



**EchoGéo**

41 | 2017  
juillet 2017/septembre 2017

---

# Ribeirinho Food Regimes, Socioeconomic Inclusion and Unsustainable Development of the Amazonian Floodplain

Tatiana Schor and Gustavo S. Azenha

---



## Electronic version

URL: <http://journals.openedition.org/echogeo/15052>

DOI: 10.4000/echogeo.15052

ISSN: 1963-1197

## Publisher

Pôle de recherche pour l'organisation et la diffusion de l'information géographique (CNRS UMR 8586)

## Electronic reference

Tatiana Schor and Gustavo S. Azenha, « Ribeirinho Food Regimes, Socioeconomic Inclusion and Unsustainable Development of the Amazonian Floodplain », *EchoGéo* [Online], 41 | 2017, Online since 28 September 2017, connection on 20 April 2019. URL : <http://journals.openedition.org/echogeo/15052> ; DOI : 10.4000/echogeo.15052

---

This text was automatically generated on 20 April 2019.

EchoGéo est mis à disposition selon les termes de la licence Creative Commons Attribution - Pas d'Utilisation Commerciale - Pas de Modification 4.0 International (CC BY-NC-ND)

---

# Ribeirinho Food Regimes, Socioeconomic Inclusion and Unsustainable Development of the Amazonian Floodplain

Tatiana Schor and Gustavo S. Azenha

---

*This article was produced in the context of the Ruth Cardoso Chair at the Lemann Center for Brazilian Studies, ILAS – Columbia University, with grant of Fulbright-CAPES, 2016-2017.*

## Introduction

- <sup>1</sup> In this paper, we examine contemporary *ribeirinho* communities of the Amazonian floodplain (*várzeas*), exploring transforming socioenvironmental relations through discussion of salient social, economic, and spatial changes. Drawing on cultural and food geography, environmental anthropology, and political ecology, the topic is approached from the premise that *ribeirinhos* and *várzeas* are mutually produced. Our discussions are centered on research examining changing food habits and their relations to food markets, government assistance programs, the dynamics of urbanization processes, premised on the notion that the production, circulation, and consumption of food are central to social, economic, environmental, and spatial dynamics.
- <sup>2</sup> The Amazon biome is diverse. Rivers and forests vary in an impressive myriad of forms. Rivers can be defined in at least 3 groups (Figure 1): white water rivers, originated in the Andes, with a neutral pH and an important sediment and nutrient volumes that will form the Amazonian lowlands (*várzeas*); black water rivers that drain large areas of white sandy soils, with a low pH and high humic acids which will constitute the submerged forests (*igapós*); and clear water rivers mostly originated in the Guiana and the Central Brazil Shields (Jung & Piedade, 2010).

Figure 1 - Amazon River Types



Source: Wildlife Conservation Society – WCS ([www.wcs.org](http://www.wcs.org))

- 3 The length of the flooding period and other parameters such as depth, frequency, timing and shape of the flood pulse are fundamental factors shaping the diversity and ecological dynamics of Amazonian forests and ecosystems. The diversity of Amazonian ecosystems has also been shaped by varied and dynamic human interactions with plants, animals, and other organisms, past and present. Intentional resource management practices and inadvertent consequences of human occupation and resource use over millennia have meant that Amazonian ecosystems are thoroughly anthropogenic landscapes, despite recurrent and persistent assumptions that the Amazon is a pristine or wild space with negligible human influence until the recent past. These misperceptions are shaped in part by Eurocentric assumptions about resource use and management capacities of indigenous and traditional peoples. However, recent archaeological, ecological, and anthropological research has led to an increasing questioning of these problematic assumptions. (e.g., Denevan, 1992; Balée, 1994; Diegues, 1994; Lima *et al.*, 2002; Chazdon 2003; Levis *et al.*, 2017).
- 4 Despite the challenges of archeological research on how original pre-Columbian populations lived, it has become increasingly clear that past management of the environment is part of the modern landscape (Denevan, 2011). During the Brazilian colonial period, 1660-1830, the floodplains gained an important role in the process of occupation of the Amazon. The floodplains became the main productive area in terms of food staples and colonial export crops such as cacao. The role that the floodplains (*vázeeas*) came to play was not a product of biological destiny, but the interplay of its socioenvironmental affordances with Luso-Brazilian interests and aspirations--such as availability of a malleable workforce, fertile soils, and ease of access to transportation--

which were themselves continuously reformulated and transformed within evolving social, economic, technological, and ecological contexts.

