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An Amazonian Utopia with caveats

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Constructing visons of a “utopia” for Amazonia can have both positive and negative consequences for real-world decisions on developments. On the positive side, knowing what one’s ultimate goal is can help in guiding decisions toward achieving that goal, rather than efforts being scattered over an array of lesser priorities. On the negative side, a vision of utopia where laws are enforced and obeyed can easily transform into an assumption that history will unfold according to this scenario, and, therefore, roads, dams and other development projects can be built without causing significant damage. Such “governance” scenarios have already had critical roles in justifying approval of projects with huge impacts.

Cautionary tales

A historical example of this danger is provided by the World Bank’s belief that the BR-364 (Cuiabá-Porto Velho) Highway would be a model with settlement projects "tailored to the carrying capacity of the land" (Goodland, 1985), when, in fact, it opened Rondônia to rampant deforestation (e.g., Fearnside, 1987). Another example is the paving of the BR-174 (Manaus-Boa Vista) Highway in 1996 and 1997, which was announced as a “surgical cut” through the forest without deforestation (see Fearnside & Leal Filho, 2001), when, instead, migration to southern Roraima has made the area a major focus of deforestation and logging (Barni et al., 2012, 2021). Another example is the reconstruction of the BR-163 (Santarém-Cuiabá) Highway, where a simulated governance scenario indicated little deforestation (Soares-Filho et al., 2004). In fact, the deforestation that ensued far exceeded not only that foreseen in the “governance” scenario but also that in the “business as usual” scenario that projected past trends without governance. In the leadup to approval of the 2002 Environmental Impact Assessment, governance along the BR-163 was hailed as having arrived (see Fearnside, 2007). The election of a “green mayor” in Guarantã do Norte, a municipality in Mato Grosso where the highway crosses into Pará, was claimed as proof. Unfortunately, a few months later the director of Brazil’s National Fund for the Environment (FNMA) was taken hostage by loggers in Guarantã do Norte and the mayor was forced to renegue on his promises to create protected areas (Fontes, 2003). Environment minister Marina Silva declared that BR-163 would be a “corridor of sustainable development” (see Fearnside, 2005). History has been different. BR-163 achieved notoriety in 2019 with the organization of a “day of fire” by ranchers in Novo Progresso, where burning was coordinated to be done simultaneously on 10 August across Amazonia as a signal to President Bolsonaro that “ruralists” (large landholders and their representatives) were responding to his call to develop the Amazon (Eisenhammer, 2019).

A current example of the danger of unrealistic utopias is the licensing of the proposed reconstruction of the BR-319 (Manaus-Porto Velho) highway. The proposed building of a highway along the route of a road built in 1972-1973 and abandoned by the highway department in 1988 would open a vast area of what remains of Brazil's Amazon forest to the entry of actors from the notorious "arc of deforestation" on the southern edge of the forest. The project has had two EIAs. The first, published in 2009, presented Yellowstone National Park in the US as the scenario for "strong governance" that was assumed to represent the future of the area in the EIA's endorsement of the construction project. The EIA included a map of Yellowstone showing the roads on which millions of tourists drive without cutting a single tree (see: Fearnside & Graça, 2009). Undoubtedly influenced by the criticism this scenario attracted, it disappeared from the second EIA, published in 2020, but the idea that governance will prevail continued to permeate the presentation. The idea that governance will protect the forest opened by BR-319 and its side roads has long dominated presentation of the plans. In 2010, Dilma Rousseff, then head of the "Civil House" in the presidential office, declared that the BR-319 highway would be a "parkway" ("*estrada parque*") that would be "an example for the world" (e.g., FIERO, 2010). This vision of tourists driving through the intact forest has often been invoked in political discourse. Politicians in Manaus claim BR-319 will be a "model of sustainability for the world" (*Amazonas em Tempo*, 2020). The reality is very different: the now marginally passable highway route is essentially a lawless area with rampant land grabbing (*grilagem*), illegal logging, and the building of illegal side roads ("*ramais*") (Andrade et al., 2021; Fearnside et al., 2020a,b; Ferrante et al., 2021).

