



## Commentary

## Reply to “On the impact of the Brazilian Forest Code on mangroves: A comment to Ferreira and Lacerda (2016)” by Ronaldo Ruy Oliveira-Filho et al.



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In their comment “On the impact of the Brazilian Forest Code on mangroves: a comment to Ferreira and Lacerda (2016)”, Oliveira-Filho et al. (2016) make a relevant alert on the threats to mangrove ecosystems of the amendments of Brazilian Forest Code (BFC), clearly biased to induce an expansion of the agribusiness over areas of primary forests, in the case of mangroves in particular, of the aquaculture sector. We agree with their considerations.

The original proclamation in 1965 of the BFC was considered an advance, not only by at least establishing regulation for the forest sector in general, regulating the non-stop centenary destruction of forest ecosystems, but also by electing areas that due to their key environmental values would be of permanent protection, among them the mangrove forests. Notwithstanding, pressure over forests ecosystems continued, and the capital voracity continued destroying Brazilian forests, tolerated by Federal and State governments, adducing “development and job creation” or lack of capacity of supervise violations to the laws, or even acquitting transgressors violations, sometimes extremely grave such as extensive deforestations or menaces to environmental leaders. Under the original BFC, however, these actions could be avoided and perpetrators sued, and this intensified in the present century mostly due to international pressure and commitments related to the climate change initiatives (COP’s). Unfortunately, pressure from the production sectors over the legislative resulted in amendments to BFC recently approved that represent a legalization of practices

that were already happening, and from our point of view, equally wrong as admitting privatizing of forest areas, or any deforestation of riverine forests (Art 2.) or Amazonia and Atlantic rainforests (even maintaining a minimum preserved area, the “Legal Reserve” - Art. 16, 17) as original BFC did.

Although mangrove ecosystems are still considered as permanent protection areas in the “new” BFC, two new aspects directly threatens these forests. First, the exclusion of associated landscapes, such as salt flats (“apicuns”) and adjacent salt marshes opening a huge (over 600.000 ha) area for aquaculture development, notwithstanding the functional dependence between mangrove and these marginal ecosystems; and second, by allowing deforestation in alleged “public utility” or “social interest” projects (Art. 1) even if permanent protection areas. It is important to note that these transition areas between mangroves and terrestrial habitats are key spaces for landward migration of mangroves due to sea level rise, a phenomenon already taking place in many sectors of the Brazilian coast (Godoy and Lacerda, 2015). Mangroves at Rio Grande do Norte State, Northeastern Brazil, will suffer this impact, following the recent permission of State government to again convert mangrove areas for shrimp farming, based in the “new” BFC (Tribuna do Norte, 2015; ABCC, 2015). Southeastern coast also faces the same impact on ecosystem continuity, but generated by human and harbor expansion.

These amendments to the Code worsen the situation of mangroves (and of all Brazilian wetlands), not only by the permission to occupy more lower littoral zones of rivers, coasts and lowlands (humid areas protected under RAMSAR Convention)(Silva et al., 2011), but also by deforestation of riverine forests (mangroves included), potentially altering materials runoff to estuaries (Godoy and Lacerda, 2015) and consequently mangrove functionalities. Note that the BFC does not mention sea level rise or any other output of global climate change, weakening further its capacity for forest protection. The “new” BFC also lacks any legislation regulating the water intake and spillage by shrimp ponds, which already covering over 16.000 ha adjacent to mangrove forests, and that can destroy forests, alter hydrology and salt exchange, and erode soils and clog channels, neither promoting compensatory mangrove rehabilitation to maintain their ecological services.

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The Code amendments legalize impunity, the same impunity that environment aggressors use from decades to degrade natural ecosystems, supported and veiled in the name of “developing”, “consuming” and “welfare”. Society supports this system, through consuming products ignorant of their respective production chain, most on the expenses of natural forests. Hence, the amendments imposed by the Forest Code represent, undoubtedly, a “repulsive” back-step from the point of view of legislation, constituting one more obstacle in the long way to protect Brazilian ecosystems and their vital biogeochemical cycles. As we stated in our Article “Degradation and conservation of Brazilian mangroves, status and perspectives” (Ferreira and Lacerda, 2016): “A lesson that emerges is that it would be more practical to develop urgent conservation and restoration initiatives at the base, promoted and performed by social protagonists (community) with science partnership, than wait by governmental initiatives, which are slow and entangled in bureaucracy”... and class interests.

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