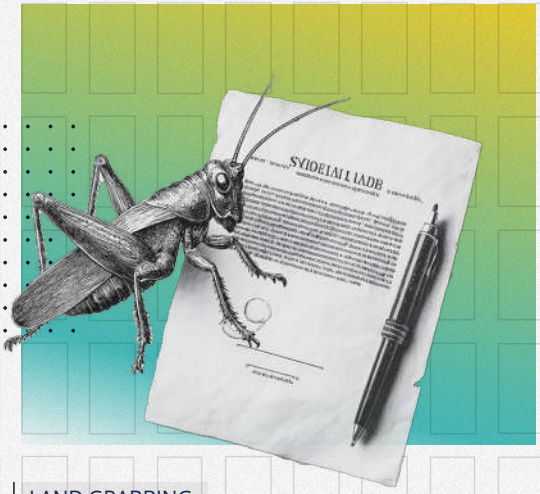
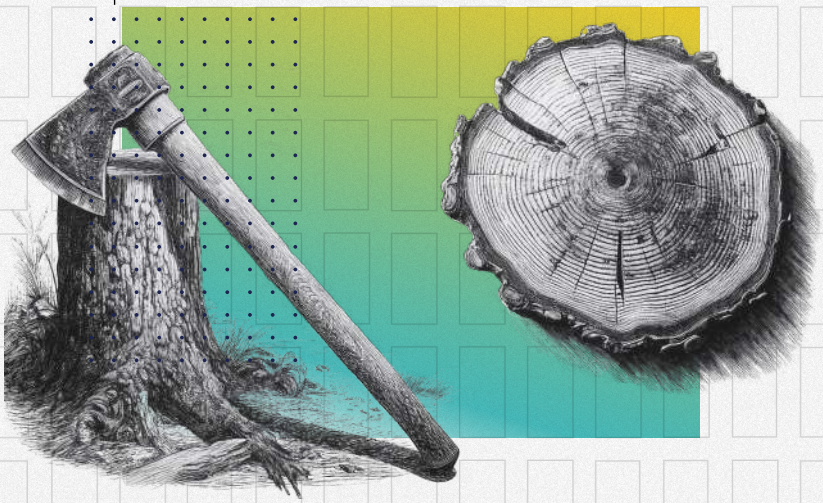


WILDLIFE TRAFFICKING



LAND GRABBING

ILLEGAL LOGGING AND DEFORESTATION



OPEN DATA

AND THE FIGHT AGAINST ENVIRONMENTAL CRIME



ILLEGAL MINING

PESTICIDE MISUSE



OPEN DATA

AND THE FIGHT AGAINST ENVIROMENTAL CRIME

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ORGANIZED BY Brazilian Association of Investigative Journalists (Abraji), Centro de Vida Institute (ICV) and Transparency International - Brazil

AUTHORS Júlia Mariano, Marcondes G. Coelho-Junior, Maria Dominguez, Olívia Ainbinder, Reinaldo Chaves, Valéria Oliveira, Débora Maria Carvalho

TECHNICAL REVIEW Ana Paula Valdiones, Bruno Morassutti, Renato Morgado, Tatiana Farah

TEXT REVIEW XXX

GRAPHIC DESIGN Guto Rodrigues

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OPEN DATA

AND THE FIGHT AGAINST ENVIROMENTAL CRIME

A STUDY ON THE QUALITY OF FEDERAL AND THE AMAZON STATES DATABASES

EXECUTIVE SUMMARY

ENVIRONMENTAL CRIMES, SUCH AS ILLEGAL LOGGING AND DEFORESTATION, WILDLIFE TRAFFICKING, ILLEGAL MINING, PESTICIDE MISUSE AND RELATED CRIMES AS LAND GRABBING HAVE SEVERAL NEGATIVE IMPACTS ON SOCIETY, THE ENVIRONMENT AND THE ECONOMY.

Besides their direct and secondary negative consequences, environmental crimes are often associated with other illicit activities, such as fraud, corruption, money laundering, tax crimes and drug trafficking. Hence, tackling environmental crimes becomes even more complex.

The prevention, detection, investigation and sanctioning of environmental crimes in Brazil requires the work of different actors, including state actors (such as environmental, land and mining agencies, military, federal and civil police, the Public Prosecutor's Office, the Judiciary, among others) and non-state actors (such as journalists, activists, civil society organizations and researchers, etc.).

The work of such ecosystem of agents requires the mobilization of approaches and instruments compatible with the complex dynamics of environmental crimes and with the territorial extent where they occur. Therefore, the reuse, cross-referencing, analysis and visualization of public data - especially the one that enables the evidence recollection of environmental crimes - allow the design of innovative, scalable and relatively low-cost solutions for tackling those illicit activities.

Regarding this matter, the following study consists on a diagnosis of **41 databases** degree of openness. Those are currently managed by federal public agencies and by public institutions along the **nine states in**

Legal Amazon. The research evaluates databases relating to six types of environmental crime – illegal logging, deforestation and mining, wildlife trafficking, pesticide misuse, and land grabbing – as well as cross-cutting databases, including those relating to environmental administrative sanctions.

