erudit.org/en/users/policy-on-use/>

érudit

This article is disseminated and preserved by Érudit.

Érudit is a non-profit inter-university consortium of the Université de Montréal, Université Laval, and the Université du Québec à Montréal. Its mission is to promote and disseminate research.

<https://www.erudit.org/en/>



# Indigenous Economies for Post-Covid Development: Lessons from the North Rupununi, Guyana

**Jayalaxshmi Mistry**

Department of Geography, Royal Holloway University of London, UK  
[j.mistry@rhul.ac.uk](mailto:j.mistry@rhul.ac.uk)

**Deirdre Jafferally**

Cobra Collective CIC, Guyana  
[deirdre.jafferally@gmail.com](mailto:deirdre.jafferally@gmail.com)

**Grace Albert**

Cobra Collective CIC, Guyana  
[grace.albert.cobra@gmail.com](mailto:grace.albert.cobra@gmail.com)

**Rebecca Xavier**

North Rupununi District Development Board, Annai Central, Region 9, Guyana  
[rebeccaxavier86@gmail.com](mailto:rebeccaxavier86@gmail.com)

**Bernie Robertson**

North Rupununi District Development Board, Annai Central, Region 9, Guyana  
bernie.bernie.roberts56@gmail.com

## Ena George

North Rupununi District Development Board, Annai Central, Region 9, Guyana  
george.ena2019@gmail.com

## Sean Mendonca

Independent Researcher, Georgetown, Guyana  
mendonca.sean@gmail.com

## Andrea Berardi

Cobra Collective CIC, Egham, UK  
andrea@cobracollective.org

---

### Abstract

Despite being disproportionately susceptible to infectious diseases like COVID-19, many Indigenous peoples still hold traditional knowledge that is responding and adapting to new circumstances and crises such as the pandemic. In this paper, we present the findings from a participatory video project in eight Makushi and Wapishan Indigenous communities in the North Rupununi, Guyana, that explored the difficulties and disruptions that came about through COVID-19, but also the opportunities for change and transformation. Over four months, Indigenous researchers gathered the views and perspectives of their communities through a participatory video process. Our findings show that there was limited information provided to communities and their leaders (especially at the start of the pandemic), and support, in the form of supplies and relief, was ad-hoc and inconsistent. As people lost income from paid work, they turned to traditional farming, fishing and hunting to sustain their lives and to support others who did not have the conditions to support themselves. While many Indigenous community members retreated to their isolated farms as a protective measure, community leaders took responsibility to protect their lands and territory by installing gates on access roads and establishing patrols to enforce rules. The recognition that their traditional knowledge was not only culturally important but necessary for survival during the pandemic,

gave it a newfound relevance and legitimacy, particularly for young people. Supporting Indigenous economies such as farming are not only critical for maintaining nature and traditional cultures today, but also for being resilient to future social and ecological crises.

### Keywords

Indigenous economies, COVID-19, farming, participatory video, Guyana

---

### Introduction

The COVID-19 pandemic has had an unparalleled impact across the globe. Yet, amongst the research on the pandemic, there has been little attention on Indigenous communities who traditionally manage, use or occupy over a quarter of the world's land area (IPBES, 2019). Through their livelihood practices, rituals, institutions, worldviews and beliefs - their traditional knowledge - Indigenous peoples are significantly contributing to the maintenance of global biodiversity and carbon stocks. Yet, traditional knowledge is on the decrease worldwide; a recent study with Indigenous knowledge-holders on their perceived status of traditional knowledge in Guyana found it to be 'acceptable', with some communities assigning 'bad' or 'very bad', and none 'good' or above (Mistry et al., 2021a). This is a result of a myriad of historical and contemporary forces, including appropriation, suppression and assimilation, expressed through changes in lifestyle, education and belief systems, economic and cultural globalisation, urbanization, loss of land rights and poverty (Fernández-Llamazares et al., 2021). Researching how Indigenous communities have responded to and been impacted by the COVID-19 pandemic, will provide an insight on how future socio-economic shocks may impact the communities that live within and manage over a quarter of the world's land area.

Processes of colonialism and capitalism have and continue to make Indigenous peoples particularly susceptible to infectious diseases like COVID-19; they have disproportionately higher rates of poverty, non-communicable diseases, infant and maternal mortality, mental illness, infectious diseases (such as tuberculosis and HIV/AIDS), and a life expectancy gap of up to 20 years (The Lancet, 2020; United Nations, 2020; Menton et al., 2021). Recent studies in Brazil have found a higher, underreported and disproportionate burden of COVID-19 on the Indigenous population, and greater risk of infection spread into Indigenous territories through illegal economic activities during lockdown (Fellows et al., 2021; Santos et al., 2021). However, framed within alternative theories of post-disaster recovery (Cretney, 2016), the COVID-19 pandemic could be viewed as an agent of progressive social change and transformation, and "*crisis as an intense period of change and flux in which new values and ways of being in society can be nurtured*" (p.5). For Indigenous peoples, it is also critical to disrupt deficit narratives that focus on Indigenous difference, disparity, disadvantage, dysfunction and deprivation (Walter, 2016, 2018), and challenge discourses of the passive disaster victim with limited agency and power (Solnit, 2009).

This paper aims to enrich the discussion about the implications of the COVID-19 crisis as an opportunity for change and transformation (Lawson, 2005). Our study took place in the North Rupununi, Guyana, where we were already working with Indigenous communities on a longer-term project looking at the inclusion of traditional knowledge in conservation decision-making. When COVID-19 hit in March 2020 and project activities in the region stopped, anecdotal evidence through personal contacts and social media suggested that many Indigenous communities in Guyana had turned to traditional farming, hunting and fishing to survive during the pandemic. This brought up questions about the everyday realities of disaster experience, and the role of government and NGOs in supporting Indigenous communities. However, it also opened up wider discussions on the significance of subsistence livelihoods to Indigenous economies.

As in other parts of the world, Indigenous communities in Guyana have historically, and continue today, to be encouraged, coerced and/or incentivised to integrate into the capitalist global market economy. In the North Rupununi, historical economic processes, such as the introduction and management of the cattle industry in the savannas, played a significant role in disrupting traditional livelihoods and governance (Colchester, 1997), and creating dependency, that in recent times, has continued in the form of 'welfare colonialism', and dependency on NGOs and corporations and their conditions for partnerships (MacDonald, 2016; Whitaker, 2020).