Another current example is the planned Solimões Sedimentary Basin oil and gas project (EPE, 2020; Fearnside, 2020a). The official scenario is that oil and gas extraction areas will be done in small, isolated clearings that will be like oil-drilling platforms in the ocean, with access by helicopter. However, it is inherently much cheaper to access these areas by road, and it is likely that the companies would either build roads themselves or would use their influence to induce the government to build them. The first 16 drilling blocks have already been purchased by Rosneft, the giant Russian government oil and gas company, and three of these lie directly in the path of the planned AM-366 highway that would open the vast "Trans-Purus" region to the entry of deforesters (Fearnside, 2022a). This company's wealth and its connection to Russian president Vladimir Putin mean that would have ample influence to induce either the federal or the Amazonas state government to build AM-366 (Fearnside, 2022b).

Goals for an Amazonian utopia

What would my Amazonian utopia be? Since 1992 I have been arguing for a transformation of the economy in rural Amazonia from the present one that is based on destruction of the forest to one based on capturing the value of the forest's environmental services (e.g., Fearnside, 1997, 2008). "Environmental services," also known as "regulating ecosystem services" or "non-provisioning ecosystem services," are ecosystem functions such as maintaining biodiversity, avoiding global warming, recycling water that maintains rainfall both inside and outside of Amazonia. Environmental services are valuable to humans but are distinct from the production of physical products, such as timber. Since 1992 progress

has been made, but a transformation competing with the current predatory norm is not immanent. There has been progress in better quantification of the forest's environmental services, especially those related to carbon storage and water cycling. The Climate Convention (UNFCCC) and Biodiversity Convention (CDB) have been established and dozens of meetings have been held to negotiate mitigation plans and commitments. Public awareness has increased thanks to recent climatic disasters worldwide.

Various unresolved issues stand in the way of an Amazonian utopia based on environmental services. The most important impediment is institutional, rather than a lack of scientific information. The question of what to do with the money if it were to materialize is essential. Means are needed to transform monetary flows based on environmental services into ways of supporting the traditional population and maintaining the forest. A long series of scandals is undermining confidence in these solutions. A telling event was the attempt by the Bolsonaro government to pervert the use of money that had been donated by Norway and Germany to the Amazon Fund to be "aligned with the government's policies" (Senadonotícias, 2019). Most of Brazil's mitigation plans are designed to reward rich landholders, for example by subsidizing planting trees in illegally deforested Areas of Permanent Preservation (APPs) and Legal Reserves (RLs). A pending bill (PL 528/2021) for establishing the Brazilian Market for Reduction of Emissions (MBRE) would mainly provide ways to pay for activities that would happen anyway without the subsidy (i.e., non-additional mitigation schemes), such as promoting no-till agriculture for soybeans (Ferrante & Fearnside, 2021). This is also the flagship activity of Brazil's Low-Carbon Agriculture Program. REDD+, or Reducing Emissions from Deforestation and Forest Degradation, has had the plus sign (+) added to the acronym to indicate the inclusion of measures to increase forest carbon stocks, for example by restoring degraded lands. Activities have swung heavily in this direction for obvious reasons. Offering money to land holders to plant trees has instant support, while measures to halt deforestation run contrary to powerful interests. Unfortunately, from the point of view of climate it is much more advantageous to invest mitigation funds in preventing deforestation (in addition to the many non-climate environmental benefits and benefits for traditional peoples). It is much more expensive to restore a hectare of degraded pasture than to prevent a hectare of deforestation, and the carbon benefit of avoiding deforestation is much greater, both per hectare and per unit of money invested.