The analysis considered eight quality criteria: up-to-dateness, completeness, single download, machine-readability, existence of a free license, documentation, non-proprietary format and cost-free access.

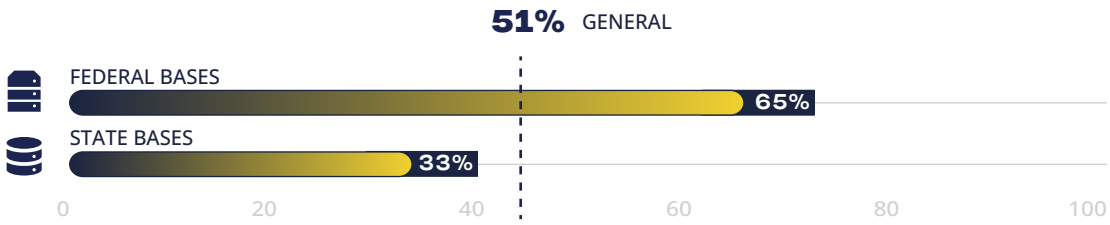
The evaluations for each criterion were coded as 1 (criterion met) or 0 (criterion not met). In some cases, the scores varied from 0 to 1 (criterion partially met). Based on these scores, the final result obtained by each base was calculated on a scale ranging from 0 to 100. Bases that scored from 0 to 30 were considered to have a low openness index; those between 31 and 70 were classified as medium; and bases that scored from 71 to 100 were considered to have a high index.

In addition to the result per base, the following were calculated: (i) the overall openness result, based on the simple average of the results of the bases evaluated; (ii) the overall state and federal results, based on the simple average of the bases evaluated at each level of government; and (iii) the result per environmental crime, based on the average of the bases for each type of offense.

The results show that despite the availability of some of these databases, which already allows them to be used for various purposes by state and non-state actors, the degree of general openness is still unsatisfactory.

On average, the databases evaluated have a “medium” degree of openness, at 51%. From the 41 databases evaluated, From the 41 databases evaluated, only 14 achieved a high score, while 16 were classified as medium, and 11 obtained a low openness index. Of those with a “low” score, 10 scored zero.

CHART 1 EVALUATION RESULTS, BY LEVEL OF GOVERNMENT



When segmented by level of government, the average openness score for federal bases is 65%, lower than expected, and for state bases only 33%, which is even more worrying. Only one state achieved a high score (Mato Grosso), while four scored low. Finally, three states (Acre, Maranhão and Roraima) scored zero on embargoes and infraction notice openness.

This inequality can also be seen in relation to the databases segmented by different types of environmental crime. The databases that monitor illegal deforestation and logging, for example, are the ones with the highest levels of openness: 93% and 84%, respectively. The databases on illegal mining and pesticide misuse achieved average results (67% and 56%, respectively), as did federal data across different types of crime (64%). The databases for identifying and monitoring land grabbing, and crimes against fauna, had the worst results, with average and low scores and with degrees of openness below 40%.

The following charts show the detailed results by level of government:

CHART 2 EVALUATION RESULTS BY TYPE OF ENVIRONMENTAL CRIME

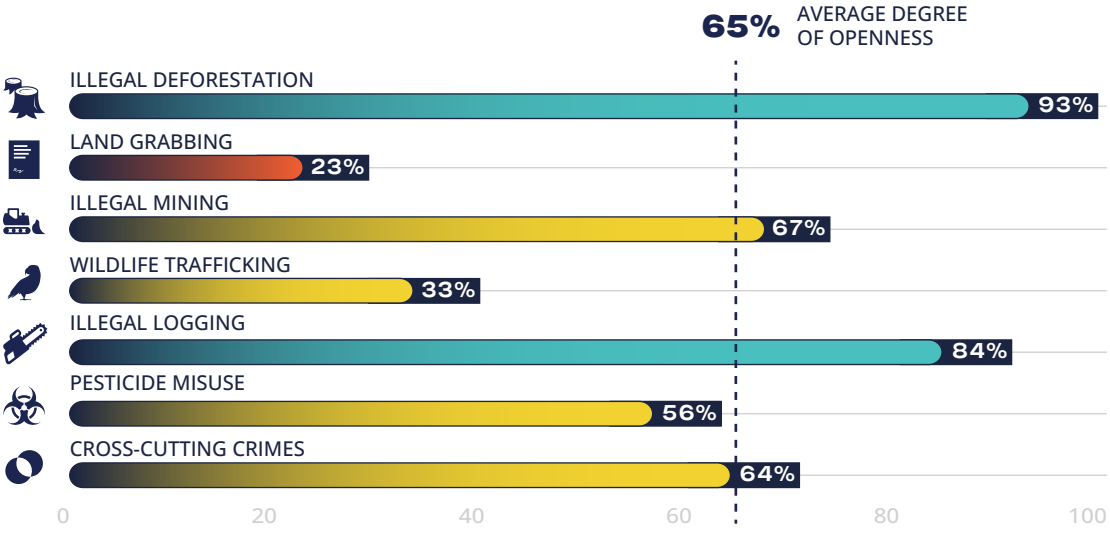


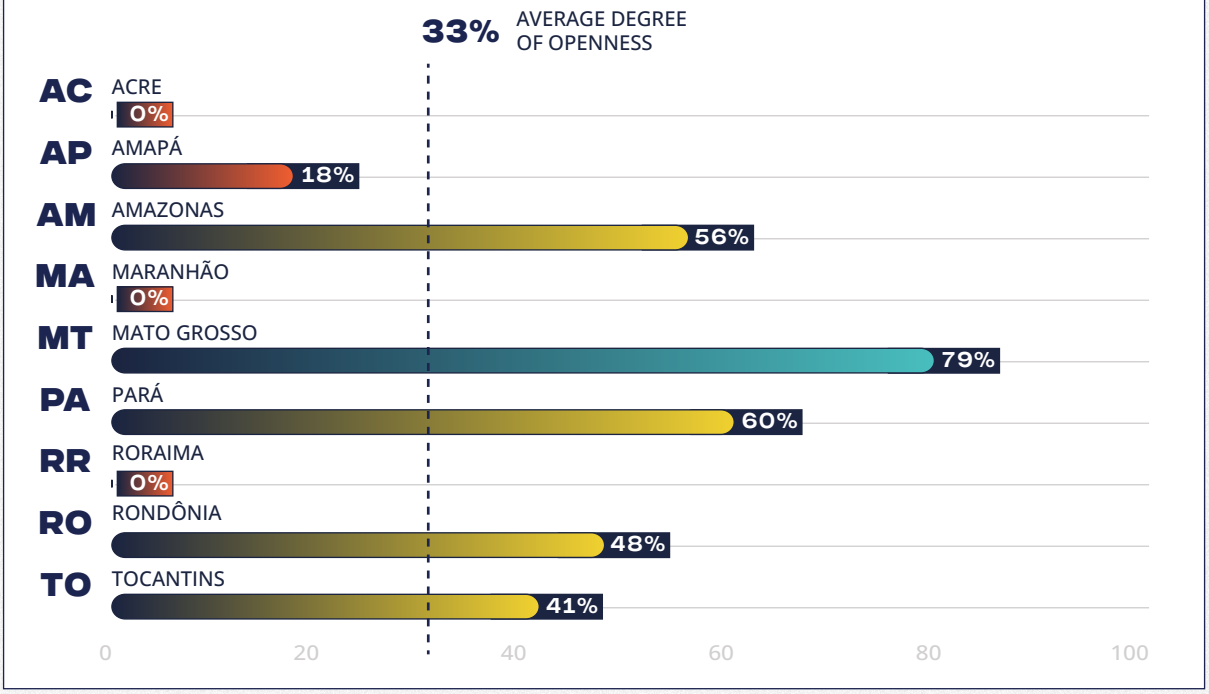
CHART 3 EVALUATION RESULTS ON FEDERAL DATABASES



CHART 4 EVALUTATION RESULTS ON STATES DATABASES



CHART 5 EVALUATION RESULTS BY STATE



CONSIDERING THE FINDINGS, IF THE POTENTIAL OF PUBLIC DATA IS TO BE FULLY EXPLOITED IN TACKLING ENVIRONMENTAL CRIME IN BRAZIL, A SET OF MEASURES IS NEEDED TO IMPROVE ITS USE AND OPENNESS.

In this regard, we present the following general recommendations for the bodies managing the databases evaluated, as well as the bodies responsible, across the board, for transparency and open data policies, such as the comptroller general's offices:

- Establishing the periodicity of the publication of data by the bodies holding the databases analyzed, ensuring that it is made available in an up-to-date manner.
- Publication of the databases in their entirety, guaranteeing the availability of all existing information, and the possibility of a single download, allowing easy access to all available data.
- Publication of databases in machine-readable, non-proprietary formats, along with metadata and data dictionaries, and using free licenses.

- Publication and improvement of federal databases, especially the Animal Transit Guide (GTA), the Rural Environmental Registry (CAR), the Land Management System (SIGEF), the National Rural Registry System (SNCR), the Amateur Bird Breeding Activity Control and Monitoring System (SisPass) and databases of fined pesticide companies, considering their relevance and the fact that they received the worst rating among the federal databases evaluated.
- Publication and improvement of state databases that allow the identification of potential offenses and corresponding administrative sanctions (embargoes and infraction notices), as well as other relevant databases.
- Creation, by the states, of open data plans and environmental transparency portals, as instruments that make it possible to open, make available and access state databases.
- Holding public consultations and opening communication channels with open data users to receive demands, suggestions and complaints about published databases.
- Encouraging the creation of a network of federal and sub-national public actors and civil society organizations that use open data to tackle environmental crimes, in order to share experiences and good practices, as well as to encourage innovation.



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