- 5 The floodplains are spaces where an important Amazonian figure has constituted itself: the *ribeirinho*. The identity and resource use practices of the Amazonian floodplain peasant, the *ribeirinho*, has developed through centuries of interactions with the rivers and forests in the floodplains, informed by a diverse cultural heritage of indigenous people, Luso-Brazilians, and Afro-Brazilians. *Ribeirinhos* are populations that live alongside the floodplains, and that have intimate knowledge about the river and forest resources upon which their livelihoods depend. *Ribeirinhos* also practice rural production especially for auto-consumption. What defines a *ribeirinho* is his/hers ability to transform the knowledge of the environment into auto-consumption products and/or for cash income. This knowledge of natural resources and processes, combined with knowledge of the affordances that the city can have in terms of access to schooling, health, communication and cash-markets is crucial for the livelihoods of individuals and households, and the sociomaterial reproduction of *ribeirinho* collectivities in the Amazon.
- 6 Through examining changes in food acquisition and alimentary habits of *ribeirinho* populations, this paper critically explores Amazonian sustainable development. The changing of alimentary habits is a strong indicator of changes in perceptions, uses, and engagements with nature in the Amazon, providing a useful vehicle for examining the gap between the myths of sustainability and the reality of rapid urbanization and changing livelihoods in the contemporary Brazilian Amazon. We argue that a political ecology of food regimes in the Amazonian floodplain—drawing on anthropological and geographic approaches and insights—provides a privileged vantage from which to illuminate the contradictions of current development trajectories and the socioenvironmental disparities they engender, potentially contributing to the articulation of more effective sustainable development and social inclusion policies.

## ***Ribeirinho* Food Dynamics**

- 7 In the Amazon, the colonial period brought profound and unprecedented transformations to food regimes. With the consolidation of small settlements and villages, the supply of sufficient and sustained food was a perennial concern, especially considering that the most "valuable" activity in the period was the extraction of natural resources known as *drogas do sertão*. A significant part of indigenous food habits, such as manioc (*Manihot esculenta*), was assimilated by European populations, resulting from the incompatibility of European agricultural crops in tropical soils and the recognition of the ease and importance of certain products for survival in an ecosystem so different from the European. Throughout the colonial period in the Amazon and other parts of Portuguese America, a tension existed between export-oriented production (e.g., sugar, gold, cacau, logging) and the production of food, with the latter being subordinated to the former. While export-production was privileged, efforts to secure a cheap and steady supply of food for cities and plantations were a recurrent concern. This was addressed by importing some foods, and, chiefly, with indigenous peoples and the rural poor in peripheral forest areas coming to fill the primary role as food producers (as laborers in various configurations and as independent semi-subsistence producers). This asymmetrical dichotomy between export production and domestic oriented food production has persisted throughout Brazilian history, with the rural poor and family

farmers continuing to fill a critical role as food producers, while continuing to be subordinated within agricultural, development and territorial policies.

- 8 During the rubber cycle (19<sup>th</sup> Century), an important extractive economy that shaped the resource management of the forest and its people, the rubber tappers, were prohibited to grow their food, only being allowed to plant manioc to make flour. During this period we can say that the food regimes changed drastically, with the introduction of canned foods, especially meats an important food staple in the rubber farms (*segingais*)<sup>1</sup>. Importing foods addressed the vacuum created by the limited emphasis on local food production in economic and labor policies and practices, while also serving as a tool of economic exploitation of laborers by rubber barons and other elites. With the decline of the rubber economy and reorganization of the uses of the territory, the food regime of those that stayed in Amazon changed, with a relative decline in the dependence on imported food goods for much of the population, but there was a persistence of a hybrid mix of imported goods and locally produced and extracted foods.
- 9 Traditional *ribeirinho* sources of foods include locally available wild resources and cultivated plants but also include canned foods, especially meats. In the Amazon the tradition carbohydrate staples for the *ribeirinhos* have been manioc—which includes a wide range of varieties and a diversity of edible derivatives (e.g., flour, tapioca, and bread)— and plantains (which also includes a wide range of varieties). Protein has been obtained mainly by wild fish and bushmeat (Dufour *et al.*, 2016). Manioc flour and its sub-products such as tapioca and *tucupi* are a reliable local source of energy and when mixed with other products, especially dry fish (*piracuí* flour) is an important source of calcium (Castro, 2008).
- 10 These items form the foundation of traditional *ribeirinho* diets, but also include a wide variety of extractive and cultivated products, including fruits, vegetables, and other organisms. Transformations in alimentary habits are a strong indication of transformation not only in the ecosystem, but also in the knowledge of, and engagement with, the ecosystem.