Contemporary Indigenous economic discourses in Guyana focus on entrepreneurship and the creation of businesses, such as ecotourism, or the development of commercial forms of agriculture for regional markets. However, there is limited capacity, training and support for sustainable business management, and commercial agricultural ventures in the North Rupununi have to date focused in the savanna, which is culturally and ecological problematic. Savannas require considerable inputs of fertilizer and pesticide to make them productive, although this does not necessarily contribute to commercial viability given the high costs of these inputs. In addition, emphasis on business creation encourages Indigenous communities to invest the grants they receive from the government and international donor agencies in buildings and material goods, such as outboard engines, tractors and fridges, many of which quickly breakdown and fall into disarray. This is within a broader tension of framing Indigenous identities as either 'modern' or 'traditional' by both Indigenous peoples and external actors, an unrealistic narrative that fails to reflect the agency and autonomy of Indigenous peoples in the processes of engaging with modernity (Mistry et al., 2015).

Kuokkanen (2011) notes that *"....the continued significance of Indigenous economies extends well beyond receiving a livelihood to matters such as the maintenance of social organization and kinship structures as well as systems of values and knowledge"* (p.278). Indeed, our research with Indigenous communities in the North Rupununi shows how livelihood practices are intimately linked through Indigenous knowledge, local governance and values, and partnerships and networks (Mistry et al., 2016). For example, farming is not just an agricultural technique, but an integral part of the Indigenous way of life (Jafferally, 2016;

Jafferally et al., 2021). Also termed 'swidden agriculture', Indigenous farming takes place within forest environments, where normally plots of one hectare or less are cleared, burned, and then planted for a number of years, before being left to fallow and recover. When adequate fallow periods are applied, this form of rotational agriculture improves soil water and nutrient retention, reduces erosion and degradation, increases agrobiodiversity, reduces carbon emissions, and enables carbon sequestration through biochar while not requiring the import of expensive machinery, pesticide and fertilizer (Bruun et al., 2009; Coomes et al., 2000). It also reinforces connectedness to the environment and Indigenous knowledge as people experiment and solve their own problems (Mistry et al., 2016).

Indigenous identity, culture and social organization are all integrally linked with the daily practices of growing cassava (the staple crop), and processing it into food and beverages (Elias et al., 2000; Schacht, 2013). Cassava is used to produce: farine and cassava bread, made from the meal of the grated cassava after the juice is squeezed out; starch and tapioca, made from the starchy substance that settles out when the liquid is allowed to stand; casreep, a dark brown to black viscous liquid made from the cassava juice boiled down; and various alcoholic drinks, such as kasiri, made from boiled cassava and purple sweet potatoes. All of these cassava products play a role in everyday life, individual, family and community activities, as well as in celebrations and non-human spiritual encounters. Thus, growing cassava is more than nutrition – it is intimately tied into the fabric of Indigenous life and the way the environment is used and conserved.

The COVID-19 pandemic has shown that we need to go beyond the current hegemonic idea of capitalist development based on economic growth, capital accumulation and increased consumption of goods and services, towards more sustainable, fair, healthy, caring and resilient development models (Büscher et al., 2021). An Indigenous livelihood portfolio could be a framework for a post-COVID society (Matias, 2021), where collectiveness, connectedness and solidarity underpin social-ecological relations (Mistry et al., 2014). Nevertheless, as Feola (2020) argues, capitalism is not a 'landscape' factor, but rather permeates the workings of social-ecological systems, and in the case of Indigenous peoples, continues to erode their traditional knowledge, self-esteem and ability to equitably participate in governance and decision making. The COVID-19 pandemic may have been an opportunity to start deconstructing the existing institutions, forms of knowledge, practices, imaginaries and power structures, to begin 'unmaking' (Feola et al., 2021) for more sustainable and just futures.

Using our alternative framing of crisis as an opportunity for transformational change, we supported eight Indigenous communities in the North Rupununi in using participatory video to assess the impacts of COVID-19. How did Indigenous communities in the North Rupununi deal with lockdowns and restrictions on movement in a context where farming, fishing and hunting are everyday livelihood activities for survival? How did they perceive the external help they received? What forms of resistance and experimentation were undertaken, and to what extent did the crisis help re-create and promote Indigenous values and knowledge that lie at the heart of their beliefs and practices?

## Research Background and Methods

The research was shaped by strong and long-term collaborations with Indigenous communities in the North Rupununi, Guyana, and co-designed with their representative organisation (and partner in the project), the North Rupununi District Development Board (NRDDB). We, the authors of this paper, are a group of Guyanese Indigenous, Guyanese Coastlander, and UK-based, white and non-white researchers, who share a common goal to improve the lives, environments and rights of Indigenous peoples. We have worked and published together on a number of previous projects in the North Rupununi (e.g. Berardi et al., 2013, 2017; Mistry et al., 2014), and have a deep understanding of the historical and contemporary social, political and economic factors affecting Indigenous communities in the region. During 2020 and the height of the COVID-19 pandemic, we were involved in a Darwin Initiative, UK-government funded project focused on enabling greater inclusion of Indigenous knowledge in conservation. While field research with Indigenous communities came to a standstill, we continued to maintain communications with each other and with our partners to understand how people were coping with the pandemic and its restrictions. Thus, when the Darwin Initiative released a COVID-19 rapid response call for projects, we took the opportunity to build on those communications and anecdotal information coming from social media, to look in more detail at Indigenous perspectives on, and practices during, the pandemic. This research took place between January and April 2021.

We drew from Indigenous methodological approaches where research processes and practices take Indigenous worldviews, perspectives, values and lived experience as their central axis (Smith, 1999; Louis, 2007; Kovach, 2009). To explore the realities of Indigenous people's lives in relation to the pandemic, we used participatory video, a visual method that allows groups or communities to tell their own stories about things that matter to them (Shaw, 2015). Through cycles of planning, filming, editing and screening, participatory video allows people to create their own narratives on an issue and provides opportunities for individual and group reflection and discussion. We have been working with Indigenous communities through participatory video for many years (e.g. Mistry et al., 2014, 2015, 2022), and as part of the larger Darwin Initiative project, had already developed a network of community peer researchers in several villages in the North Rupununi.