Much of what is undermining a utopia based on environmental services goes beyond simply wasting the always limited "green" money. Perverse outcomes can result. Brazil's Rural Environmental Register (CAR) was created by the 2012 "forest code" (Law 12,651/2012) with the stated intent of facilitating enforcement of the requirements for Areas of Permanent Protection (APPs) and Legal Reserves (RLs), and the CAR was explicitly specified as not implying legal ownership of the areas entered in this self-declared registry (Guaraldo, 2022). Instead, the CAR has become a major tool for land grabbers (*grileiros*), greatly facilitating the legalization (euphemistically termed "regularization") of their illegal occupations (Azevedo-Ramos et al. 2020; Brito et al., 2019). The fate of Brazilian Amazonia's vast undesignated public lands is critical but, instead of being designated for protected areas, they are rapidly being claimed through the CAR and invaded by landgrabbers, and the claims are being legalized (e.g., Carrero et al., 2022; Yanai et al., 2022). The CAR stimulates deforestation in order to demonstrate

"productive use" of the claimed land as a justification for legalization. Legalization also stimulates deforestation after a title is issued, as shown by a study of the effect of Brazil's "Terra Legal" program (Probst et al., 2020). The prospect of obtaining voluntary-market carbon credit for forests claimed through the CAR appears to be beginning, as suggested by the current questioning by the Federal Public Ministry (MPF) of efforts by a company (Nemus) to sell non-fungible tokens (NFTs) for carbon in 41,000 ha in the state of Amazonas (MPF, 2022; Watanabe, 2022). Efforts to compensate carbon benefits from maintaining forest are also undermined by scandals in other areas of mitigation, most notoriously carbon credit currently being awarded under the Clean Development Mechanism for hydroelectric dams, virtually none of which are "additional" in the spirit of the Kyoto Protocol since they are being built for reasons other than carbon credit and would be built without this subsidy (Fearnside, 2013a,b, 2015a). In addition, Amazonian dams emit methane, greatly reducing or eliminating any climate benefit (Fearnside, 2015b). These dams also have tremendous social impacts that clearly violate the Clean Development Mechanism's requirement that mitigation projects contribute to sustainable development (Fearnside, 2020b).

Solving the various problems that need to be solved each has risks and poses dilemmas. An economy based on environmental services cannot be implemented in a lawless land. Establishing the rule of law is currently a distant dream, despite frequent statements that simply assume that pointing out that something is illegal or violates the constitution means that it won't happen. We are living in the post-Belo Monte age, where such innocence is inexcusable. Famously termed "totally illegal" by the Federal Public Ministry in Belém (Miotto, 2011), building the dam without consulting the impacted indigenous peoples clearly violated Brazil's 1988 constitution (article 231), ILO Convention 169 (ILO, 1989) and Brazilian Law (10.088/2019, formerly 5.051/2004). Despite over 20 suits pending to stop the dam, and one case that was ruled in favor of the indigenous people by a federal court (AmazonWatch, 2012), the dam was allowed to proceed and stands today as a concrete monument to the lack of a state of law in practice (see: Fearnside, 2017a,b). This monument casts a shadow throughout Amazonia, most recently on BR-319 Highway (e.g., Ferrante et al., 2020b). The fact that large parts of Amazonia are dominated by organized crime has recently come to the world's attention through the murders of Bruno Pereira and Dom Phillips (e.g., Downie, 2022). Establishing the rule of law is obviously urgent (Clement et al., 2022).

Implementing an economy based on environmental services requires a means of enforcing commitments to refrain from deforestation. Command and control operations to punish illegal deforestation by landholders is only part of this. No one would want this to become an excuse for militarization of environmental control, which is both highly inefficient and leads to abuses (Ferrante & Fearnside 2020; Teixeira, 2020). One of the best alternatives would be social control from local communities, as is the assumption underlying extractive reserves as a means of avoiding deforestation (Fearnside et al., 2018). Unfortunately, this is not proving sufficient in the case of the Chico Mendes Extractive Reserve in Acre, where a growing number of former rubber tappers are abandoning their sustainable use of the forest to become cattle ranchers, clearing forest in the reserve (e.g., Pontes, 2020).

In summary, an economy based on environmental services is far from the present reality but continuing to work towards this goal remains essential. The alternative of continuing the region's present destruction of the forest has environmental and social costs that are simply too high.

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