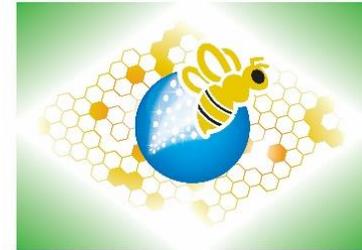


# Research needs to improve ecological risk assessment in Brazil



R. REBELO, D. MÁXIMO, K. CHAM, C. TONELLI, C. DIAS, F. VIANA-SILVA, L. BORGES, I. TEIXEIRA, R. SOUZA – IBAMA; C. MARCONDES, C. BELCHIOR - MMA;

C. PIRES, R. SCORZA JR – EMBRAPA; A. WAICHMAN - UFAM; R. OLIVEIRA - UNB; O. MALASPINA - UNESP; R. NOCELLI – UFSCAR;

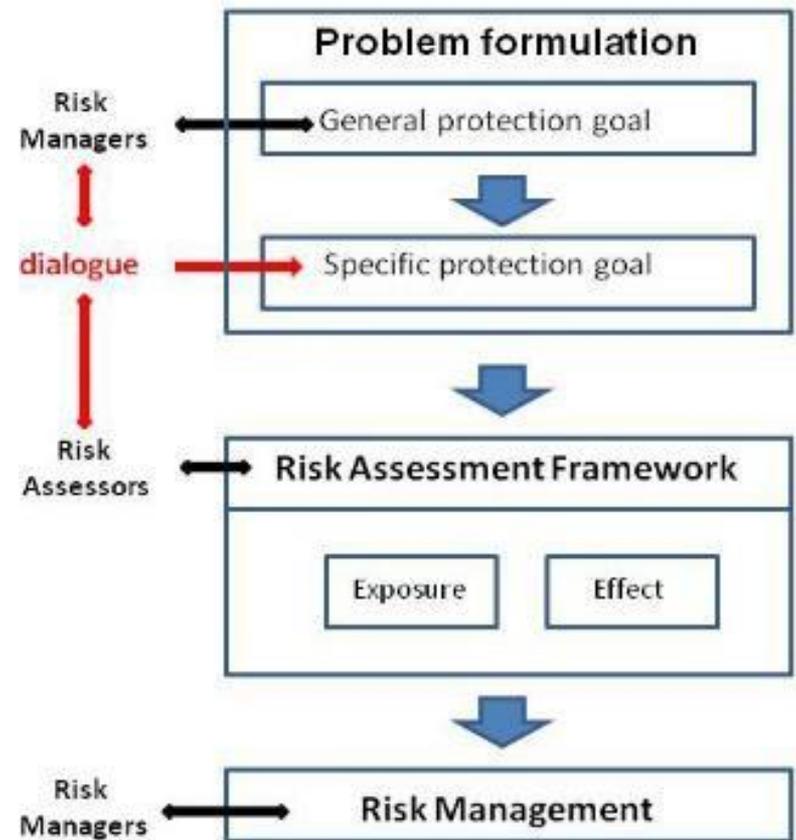
A. TORNISIELO - BASF; A.P. CIONE - SYNGENTA; A. SHIWA - DUPONT; L. MURAKAMI, X. PATINO - BAYER; A. FERRAZ, G. GUIMARÃES - ANDEF.

# Current status of Environmental Risk Assessment of pesticides in Brazil

Risk assessment procedures started to be developed in 2010 (so, this is relatively a new topic for Brazil).

Carried out by Ibama from 2012:

- New active ingredients
- Reevaluation process (neonicotinoids).



# Working Groups for risk assessment of pesticides

- 2015: 2 Working Groups coordinated by Ibama;
- Pollinators and aquatic organisms;
- Government, academia & industry;
- Brazilian regulations survey;
- General Protection Goal.



# Aquatic organisms



Only Tier 1: Worst case scenarios

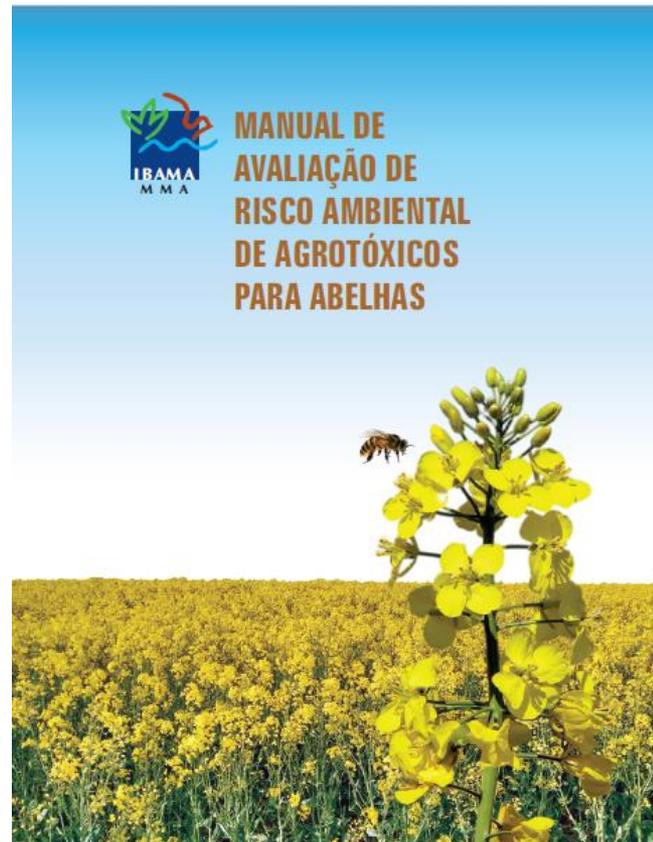
US EPA Approach: exposure assessment and risk characterization