From a broad topic of exploring the positive and negative impacts of COVID-19 on local livelihoods, further consultation with the NRDDB led to a focus on farming, the impact of COVID-19 on people, community life and traditional knowledge, and leadership during the pandemic. Indigenous senior researchers, and co-authors of this paper, contributed to the design of the research, and at a practical level, led the research activities in the communities (Figure 1). They have prior and extensive experience of participatory research in their communities, and organised and facilitated interviews, filming and workshops. They worked directly with the trained community peer researchers in each village, and synthesised video material for non-Indigenous audiences.

We worked directly with Makushi and Wapichan community members from the North Rupununi villages of Aranaputa (n=7), Annai (n=13), Rupertee (n=13), Kwatamang (n=10), Apoteri (n=8), Fair View (n=9), Rewa (n=7) and Wowetta (n=12) (Figure 2). From the 79 storytellers, 32 were male and 47 were female. We followed the Right of Free, Prior and Informed Consent (FPIC) processes stated in the 2007 United Nations Declaration on the Rights of Indigenous Peoples. All efforts were made to ensure participants were thoroughly informed of project details, including aim, methodology, conditions of participation and intended output distribution. A visual consent form - outlining project details, conditions of



**Figure 1.** Indigenous senior researcher Rebecca Xavier (co-author) facilitating participatory video (Photo credit: Claudia Nuzzo)

participation and intended output distribution - developed by the Indigenous senior researchers - was used. Our Guyanese research permit and health and safety risk assessment was reviewed and updated in line with project activities and COVID-19 measures. In addition, the research underwent a full ethics review at Royal Holloway University of London (UK).

We established data management protocols through the FPIC process. No personal data beyond name, age and village was collected. Data, including any video recordings and resulting films, is owned by the communities in which they were obtained, with storage and access negotiated and agreed at the start of the project. Participants could request for any video recordings made of them to be deleted without requiring justification. Our screenings of video material to individuals and within communities aimed to ensure the highest standards



of editing ethics, representation and informed consent. Video footage was first broadcast within the contributor groups, and then permission sought for broadcasting to other stakeholder groups and for inclusion online. All materials agreed by the Indigenous communities to be publicly available is licensed under the Creative Commons "Attribution Non-Commercial No Derivatives" protocol. This stipulates that any distribution of original material will need to have the original authors cited, the material cannot be used for profit-making purposes, and the material cannot be modified/edited/remixed without the consent of the original contributors.



**Figure 2.** Map showing location of communities directly working in the research  
(Kindly drawn by Jen Thornton)

All necessary travel and subsistence costs for participants were covered by the research funds. Community peer researchers were paid stipends commensurate with local salary scales and agreed by village Toshao (leaders) and councillors. The Guyanese research team assessed health and safety, with a specific focus on COVID-19, working closely with village leaders on safety measures and access. In line with Indigenous customs of communal provision

and sharing of food at events, but with COVID safety measures in mind, we provided snacks but this was done at the end of the session as people were leaving to go home. Each screening took place in the evening to allow for use of outdoor venues and to facilitate social distancing. Sanitiser and masks were provided at all meetings and screenings to ensure everyone's safety.

Once footage was collected, it was screened to the wider community for feedback and identification of further research. This material was jointly reviewed by the community peer and Indigenous senior researchers, with the editing of the videos completed by an Indigenous senior researcher. Drafts of final videos were screened back to the communities for final comments and changes, and to obtain final consent for public sharing and distribution. The three final videos produced are:

Impact of Covid-19 on community life: <https://vimeo.com/559858524>

The impacts of Covid-19 on Indigenous farming: <https://vimeo.com/557549563>

Leadership during the Covid-19 pandemic: <https://vimeo.com/557527688>

Over 20 hours of footage were collected and transcribed. We later screened the videos to leaders of Indigenous associations in the region, namely the NRDDDB, Kanuku Mountains Community Representative Group (KMCRG) and the South Rupununi District Council (SRDC), and to the Ministry of Amerindian Affairs (MoAA) and the Ministry of Agriculture (MoAgri). The aim of the screenings was to open a dialogue between communities and decision-makers on community issues/concerns and ways in which decision-makers could support communities – both short-term and long-term. Thus, our data comprised of the raw footage, and feedback / discussions from community and decision-maker screenings. Using a grounded theory approach (Charmaz, 2006), our data analysis identified the emergence of dominant narratives and themes from the visual and audio materials. We used a process of triangulation between the different data sources, and shared the interim results for feedback from participants through the Indigenous senior researchers. The results are grouped together below around four themes: the (limited) information and support provided to Indigenous communities, particularly at the start of the pandemic; having to therefore rely on oneself and others; forms of resistance during the crisis, and; the recognition of the importance of their traditional knowledge.

## Results

### *Information and Support*

When the pandemic first hit the Indigenous communities in the North Rupununi, many people were not clear what COVID was: *"It was very bad. My partner couldn't eat at all. We did not know what it was even though people were talking about it"*.

Hearing about the symptoms, many people believed they had COVID but were not tested, so although they might have had COVID, it could also have been other common illnesses such as dengue and malaria. Although there were the immediate effects of getting sick, people carried on with daily life as recalled by this woman from Annai Village:

Suddenly I started to get high fever, headaches, shortness of breath. But I was strong, I was able to overcome it. After that I did not taste anything, didn't smell anything. Even though I was suffering with this, I manage to parch [roast] my farine.

At the same time, feedback from screenings revealed that individuals who contracted the virus were (in some cases) shunned even after recovery from the illness. This was due to lack of information and associated high degree of fear of the virus: *"My neighbours were afraid of me, they were not visiting anymore like before, we were not gaffing anymore with our friends. Before they heard of COVID, everybody was socialising good"*.