Figure 2 - Traditional ribeirinho meal: fried fish with manioc flour eaten with a spoon



Author: Andre de Oliveira Moraes. NEPECAB, 2008.

- 11 The seasonal nature of human interrelations within the Amazonian biome is especially noticeable when observing the local production of food. At low tide, the production of floodplain crops (e.g., manioc, tomatoes, and watermelon) increases, affecting local prices and produce availability. Lower prices of fresh food produced locally enter the city market, significantly diminishing food prices. During the wet season, the high waters result in diminished cultivation and availability of locally produced crops in the Western Brazilian Amazon (Moraes & Schor, 2010; Aguiar *et al.*, 2014). As a consequence, most of the fresh produce comes by boat from Manaus (and beyond) during high-water season. Food prices increase as well as the level of dependency on Manaus and the cash market.
- 12 In the period of low waters, when cultivation in the floodplains is feasible, the price of tomatoes, limes, manioc flour, and fish decreases. This decrease was significant and was reflected in the overall cost of living in urban nuclei. In the research conducted by Moraes and Schor (2010) on the relationship between the river seasonality and food prices the initial expectation was that the cost of transportation was determinant of the price of food products, but this study found that transport costs did not influence food costs. It was anticipated that industrialized food prices would increase during the dry season due to increased transportation costs, but these remained consistent throughout the year. As the river pulse has relatively predictable seasonal patterns, traders anticipate the periods with difficult access (dry) and maintain the prices of industrialized products stable throughout the year. The seasonal fluctuation in food prices was primarily a reflection of oscillations in local agricultural production, with floodplain production supplying the cities and influencing prices (Aguiar *et al.*, 2014).
- 13 The changes in the availability of fish, fruits and local agricultural products during the high water period (usually from February to June) are accompanied by increases in locally produced food prices. This fact, in combination with the increased monetization of social

relations due to federal cash transfer programs (i.e., *Programa Bolsa Família*), has led the population to depend more heavily on low-cost alternative foods such as canned goods, chicken eggs, and frozen chicken that come by boat from Manaus (much or most of which originates elsewhere) (Nardoto *et al.*, 2011).

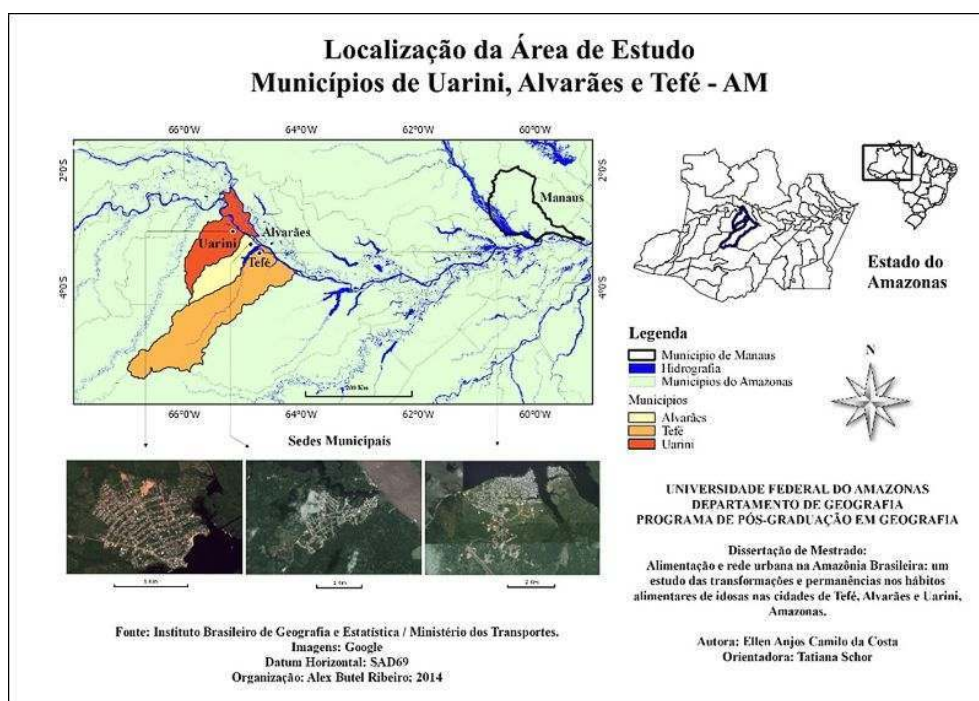
## Conditional Cash Transfer Programs and Changing Food Regimes

