

Assessing CITES Non-detriment Findings Procedures for *Arapaima* in Brazil

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ABSTRACT

Arapaima are listed as endangered fishes according to Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES). However, international trade of *Arapaima* is regulated by non-detriment finding (NDF) procedures, which have not been very effective. Here, we use IUCN's checklist for making NDFs to critically assess Brazil's regulations for NDF procedures for *Arapaima*. We show that Brazil's NDF procedures cannot ensure the sustainability of *Arapaima* populations. *Arapaima* are among the largest fishes worldwide. They migrate short distances among several floodplain habitats, and are very vulnerable to fishing during spawning. They are threatened mainly by overfishing and the fishery is largely unregulated, because government regulations on size, season, and even moratorium of capture have been very poorly enforced. However, *Arapaima* remain poorly understood. The taxonomy and geographical distribution of the genus remain uncertain. There are no data on catch levels and status of wild populations, although available information suggests they are declining. Brazil's NDF procedures for specimens originating in the wild are inadequate because they rely on 'technical opinion reports', which do not necessarily require

scientific evidence. Furthermore, Brazil's NDF procedures exempt the need for NDF reports for 'captive' specimens. But 'captive' specimens that originate in the wild and are raised in captivity can be exported freely because regulations do not specify that they must be 'captive-bred'. We offer five suggestions to improve the reliability of NDF procedures for *Arapaima* in Brazil, and emphasize the utility of participatory monitoring and adaptive harvesting to strengthen much needed harvest control capacity in other tropical developing countries.