With limited access to the internet, few doctors in local clinics and intermittent Ministry of Health radio broadcasts in areas where the FM signal is strong enough, most people were informed through social interaction with family, friends and neighbours, and subsequently when government representatives came into the region. Comments from Indigenous leaders during screenings pointed out how the use of 'lockdown/stay home' directives from the government during the initial onset of the pandemic did not correlate with Indigenous culture where their livelihoods require them to be out, active and communal. As stated by an Indigenous leader during a screening:

Many of the national measures did not take into consideration Indigenous peoples culture. You cannot tell an Indigenous man to stay home. When he has to fish, he has to farm, he has to hunt to get food. Not like in the city you jump in your car and head to the supermarket and come back. No! So the measures were not culturally appropriate.

This could explain the variability in local leaders' responses. Whereas some Tshaos and councils were pro-active, setting up community task forces and going individually to households to inform them about the virus and safety measures, in other cases, the response was slower and leaders were wary to enforce restrictions in light of peoples' subsistence needs:

When Covid was hot in the region....we hold a community meeting based on COVID-19, no other subject. That is where we talk about social distancing, you cannot mix around with people as before and you cannot take a trip to Annai, Lethem, Georgetown. We didn't want to lose our people, especially the pensioners.

I would say it was 50/50. We were informed but not seriously. Our leader part was not much serious about it.

The leadership was not really informed. They was not trained to do anything, for them to come back and tell the villagers. They were just informed through internet and couple people they [government] sent.

At the start of the pandemic, help for the communities came in the form of safety equipment, such as sanitiser, masks and hand soap, as well as food hampers, provided mainly

by national organisations such as Iwokrama International Centre (conservation organisation), Amerindian Peoples Association (Indigenous rights organisation), Guyana Tourism Authority (tourism agency) and the Rotary Club. At the same time, communities took their own steps to sew masks and to inform all sections of the community (e.g. to children and young adults through wildlife clubs) about the risks and safety precautions.

In November/December 2020, as part of a national initiative, the government gave all households a GY\$25,000<sup>1</sup> (~£86 at the time) cash grant, and some private individuals and the government also provided further food hampers: *"That [GY\$25,000] came in handy because remember persons were laid off from work and the little grant that they give, everybody was happy and they bought rations for their household and important basic house needs"*.

Although most people were happy to receive these emergency funds to buy essential provisions, the effort was not consistent across all communities or all individuals within communities. For example, multiple family households only received GY\$25,000, if you were a renter and the landlord was living on the site you did not get the grant, and if you were not at home, you did not get the grant. This obviously resulted in disappointment, anxiety and anger amongst the communities. In Fair View village, funds from the Village Treasury, money from their timber sales, was used to provide a cash grant to villagers: *"The village council give us GY\$50,000 dollars grant from the village treasury. Who went collected the money, we went to Lethem to purchase the ration"*.

However, as with the hampers, this was not consistent across all community members, and led to confusion and disappointment. Later, in January 2021, the Ministry of Amerindian Affairs provided COVID-19 Relief Fund grants of GY\$5-10 million (~£20,000-40,000) per village to stimulate the local village economy. However, there was little initial indication or advice given on how the funds could be used, or support on the kinds of economic ventures possible, and how the village council could get products to market. It is unclear how such funds contributed to mitigating the impacts of COVID-19. For example, in some cases, after ministry suggestions, villages used these funds for ICT infrastructure, in others for solar panels. During the video screenings, the Ministry of Amerindian Affairs acknowledged that a better approach could have been taken:

A problem we are getting right now is the spending of the grant. Some communities already spend it out without a proper proposal. When they first received the funds, they did receive a letter with guidelines. Amount of fund given to community depended on the population size. Letter to communities is difficult still. It would have been better to have someone to explain in their language how the funds should be utilized. What might have been better is the same presidential grant approach where they have to submit a proposal first.

---

<sup>1</sup> This amount of money would roughly cover food and transportation for a month for a family of four.

The overall impression from the videos and screenings was that there needed to be far greater and more continuous support to communities by the government to provide supplies and relief during the pandemic. As mentioned by an Indigenous leader during a screening:

I think there is a little bit of misinformation in regards to the supplies that people have. A lot of people, if you listen to it carefully and this time I did that, felt it was the regional government. The things that were received in the North were not from the regional government. Luckily, we have our partners and they were able to get those things for us. Even the food hampers. The food hampers that we received I think was actually through the APA [Amerindian Peoples Association]. But all of this starts to get lost in the whole administrative thing.

### ***Self-Reliance and Self-Help***

Almost half the households in the Rupununi region are involved in wage labour, in sector jobs such as labourers, miners, teachers and within tourism (Conservation International, 2016). Many of the storytellers particularly mentioned the loss of paid work within the tourism sector during Covid. For example, the Iwokrama International Centre has an eco-lodge within the Iwokrama Forest where Indigenous community members are employed as cooks, cleaners, guides and boat captains: *"I does work with Iwokrama as a captain of the boat and I have been working for years with them. But the work there close because no tourist is coming due to COVID"*.

Some villages have their own ecotourism businesses, such as Rewa, whereas others have small-scale enterprises such as Aranaputa's peanut butter factory. Other community members supply specialised goods, such as craft, to eco-lodges:

I make handicraft and sell. This is how it [COVID] really affected me because no tourist you have today in the country. Business gone down flat.

I was employed at the Aranaputa Peanut Butter factory. After COVID came, the schools had to close, a lot of businesses stop buying our stuff, so we had to close the factory. Right away there was a loss of income. It really affected the whole organisation.

Thus, the paralysis of tourism and other income generating livelihoods had and continues to have a significant impact in the region, and potentially has a greater impact on women who have a greater presence in the tourism and food processing sector (Conservation International, 2016).

With the immediate closure of schools and businesses and the lack of jobs and paid work, people turned to farming (as well as fishing and hunting) to sustain their lives (Figure 3), and in some cases, larger farms were cut:

Since this COVID take place, it is an improvement in my life that I go out to my farm and do my farm work, cut more farm than what I use to before.

I started the farming after COVID came in. You couldn't be going to work, you have to be at home so we started to go in the farm, with our aunt actually, started helping she out, and eventually starting a farm of our own.

When COVID step in, nobody can move anywhere to buy anything, to bring nothing, so there and then everyone eye open and say how we gonna survive? We have to do farming. Everybody starts cutting farm.

Almost everyone got farm now. We have a lot of farm than before, almost every household has a farm.