- 14 The *Bolsa Família* Program (PBF) is the largest income transfer program of the federal government and was initially formulated by integrating and unifying several pre-existing social programs, the "Zero Hunger" programs; "School Grant", "Gas Aid" and "Food Card". The PBF has led rural households to increasingly purchase food rather than growing their own (Padoch *et al.*, 2008; Piperata *et al.*, 2011; Brondizio *et al.*, 2016). Although the cash transfer programs have generated controversy over the way in which households use the resources, there is evidence that the transferred aid is used primarily for the purchase of food.
- 15 A study by Cabral *et al.* (2013), in Maceio, Alagoas, northeastern Brazil, pointed out interesting results. When researching a community with families receiving PBF, Cabral *et al.* (2013) found that with respect to food purchased with the resources of the benefits, most buy rice, beans, and, less commonly, pasta. In regards to animal protein, chicken was the most commonly purchased food. A small percentage of households reported using the benefit for purchasing fruits and vegetables. As for the acquisition of processed foods, a third reported the purchase of biscuits. Also with respect to the usual diet, although they make no reference to the purchase with cash benefits, families typically consumed bread and/or corn flour (cornmeal) in the form of couscous for breakfast and in the evening.
- 16 From these results, the authors conclude that an increase in carbohydrate and lipid consumption may have occurred within the Program for this group. The alimentary monotony of this population was evidenced with a diet based on cereals of high glycemic index; protein based on chicken meat and diminished amounts of fruits, vegetables and whole foods (Cabral *et al.*, 2013).
- 17 In Amazonas state, a similar scenario to that that found in Maceió exists. Food monotony was recurrent in all cities surveyed along the Solimões River in Amazonas state (Schor *et al.*, 2015). It was found that industrialized chicken was the main source of protein for those that are considered relatively better off ("better life" population), that is, dwellers of households with internal toilets and septic tanks (used as proxies for relative affluence – Marinho & Schor, 2009), who were not recipients of PBF benefits. In the lower income areas the main source of protein was *calabresa* (an ultra-processed meat sausage high in sodium and preservatives that does not need to be refrigerated) and chicken eggs (consumed with manioc flour in the form known as *farofa-de-ovo*). Vegetable consumption cases were rare, and when it happens it is in the form of "*vinagrete*", a mixture of tomato, onion, green pepper chopped and mixed with salt and vinegar (Schor & Costa, 2013; Costa & Schor, 2013). Manioc flour continues to be an important caloric source and pasta comes into the picture, in many cases mixed with manioc flour, which means an increase in carbohydrate consumption.

- 18 Differently from the research carried out in Maceió, in the cities in the Solimões River region the meal that was most transformed relative to more traditional diets was breakfast. Traditional products, such as banana porridge and other traditional breakfast foods have disappeared, and standardization and monotony prevails with coffee (sugar laden) and bread with margarine spread as the main course (Costa, 2015).
- 19 Certain types of malnutrition decrease because hunger and low protein or carbohydrate consumption are less prevalent, but novel forms of malnutrition prevail. Increased consumption of high-sodium and industrialized products and reduced food variety with the standardization of processed chicken, eggs and sausages as the main source of protein contributes to the poor health of the population (e.g., the increasing burden of non-communicable diseases linked to modern diets), while restricting the cultural aspects and knowledge of local biodiversity transmitted by eating habits. This knowledge has historically contributed to dietary diversity, food security, and resilience to unpredictable economic and environmental changes.
- 20 Research by Piperata *et al.* (2011) examined shifts in anthropometric factors (heights and weights) when comparing a set of data from before the cash income policy (2002) and during (2009). Piperata concludes that there has been a significant impact on household goods including increased access to electricity and motorized boats. Lifestyle has changed with less dependence on locally grown crops and a higher dependence on wages and government benefits to purchase foods. This economic change has not yet shown changes in growth and nutritional status, but do point towards the direction of nutritional transition (Piperata *et al.*, 2011).
- 21 Life styles do vary from community to community. A comparative study of wetland communities (*várzeas*) and upland communities (*terra firme*) has shown that in the *várzeas* the *ribeirinhos* had a higher consumption of processed items. These included canned goods, beverages (sodas) and refrigerated foods such as dairy and frozen chicken (Jesus Silva *et al.*, 2016). These results are linked to greater participation in the market economy. In the case analyzed by Jesus the *várzea* communities had access to the *Bolsa Floresta*, Amazonas state cash transfer program related to forest conservation. Clearly in the *várzea*, *ribeirinhos* have their livelihoods impacted by the nutritional transition due to cash transfer programs. In the case examined by Jesus Silva *et al.* (2016) what differentiates them from the upland *ribeirinhos* is their participation in the environmental policy of *Bolsa Floresta*, which can be seen with the increase of purchased processed goods in the nearby town and through local boats.
- 22 While analyzing changes in alimentary habits within riverine communities what is striking is the high consumption of manioc flour and rice in both river seasons and for three cities along the Solimões River: Tefé, Alvarães and Uarini (Costa, 2015).