People realised that not only did they have to grow more cassava, they also needed to plant a greater diversity of crops overall to maintain themselves:

I've been affected financially, but nevertheless my farm has supported me. I've planted cassava, vegetables, fruits, and that is how I maintain myself.

We plant a lot of crops which we never plant. Main thing we used to plant was cassava, not only myself but also the other people. But today, people have 1 or 2 farms just like me, and we have banana, [sweet] potatoes, sugarcane and different crops we planted.



Figure 3. Villagers preparing a farm during the lockdown (Photo credit: Grace Albert)

Self-help (termed 'Epikatîn' in Makushi and 'Kaiyap' in Wapishan) is still an important part of Indigenous livelihoods in the North Rupununi (Mistry et al., 2016). In a region where public (and private) services are limited and cannot be relied upon to carry out day-to-day community activities, such as cleaning and maintaining communal spaces, or carrying out heavy tasks like cutting down patches of forest to grow a farm, communities use self-help to get tasks done. During the pandemic, some people were selling their surplus produce, especially cassava, but many more were helping and supporting those who did not have farms or were not able to farm. This was particularly true for people who worked in sectors like education, health and tourism, and at the beginning of the pandemic: *"Since then [COVID] I have a large farm where I could mind my children, feed my family, whoever was related to me, those who didn't had no farms, I help them in that way"*. With people cutting more and/or larger farms, greater group effort was needed in supporting the clearing and planting of the land. At the same time, people were also sharing meat when they hunted or fished, while others made medicine or went looking for certain traditional medicinal ingredients to make specific drinks or tonics.

### **Resistance**

Once the lockdown was instated and the gravity of the situation became apparent, many people moved from the village to their remote farms or 'backdams' (Figure 4), which can be up to a day or more engine boat ride from a household's main residence, to wait out the pandemic:

When I heard about it [COVID] for the first time, rumours said that you will get sick and everybody will die. So, we decide now that we don't want to catch the sickness, so we came to the backdam, I brought my family. We came and we are here for past six months.

[In the village] sometimes you don't hear no one anymore, no music, nothing, like everyone die. They say where all the people and then you realise everyone in their farm, everyone move out.

Self-isolation has a long history among Indigenous peoples and can be both a pragmatic decision to protect themselves from disease and a political act of resistance to domination by outsiders (Menton et al., 2021). For example, the violent response of the state to Indigenous communities in the North Rupununi during the 1969 Rupununi Uprising caused many people to flee villages for the forest where they remained for several months (Mistry et al., 2014). Moving to the backdam was not a huge burden, and if anything, communal life continued there as normal, with social gatherings and sports events such as football a part of everyday activities.

While retreating to the forest was a protective measure during the pandemic, as the lockdown took hold and it became clear that communities would need to act on their own, the issue of territorial and land access came to the fore. With the Georgetown to Lethem road running through the Rupununi (see Figure 2), communities were aware



of their vulnerability, particularly those situated close to or alongside the road such as Wowetta, Rupertee and Aranaputa. Communities reported that their own movement was restricted, and they could not see family members living in other villages and towns: *"I have a daughter in Georgetown, but we can't go to Georgetown, we can't go anywhere, nobody wants to take the chance"*. However, some private sector activities, such as mining, were defined as 'essential services' and allowed to continue, and miners received special permission to continue to travel through the region to designated mining sites in the South Rupununi. There was fear that the restrictions on movement by communities, while allowing some miners for example, to travel would conceal potential illegal activities focused on resource extraction, while enabling the spread of the virus.



**Figure 4.** The backdam (Photo credit: Grace Albert)

In response, many communities mobilised themselves to install twenty-four hour manned physical gates on the main Georgetown-Lethem road, as well as on access roads, to prevent outsiders from spreading the infection, to share health information amongst their community, and to monitor and restrict their own movements to and from their land. Wowetta, for example, set up their own check point to prevent people from moving in and out of the village after the 6pm national curfew. As indicated by an Indigenous leader during the screening: *"The community gates are something that was very good. Because those gates .. helped us to minimise a lot of illegal actions of COVID into the territory"*.



Communities organised patrols to limit people entering their communities, and task forces to monitor the ongoing situation:

The village task force is very important. Every Tuesday we had our task force meeting. And listening to these videos, these task force meetings were very important because it allows you now to sit review the situation, what needs to be done and you go out and do. So having that weekly task force meeting was something good.

### ***Re-Valorising Knowledge***

Although those who stayed in the village felt the lack of social life, in many respects these aspects of village life moved to the backdam, where social gatherings and sports events continued. This movement of people to the backdams and having to rely on traditional ways allowed people to re-engage and re-valorise their traditional knowledge. As stated by an Indigenous leader during a screening:

[COVID] also brings out the strength, especially in Indigenous people. Where we survive off nature. Our farming systems are very intact; to farm we haven't lost that traditional knowledge of farming. So I guess in that manner it allows the youths to learn some of these skills, the craft. Although you might not be able to do it on a commercial base, you now have the time to learn these things. You have the time in hand to really learning back at home. Most of the homes if you check now are going back to their traditional knowledge.

During a screening, the Ministry of Amerindian Affairs also acknowledged the importance of traditional knowledge:

Focusing on farming, what I see as the message is that traditional knowledge is very important to survival – not only farming, but also traditional medicine. This help to protect them. So traditional knowledge played an important role in helping them to overcome the pandemic.

For many elders, the pandemic reaffirmed their subsistence-based livelihoods and knowledge of bush medicines, and their capacity to respond and adapt to crises using their traditional knowledge:

After the people affected tested positive, we used a lot of bush medicine, together with some other stuff like ginger, garlic, limes, lemons, papaw leaves and so on, we tried a lot to save ourselves.

For me, it is not difficult [to deal with COVID] because I live this life. Not like them young people that want fancy things to put on their eyes, on their foot, they have to get this, and if they didn't eat that they don't feel good. Me, I live just like this, whatever I get to eat. If I eat just farine and salt, I satisfy as long I wake up next day. We old people not gonna feel it because we accustom with our farine and cassava bread.

And for younger people, moving to the backdam and having time to engage in family and community activities, gave them an opportunity to reflect on their knowledge and their relations with older members of their society:

In my community, many people depend on traditional knowledge to do farming, to do medicines, also traditional hunting. As Amerindian people we depend on our knowledge in order to survive. We will keep it and we will continue to do so because that is the only way we will survive.

COVID-19 has changed my life from being that person I was before, to be a more hardworking young lady. I am more willing now. I am not lazy to work in the farm. I get more access to older people, I get knowledge from them, I talk to them more. I ask them more questions about farming which I never did before.

## Discussion

The COVID-19 pandemic made visible existing non-capitalist practices and forms of solidarity and care through reciprocal practices that prioritise subsistence needs, local knowledge, wellbeing and defending land and its resources (Córdoba et al., 2021; Walters et al., 2021). Our results show that the limited support measures offered by the state and other para-national organisations in many ways replicates the 'assistentialist' model of capitalism, where marginalised communities, such as Indigenous peoples, are 'helped' during shocks by the state, in close collaboration with corporations. This can often enhance 'learned helplessness' - making communities believe that in times of crisis they cannot do anything but wait for help. However, what we see in the North Rupununi is that the limited and random reach of external support actually catalysed communities to put in place their customary mechanisms of support.

Farming as an Indigenous economic livelihood became centre stage in the response to drastically reduced options for earning cash and buying food, and the limited support from the state. Together with fishing, hunting and gathering, COVID-19 showed that farming as an Indigenous economic practice, dependent on shared resources managed collectively, can persist through crises in ways that other forms of economic organisation simply cannot (Leach et al., 2021). Using 28 cases from across the world, Thorpe and Gaventa (2020) show how local economic activity can be profitable, inclusive and sustainable where networks and coalitions are central to economic activity, there is deliberation for distributed decision-making and where knowledge is democratised for collective action. Yet, despite these features being emphasised in economic responses to COVID-19 in Guyana and elsewhere, "*....the [continued] narrow focus on fairly standard economic development...contributes to the common practice of making these [local livelihood] economic activities invisible and thus non-existent in current considerations*" (Kuokkanen, 2011, p.284).

Solidarity and reciprocity, with the human and non-human worlds, are key facets of the Indigenous worldview upon which knowledge and practices are based (Mistry et al., 2020). Food and nourishment are central to practices of reciprocity in the North Rupununi; not only

do people share and exchange food, but food preparation and processing is often done collectively and self-help in itself is underpinned by food sharing for mutual benefit where people jointly contribute to the food and beverages for specific events (Jafferally, 2016). As we saw during the pandemic, people were helping family members, other villagers, and contributing to village-level activities such as patrolling access gates, reinforcing their sense of connectedness and collectiveness. Thus, we need to see the pandemic as a *"catalyst for longstanding recognition of grassroots processes"* such as reciprocity, rather than *"a mere response for survival and uncritical of power, hegemony, and the ongoing resistance to neoliberalism"* (Córdoba et al., 2021, p. 8).

This acknowledgement of the inherent values of Indigenous worldviews is also important to counter dominant narratives of Indigenous peoples as vulnerable and in need of external help and protection (Mistry et al., 2014). As we see in the North Rupununi, Indigenous communities were not passive recipients of aid, but were champions in showing how their way of life and livelihoods could not only actively respond to the pandemic, but be a more resilient, post-capitalist alternative for a post-COVID society (Matias, 2021), and for a future where further shocks, including climate change related such as flooding, are inevitable.

It is evident in healthcare provision that despite the United Nations Declaration for the Rights of Indigenous Peoples speaking to the right to have access, free from discrimination, to all social and health services, Indigenous populations worldwide are exposed to greater risk of disease through the degradation of their territories, combined with a history of racist structural neglect. In Brazil, Indigenous peoples have faced *"genocide by omission"* or *"genocide by attrition"*, where inaction does not occur by accident but is a political decision that leads to negative health consequences (Milanez, 2020). And in Guyana, a lack of trained health personnel, inadequate health care infrastructure and unavailability of medication means there is only a basic level of health care available to Indigenous peoples at the village level (UNICEF, 2017). However, what our study shows is that the response of Indigenous communities to COVID-19 provides *"... a state of social possibility; of latent connectivity with others to create more just ways of organising communities"* (Mould et al., 2022, p.2), which we can all learn from.

At the same time, the pandemic gave the North Rupununi communities themselves the opportunity and time to reflect on their practices, and the ways in which past knowledge is unconsciously and continually readjusted in dynamic and transformative spirals to fit the present. This collective or social memory has the potential to maintain an intimate relationship with place and reinforce Indigenous identity (Mistry et al., 2014), and learning from *"... previous struggles across times and spaces is the lifeblood of autonomy, providing sociospatial reference points for projecting autonomous visions into the present and future"* (Pickerill and Chatterton, 2006, p.735). The recognition that their traditional knowledge was not only culturally important but necessary for survival during the pandemic, gave it a newfound relevance and legitimacy, particularly for young people. This re-valorisation of traditional knowledge is an important step in the deconstruction or 'unmaking' of mental models that

support capitalist modernity and the construction or 'making' of post-capitalist realities (Feola et al., 2021).

The farm, in particular, is a central place where intergenerational transfer of knowledge between older and younger takes place and the social memory is built:

*There is no differentiation between the stories and life principles told at home in front of the fire or those told at the farm.... All of it was aimed at making the children more knowledgeable, especially those who have reached puberty, to instil the values of the tribe about how to live, the attitude you should have about working, their role as a husband or wife, their role in the community, how family and neighbour were treated, the traditional practices of farming, hunting fishing, collecting forest resources, identifying good sites for farming etc. These are the lessons that the children would be taught, and in the future pass on to the next generation (Jafferally, 2016, pp.215-216).*

While the pandemic gave people time and space to be in the farm as an extended lived experience, it also revealed knowledge that has already been lost as elder community members die, through incomplete transmission of knowledge as there is less information on skills and practices available to the mature population, and the influence of formal schooling and the church (Jafferally, 2016). The case of cassava varieties is particularly pertinent. There has been a downward trend in cassava diversity from 139 cultivars of bitter cassava and 8 of sweet cassava recorded in 1997, a total of 114 varieties recorded in 2012, 69 varieties in 2017, and 29 varieties in 2021 (Mistry et al., 2021b). A greater focus in recent times on production has also contributed to this loss; for the market, short-term production is key and varieties such as the 'Amazon Stick' – a new fast growing cassava variety (introduced from Brazil through the government national agricultural research and extension institute during the 1997 El Nino) have become dominant "*because it bear more, faster and bigger*". Being more integrated in the market economy can help to purchase food or services to improve livelihoods. However, the loss of agrodiversity can limit farmers' capacity to cope with risk and uncertainty and could ultimately increase their vulnerability to external shocks such as COVID-19 (van Vliet et al., 2012).