Figure 3 - Location of Uarini, Alvarães and Tefé, Amazonas, Brazil



Source: IBGE (2010a), Ministério dos Transportes. Org.: Alex Butel.

- 23 Costa (2015) shows that almost 100 % of the population interviewed in the three cities along the Solimões River consumed rice. Rice in the Amazon is not only part of the urban food style, but also the rural environment. With access to money, mainly through various government social programs, people can have access to several products, even far from urban centers. In this regard, "the acquisition of imported and industrialized food products is still directly linked to the proximity of urban centers and access to money" (Murrieta, 2001, p. 60). Murrieta also considers the presence of these "imported" products such as rice and even plain canned foods as a sporadic event at the table of several rural families in the Amazon, maybe that was the case for 2001, but surely now the picture has changed in many communities, with a generalized increase in the role of industrial goods in rural diets (and even more pronounced in urban centers).
- 24 In a study carried out by Gabriela Fantoni Soberon (2014) on the impacts of the *Bolsa Família* Program on the Yanomami Indigenous Territory in the Marawa River Basin (AM), rice also appeared as the most purchased food product. This fact is justified by the ease of storage and transportation, as well as being an accompaniment to traditional foods. Rice also appears as one of the main products purchased monthly by *ribeirinho* households in communities located in the Solimões River near Tefé, Alvarães and Uarini in the Mamirauá Sustainable Development Reserve (Jesus Silva *et al.*, 2016). This pattern indicates that these communities, indigenous and *ribeirinhos*, are increasingly approximating a broader Brazilian conception of meals in which rice is a major component (90 % of Brazilians eat rice as one of the components of either lunch or dinner or both – Barbosa, 2007).

## Socioenvironmental Implications of Conditional Cash Transfers Programs

- 25 There has been a growing number of studies indicating nutritional transition in the Amazon and the impact on health and on livelihoods (Nardoto *et al.*, 2011; Piperata *et al.*, 2011; Jesus Silva *et al.*, 2016, for example), but fewer studies have considered these impacts on the socioenvironmental aspects related to the drastic changes in the *ribeirinhos* livelihoods, especially those *ribeirinhos* that are more city-based and who are a growing group in contemporary Amazonia.
- 26 These changing consumptive and productive practices have important implications for land use and agricultural/extractive activities. Importantly, this generalized shift in food acquisition practices “by no means suggests that annual cropping completely stops, but rather that annual cropping becomes more a supplement and security than a subsistence strategy. This has many implications for agrobiodiversity, regional landscapes, indigenous knowledge systems and nutritional profiles for those who move from their own production to more processed food)” (Hecht, 2014, p. 889).
- 27 The environmental impacts and implications of these programs and their relationship to other socioenvironmental trends is complex, heterogeneous, and poorly understood, but they may contribute to reductions in deforestation and to forest recuperation. Different studies in Brazil have looked at the impact of cash transfer programs, finding that they “have stabilized and reduced clearing pressure”, have led to declines in manioc gardens, have resulted in agricultural contraction (with a shift towards açai production), and have been accompanied by increased dependence on wage activity and periodic outmigration (and reduced clearing) (Hecht, 2014).
- 28 Hecht (2014) affirms that existing data point to “the importance of targeted poverty alleviation subsidies for reducing deforestation pressures to a certain degree and, with less clearing, allowing more potential forest recovery”(p. 889); however, the links between these programs and forest dynamics are complex and heterogeneous. Among the important compounding factors is the rise in wage labor, the expansion of labor markets in rural and urban areas, and the phenomenon of multi-sited households. Remittances, which have a broadly similar impact on rural economies, have been found to have complex and often contradictory implications for forest cover and environmental stewardship (Hecht, 2014).
- 29 Such programs are potentially leading to land and resource use and management decisions and practices that are less sustainable than previously existing ones. The economic and productive decisions that emerge with the advent of these programs is contingent on biological factors, land tenure, market access and opportunities, access to credit and technologies, and individual knowledge and values. For example, in some cases cash transfer programs (and remittances) may foster cattle production, timber extraction, or high-input agriculture as rural households invest in cattle or agricultural/extractive/processing technologies instead of practicing more traditional forms of agriculture and/or extractive activities. When appraising the socioenvironmental qualities of these programs it is important to also consider their potential to undermine nutritional security in the longer term.