## Conclusion

With the discovery of large offshore oil deposits, Guyana is forecast to become the fastest growing economy in South America (Panelli, 2019). At the same time, it has some of the largest stands of intact tropical forest and is a key player in the REDD+ climate change mitigation policy to reduce deforestation and maintain its carbon stock (Smith et al., 2019). Both these developments will bring economic growth to the country, and potentially greater economic opportunities for its people. A push by the government on market-based interventions for Indigenous economic development may in the short-term improve Indigenous incomes but has potential long-term negative repercussions on norms of reciprocity, solidarity, and traditional knowledge underpinning Indigenous livelihoods as

shown by the COVID-19 pandemic. Greater support for Indigenous livelihood practices, such as farming, and recognising tenure rights, on the other hand, will give Indigenous communities the capacity to determine access to and use of nature, and an ability to govern and defend their lands and waters in an unpredictable social-ecological future.

## Acknowledgements

We would like to thank all the community members from the North Rupununi, Guyana who participated in this research, particularly the people of Aranaputa, Annai, Fair View, Rewa, Rupertee, Kwatamang, Apoteri and Wowetta. We would also like to thank the North Rupununi District Development Board for their constant and ongoing support.

## References

- Berardi, Andrea, Céline Tschirhart, Jayalaxshmi Mistry, et al. 2013. "From resilience to viability: a case study of indigenous communities of the North Rupununi, Guyana," *EchoGéo* 24: <http://echogeo.revues.org/13411>
- Berardi, Andrea, Jayalaxshmi Mistry, Lakeram Haynes, et al. 2017. Using visual approaches with Indigenous communities. In *Mapping environmental sustainability*, edited by Sue Oreszczyn and Andy Lane, 103-129. Bristol: The Policy Press.
- Bruun, Thilde Bech, Andreas de Neergaard, Deborah Lawrence, et al. 2009. "Environmental consequences of the demise in swidden cultivation in Southeast Asia: carbon storage and soil quality," *Human Ecology* 37(3): 375-388.
- Büscher, Bram, Giuseppe Feola, Andrew Fischer, et al. 2021. "Planning for a world beyond COVID-19: Five pillars for post-neoliberal development," *World Development* 140: 105357.
- Charmaz, Kathy (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London; Sage.
- Colchester, Marcus. 1997. *Guyana Fragile Frontier: Loggers, Miners and Forest Peoples*. London: Latin America Bureau.
- Coomes, Oliver T., Franque Grimard, and Graeme J. Burt. 2000. "Tropical forests and shifting cultivation: secondary forest fallow dynamics among traditional farmers of the Peruvian Amazon," *Ecological Economics* 32(1): 109-124.
- Conservation International. 2016. *The Rupununi economic and environmental baseline report*. Georgetown, Guyana: Conservation International.

- Córdoba, Diana, Ana Maria Peredo, and Paola Chaves. 2021. "Shaping alternatives to development: Solidarity and reciprocity in the Andes during COVID-19," *World Development* 139: 105323.
- Cretney, Raven Marie 2016. "Local responses to disaster. The value of community led post disaster response action in a resilience framework," *Disaster Prevention and Management* 25(1): 27-40.
- Elias, Marianne, Laura Rival, and Doyle McKey. 2000. "Perception and management of cassava (*Manihot esculenta* Crantz) diversity among Makushi Amerindians of Guyana (South America)," *Journal of Ethnobiology* 20(2): 239-265.
- Fellows, Martha, Valéria Paye, Ane Alencar, et al. 2021. "Under-Reporting of COVID-19 Cases Among Indigenous Peoples in Brazil: A New Expression of Old Inequalities," *Frontiers in Psychiatry* 12: 638359.
- Feola, Giuseppe. 2020. "Capitalism in sustainability transitions research: Time for a critical turn?," *Environmental Innovation and Societal Transitions* 35: 241-250.
- Feola, Giuseppe, Olga Koretskaya and Danika Moore. 2021. "(Un)making in sustainability transformation beyond capitalism," *Global Environmental Change* 69: 102290
- Fernández-Llamazares, Álvaro, Dana Lepofsky, Ken Lertzman, et al. 2021. "Scientists' Warning to Humanity on Threats to Indigenous and Local Knowledge Systems," *Journal of Ethnobiology* 41(2): 144-169.
- IPBES. 2019. *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, edited by Eduardo S. Brondizio, Josef Settele, Sandra Díaz et al. Bonn, Germany: IPBES secretariat.
- Jafferally, Deirdre. 2016. *The implications of changing Makushi identity and traditional practices for forest conservation in Guyana*. PhD thesis, Royal Holloway University of London, UK.
- Jafferally, Deirdre, Jayalaxshmi Mistry, Sean Mendonca, et al. 2021. *Community owned solutions for biodiversity conservation in Guyana*. Report published by the Traditional Knowledge in Guyana Partnership, UK. URL: [www.cobracollective.org/resources](http://www.cobracollective.org/resources)
- Kovach, Margaret. 2009. *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. Toronto: University of Toronto Press.
- Kuokkanen, Rauna. 2011. "From Indigenous economies to market-based self-governance: a feminist political economy analysis," *Canadian Journal of Political Science* 44(2): 275-297.
- Lawson, Victoria. 2005. "Hopeful Geographies - Imagining Ethical Alternatives: A commentary on J.K. Gibson-Graham's *Surplus Possibilities: Postdevelopment and Community Economies*," *Singapore Journal of Tropical Geography* 26(1): 36-38.

- Leach, Melissa, Hayley MacGregor, Ian Scoones, et al. 2021. "Post-pandemic transformations: How and why COVID-19 requires us to rethink development," *World Development* 138: 105233.
- Louis, Renee Pualani. 2007. "Can you hear us now? Voices from the margin: using Indigenous methodologies in geographic research," *Geographical Research* 45(2): 130-139.
- MacDonald, Katherine. 2016. "'No Trespassing': Changing and Contested Rights to Land in the Guyanese Amazon," *Journal of Latin American Geography* 15(1): 59-82.
- Matias, Denise Margaret S. 2021. "Indigenous livelihood portfolio as a framework for an ecological post-COVID-19 society," *Geoforum* 123: 12-13.
- Menton, Mary, Felipe Milanez, Jurema Souza, et al. 2021. "The COVID-19 pandemic intensified resource conflicts and indigenous resistance in Brazil," *World Development* 138: 105222.
- Milanez, Felipe. 2020. "Fighting the invisible anaconda amidst a war of conquest: notes of a genocide," *Ambiente & Sociedade*, 23: -11.
- Mistry, Jayalaxshmi, Andrea Berardi, Lakeram Haynes, et al. 2014. "The role of social memory in natural resource management: insights from participatory video," *Transactions of the Institute of British Geographers* 39(1): 115-127.
- Mistry, Jayalaxshmi, Andrea Berardi, Céline Tschirhart, et al. 2015. "Indigenous identity and environmental governance in Guyana, South America," *Cultural Geographies* 22(4): 689-712.
- Mistry, Jayalaxshmi, Andrea Berardi, Céline Tschirhart, et al. 2016. "Community owned solutions: identifying local best practices for social-ecological sustainability," *Ecology and Society* 21(2): 42.
- Mistry, Jayalaxshmi, Deirdre Jafferally, Lisa Ingwall-King, et al. 2020. Indigenous Knowledge. In *International Encyclopedia of Human Geography, 2nd edition*. vol. 7, edited by Audrey Kobayashi, 211-215. London: Elsevier.
- Mistry, Jayalaxshmi, Deirdre Jafferally, Rebecca Xavier, et al. 2021a. "Assessing the state of traditional knowledge at national level, Guyana," *Global Environmental Change* 71: 102409.
- Mistry, Jayalaxshmi, Deirdre Jafferally, Javier Ruiz-Ramos, et al. 2021b. *Covid-19 impacts on Indigenous food sovereignty, livelihoods and biodiversity, Guyana*. Report published by the Traditional Knowledge in Guyana Partnership, UK. URL: [www.cobracollective.org/resources](http://www.cobracollective.org/resources)
- Mistry, Jayalaxshmi, Deirdre Jafferally, Sean Mendonca, et al. 2022. "Video-mediated dialogue for promoting equity in protected areas conservation," *Oryx*: DOI: 10.1017/S0030605322000904

- Mould, Oli, Jennifer Cole, Adam Badger, et al. 2022. "Solidarity, not charity: Learning the lessons of the COVID-19 pandemic to reconceptualise the radicality of mutual aid," *Transactions of the Institute of British Geographers*: DOI: 10.1111/tran.12553.
- Panelli, Luis Fernando. 2019. "Is Guyana a new oil El Dorado?," *The Journal of World Energy Law & Business* 12: 365-368.
- Pickerill, Jenny and Paul Chatterton. 2006. "Notes Towards Autonomous Geographies: Creation, resistance and self-management as survival tactics," *Progress in Human Geography* 30(6): 730-746.
- Santos, Victor Santana, Adriano Antunes Souza Araújo, Jarbas Ribeiro de Oliveira, et al. 2021. "COVID-19 mortality among Indigenous people in Brazil: a nationwide register-based study," *Journal of Public Health* 43(2): e250–e251.
- Schacht, Ryan. 2013. Cassava and the Makushi: a shared history of resiliency and transformation. In *Food and Identity in the Caribbean*, edited by Hanna Garth, 15-29. London: Bloomsbury Publishing.
- Shaw, Jacqueline. 2015. "Re-grounding participatory video within community emergence towards social accountability," *Community Development Journal* 50(4): 624-643.
- Smith, Linda Tuhiwai. 1999. *Decolonizing Methodologies: Research and Indigenous Peoples*. Dunedin: University of Otago Press.
- Smith, Tonya, Janette Bulkan, Hisham Zerriffi, et al. 2019 "Indigenous peoples, local communities, and Payments for Ecosystem Services," *Canadian Geographer* 63 (4): 616-630.
- Solnit, Rebecca. 2009. *A Paradise Built in Hell: The extraordinary communities that arise in disasters*. New York, NY: Penguin Books.
- The Lancet. 2020. "Self-determination and Indigenous health," *The Lancet* 396(10248): 361.
- Thorpe, Jodie and John Gaventa. 2020. *Democratising economic power: The potential for meaningful participation in economic governance and decision-making*. IDS Working Paper 535. Brighton: IDS.
- UNICEF. 2017. *Study on Indigenous Women & Children in Guyana*. Georgetown: UNICEF Guyana.
- United Nations. 2020. *The Impact of COVID-19 on Indigenous Peoples*. Department of Economic and Social Affairs Policy Brief, 70.
- van Vliet, Nathalie, Ole Mertz, Andreas Heinemann et al. 2012. "Trends, drivers and impacts of changes in swidden cultivation in tropical forest-agriculture frontiers: A global assessment," *Global Environmental Change* 22(2): 418-429.



- Walter, Maggie. 2016. Data politics and Indigenous representation in Australian statistics. In *Indigenous Data Sovereignty: Towards an Agenda*, edited by Tahu Kukutai and John Taylor, 79-98. Canberra: ANU Press.
- Walter, Maggie. 2018. "The voice of Indigenous data: beyond the markers of disadvantage," *Griffith Review, First Things First*, 60: 256-263.
- Walters, Gretchen, Neema Pathak Broome, Marina Cracco et al. 2021. "Covid-19, Indigenous peoples, local communities and natural resource governance," *Parks* 27: 57-72.
- Whitaker, James Andrew. 2020. "Strategic alliance and the Plantationocene among the Makushi in Guyana," *Social Anthropology/Anthropologie Sociale* 28(4): 881-896.