- 30 While reductions in deforestation and increases in forest regeneration may be perceived as a positive socioenvironmental change, when accompanied by the abandonment of agriculture for local food production, nutritional security and livelihoods may be compromised, rendering the overall socioenvironmental benefits less clear. Further, the increased dependence on extra-local market goods that are produced through socioenvironmentally problematic agribusiness models, such as beef, rice, and frozen chicken, may spatially transfer environmental degradation elsewhere, which raises questions about sustainability at wider scales, even when there are apparently positive trends in terms of local forest cover.
- 31 Besides the greater dependence on cash markets, an important factor in changing livelihoods, food practices, and spatial occupation is environmental policy. The creation of conservation units and the strengthening of environmental governance efforts have led to numerous important changes in resource use. Bans and restrictions (including seasonal ones) on some extractive activities have placed limitations on some forms of traditional food acquisition (e.g., hunting). Incentives for some types of agriculture, agroforestry, and extractive activities have also displaced and indirectly dis-incentivized traditional forms of agriculture. These and other environmental policies are contributing to shifting forms of food procurement, diets, spatial occupation, and dynamics between rural and urban spaces.

## Conclusions

- 32 The food regimes of the contemporary Amazon are complex, spatially and socioeconomically heterogeneous, making generalizations tricky, but some important patterns emerge. There has been a general trend towards a modernization of diets and food acquisition practices within an increasing commodification of food circulation. In this process—given the high levels of poverty in the region—government social programs have played an important role in the increased monetization of the economy. These changes raise important questions about nutritional security, socioenvironmental resilience, and sustainable development.
- 33 We believe that a focus on food regimes provides a privileged vantage from which to explore the complexities of the mutual production of *ribeirinho* communities and the contemporary Amazonian landscape, making increased attention to Amazonian food cultures and foods regimes an essential focus for anthropological and geographical research on sustainable development. Further research is especially important on the role of locally unique food distribution networks in food regimes, the impacts of government social programs, nutritional quality and diversity of diets, resource use and management, and the links between these. As we have sought to point out, such research needs to be attuned to the unique nature of Amazonian settlement patterns, with their dynamic relations between urban and the rural spaces, as well as the highly seasonal nature of food practices, resource management, and market relations. Crucially, it also needs to be attuned to the socioenvironmental heterogeneity of the regions inhabitants and its strong social, economic, and spatial disparities.
- 34 Changing eating habits from a traditional diet based on locally produced or harvested food from the forest and rivers into a supermarket-diet has an impact not only in the increase of poverty but also in the transformation of knowledge of the uses of resources

from the forest and rivers. Will future generations, which have their alimentary habits transformed, be able to identify and prepare a biodiverse meal? Without this knowledge will the forest have a role in alleviating poverty? Will local population still value the forests and consider a sustainable development which maintains the forest or will they prefer deforestation and grow cash-crops and raise cattle? Research and public policy agendas should take these questions into consideration in order to link sustainability of ecosystems to poverty alleviation in the Amazon.

- 35 A political ecology of Amazonian food regimes can serve to support the development of sustainable development policies that better support social, economic, and environmental goals. For example, more detailed and nuanced understandings of the contemporary dynamics of Amazonian food regimes can support the development of more complementary and integrated public health, conservation, social, and agricultural policies that simultaneously cultivate nutritional security, economic inclusion, and sustainable agricultural and extractive activities. At present, territorial planning efforts are fragmented with different policies and government agencies often undermining each other, limiting their potential to promote social inclusion, sustainable resource management, and healthy populations, ultimately fostering unsustainable and detrimental forms of economic development. As has occurred throughout Brazilian history, domestic local and food production and the promotion of nutritional security continues to be subordinated to export-oriented production within agricultural, land, and labor policies.
- 36 Lastly, while research on food regimes can aid in developing more sustainable and integrated territorial planning efforts, it is not a panacea. An essential element of developing a more synthetic approach to territorial planning is the inclusion and empowerment of the region's poor inhabitants to shape and inform policymaking practices. The social inclusion efforts in Brazil have mostly emphasized inclusion as consumers, not as citizens (and even as consumers, inclusion has been rather modest), and the persistent stark inequalities in political agency continue to be at the heart of the elite oriented, myopic, and fragmented approaches to development that prevail. Transforming the prevailing predatory model of land and resource use in Brazil is not an easy task, given that these patterns and the disparities in decision making power with which they are linked are deeply rooted, as we have sought to highlight in understanding the past and present of Amazonian food regimes.

---

## BIBLIOGRAPHY

Aguiar D. G., Sampaio F. P. R., Filizola N. P.; 2014. Cesta básica regionalizada e variabilidade hidrológica: o caso das cidades de Manacapuru (AM) e Óbidos (PA). In. Schor T. (Org.), *Dinâmica Urbana na Amazônia*. Manaus, Valer, vol. 1, p. 151-165.

Balée W. L., 1994. *Footprints of the forest: Ka'apor ethnobotany-the historical ecology of plant utilization by an Amazonian people*. NYC, Columbia University Press.

- Barbosa L., 2007. Feijão com arroz e arroz com feijão: o Brasil no prato dos brasileiros. *Horizontes Antropológicos*, Porto Alegre, 13(28), p. 87-116.
- Brondizio E. S., Siqueira A. D., Vogt N., 2016. Forest Resources, City Services: globalization, household networks, and urbanization in the Amazon Estuary. In Hecht, S, Morrison K., Padoch C., *The social lives of forests: past, present, and future of woodland resurgence*. University of Chicago, p. 493 (Paperback edition), p.348-361.
- Cabral M. J., Vieira K. A., Sawaya A. L., Toledo T. M. M., 2013. Perfil socioeconômico, nutricional e de ingestão alimentar de beneficiários do programa bolsa família. *Estudos Avançados*, vol. 27, n° 78, p. 71-87.
- Castro (de) J., 2008. *Geografia da Fome*. 9. ed. Rio de Janeiro, Civilização Brasileira.
- Chazdon R. L., 2003. Tropical forest recovery: legacies of human impact and natural disturbances. *Perspectives in Plant Ecology, Evolution and Systematics* 6, n° 1, p. 51-71.
- Costa E. A. C., 2015. *Geografia da Alimentação no Médio Amazonas*. Manaus:EDUA, vol. 1 p. 138.
- Costa E. A. C., Schor T., 2013. Redes Urbanas, Abastecimento e o café da manhã de idosas na cidade de Tefé, Amazonas: Elementos para a análise da geografia da alimentação no Brasil. *Hygeia*, vol. 9, n° 17, p. 52-73.
- Denevan W. M., 1992. The pristine myth: the landscape of the Americas in 1492. *Annals of the Association of American Geographers* 82, n° 3, p. 369-385.
- Diegues A. C. S., 1994. *O mito moderno da natureza intocada*. São Paulo, Hucitec.
- Dufour D. L., Piperata B. A., Murrieta R., Wilson W. M., Williams D., 2016. Amazonian foods and implications for human biology. *Annals of Human Biology*, 43(4), p. 330-348.
- Hecht S. B., 2014. Forests lost and found in tropical Latin America: the woodland 'green revolution'. *Journal of Peasant Studies*, 41(5), p. 877-909.
- Jesus Silva, R., Garavello M. E. P.E., Nardoto G. B., Mazzi E. A., Martinelli L. A., 2016. Factors influencing the food transition in riverine communities in the Brazilian Amazon. *Env. Dev. Sustain*, published online 02 April. DOI 10.1007/s10668-016-9783-x
- Jung W. J., Piedade M. T. E., 2010. An introduction to South American Wetland Forests: distribution, definitions and general characterization. In Junk W.J., Piedade M.T.F., Schogart J., Parolin P. (eds), *Amazonian Floodplain Forests: ecophysiology, biodiversity and sustainable management*. New York, Springer.
- Levis C., Costa F. R.C., Bongers F., Peña-Claros M., Clement C. R., Junqueira A. B., Neves E. G., 2017. Persistent effects of pre-Columbian plant domestication on Amazonian forest composition. *Science* 355, no. 6328, p. 925-931.
- Lima D.M., Peralta N., 2016. Programas de transferência de renda em duas Unidades de Conservação na Amazônia brasileira e sustentabilidade. Belém, *Novos Cadernos NAEA*, vol. 19, n° 2, p. 43-67, maio-agosto.
- Marinho T. P., Schor T., 2009. Segregação Socioespacial, Dinâmica Populacional e Rede Urbana na cidade de Parintins/AM. *Revista Geografares*, Vitória, Departamento de Geografia, n° 07, p. 77-92.
- Moraes A., Schor T., 2010. Mercados, tabernas e feiras: custo de vida nas cidades na calha do rio Solimões. *Mercator*, vol. 9, n° 19, p. 101-115.
- Murrieta R. S. S., 2001. Dialética do sabor: alimentação, ecologia e vida cotidiana em comunidades ribeirinhas da Ilha de Ituqui, Baixo Amazonas, Pará. *Revista de Antropologia*, São Paulo, USP, vol. 44, n° 2, p. 39-88.



Nardoto G. G., Murrieta R. S., Prates L. E., Adams C., Garavello M. E., Schor T., Moraes A. O., Rinaldi F. D., Gragnani J. G., Moura E. A. F., Duarte-Neto, P. J., Martinelli L. A., 2011. Frozen, chicken for wild fish: nutritional transition in the Brazilian Amazon Region determined by carbon and nitrogen stable isotope ratios in fingernails. *American Journal of Human Biology*, vol. 31.

Padoch C., Brondizio E. S., Costa S., Pinedo-Vasquez M., Sears R.R., Siqueira A., 2008. Urban forest and rural cities: multi-sited households, consumption patterns and forest resources in Amazonia. *Ecology and Society*. 13(2), 2.

Piperata, B. A.; Spence, J. E.; Da-Gloria, P.; Hubbe, M. 2011. The nutritional transition in Amazonia: Rapid Economic Change and its impact on growth and development in ribeirinhos. *American Journal of Physical Anthropology*, p. 146:1-13.

Schor T., Costa E. A. C., 2013. Cadê o mingau de banana que estava aqui? Transformações dos hábitos alimentares no Amazonas. In Oliveira J. A. de (Org.), *Espaços, Saúde e Ambiente na Amazônia: Ensaios de geografia da Saúde*. 1. ed. São Paulo Outras Expressões, vol. 1, p. 109-125.

Schor T., Tavares-Pinto M. A., Avelino F. C. C., Ribeiro M. L., 2015. Do peixe com farinha à macarronada com frango: uma análise das transformações na rede urbana no Alto Solimões pela perspectiva dos padrões alimentares. *Confins* [Online], 24, 2015. <http://confins.revues.org/10254>.

Soberón G. F. 2014. *O uso dos recursos pelos Yanomami. Um estudo sobre a implantação do Programa Bolsa Família na Terra indígena Yanomami, Bacia do Rio Marauíá*. AM. Manaus, INPA. (Dissertação de Mestrado, Programa de Pós-Graduação em Ecologia).

## NOTES

1. The dependence on some imported goods (e.g., salt and oil) existed prior to the rubber boom, but this period brought an increased connection with outside markets and imported food items.

---

## ABSTRACTS

Through examining changes in food acquisition and alimentary habits, this paper critically explores Amazonian sustainable development. The changing of alimentary habits is a strong indicator of changes in perceptions, uses, and engagements with nature in the Amazon, providing a useful vehicle for examining the gap between the myths of sustainability and the reality of rapid urbanization and changing livelihoods in the contemporary Amazon. We argue that a political ecology of food regimes in the Brazilian Amazonian floodplain—drawing on anthropological and geographic approaches and insights—provides a privileged vantage from which to illuminate the contradictions of current development trajectories and the socioenvironmental disparities they engender, potentially contributing to the articulation of more effective sustainable development and social inclusion policies.

En examinant les changements dans l'acquisition des aliments et les habitudes alimentaires, cet article explore de manière critique le développement durable de l'Amazonie. Le changement des habitudes alimentaires est un indicateur fort des changements dans les perceptions, les usages et

les engagements avec la nature dans l'Amazonie, en fournissant un moyen utile d'examiner l'écart entre les mythes de la durabilité et la réalité de l'urbanisation rapide et l'évolution des moyens de subsistance dans l'Amazonie contemporaine. Nous soutenons qu'une écologie politique des régimes alimentaires dans la plaine d'inondation amazonienne brésilienne - en s'appuyant sur des approches et des idées anthropologiques et géographiques - offre un avantage privilégié pour éclairer les contradictions des trajectoires actuelles de développement et les disparités socio-environnementales qu'elles engendrent, contribuant potentiellement à l'articulation des politiques de développement durable et d'inclusion sociale plus efficaces.

## INDEX

**Mots-clés:** régime alimentaire, Écologie politique, Ribeirinhos, Amazonie

**Keywords:** food regime, political ecology, ribeirinhos, Amazonia

## AUTHORS

### TATIANA SCHOR

Tatian Schor, [tschor@ufam.edu.br](mailto:tschor@ufam.edu.br), Universidade Federal do Amazonas, Catedra Ruth Cardoso  
Columbia University 2016-2017, Pesquisadora CNPq.

### GUSTAVO S. AZENHA

Gustavo S. Azenha, [ga2161@columbia.edu](mailto:ga2161@columbia.edu), Director for the Lemann Center for Brazilian Studies,  
ILAS, Columbia University.