- Estimated Environmental Concentrations (EECs): GENEEC;
- Toxicity inputs requested by Ordinance Ibama nº 84 (Algae, microcrustacean and fish – acute and chronic);
- Risk Quotient (EEC/toxicity) compared to the same Levels of Concern (LOCs) established by USEPA.

# Pollinators



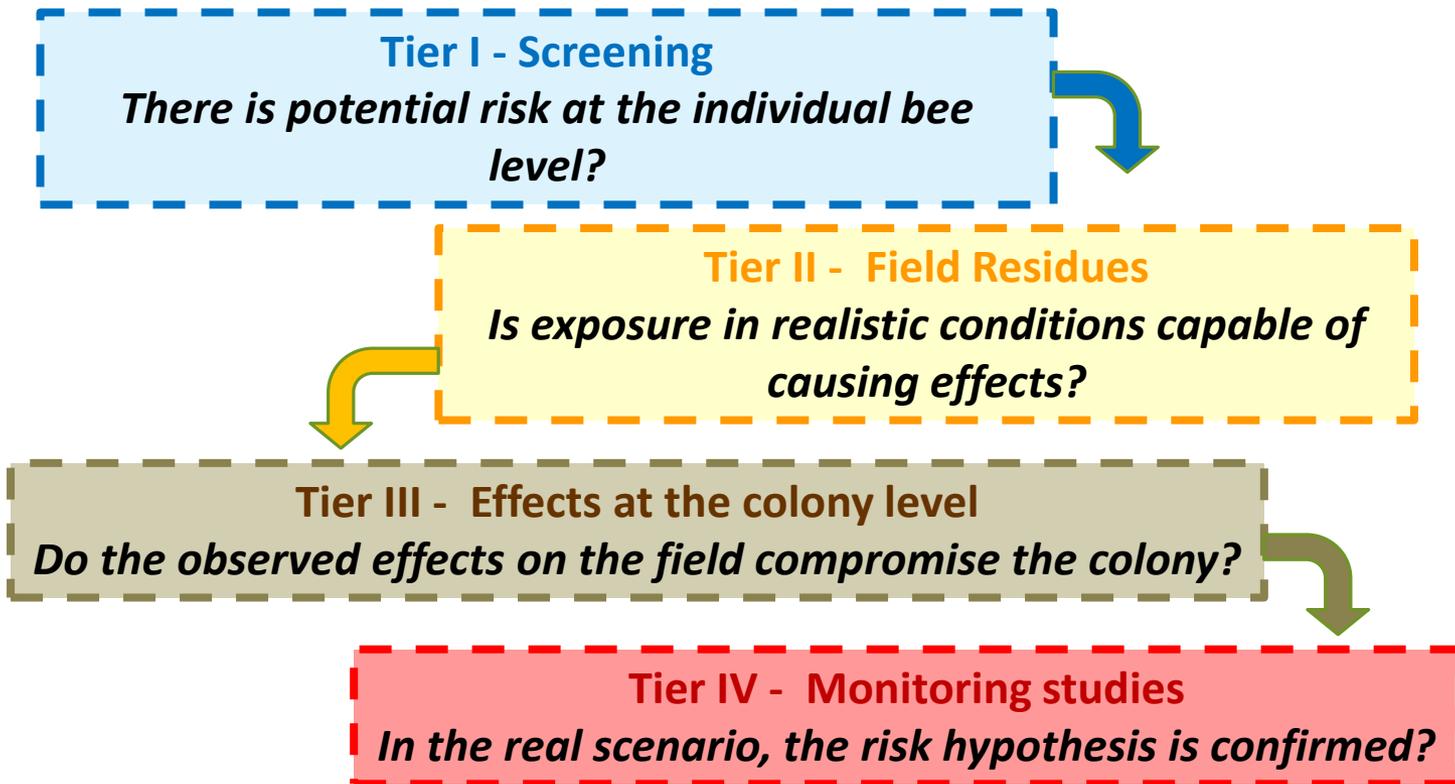
IN (Normative Instruction) nº 02,  
from February, 10th,  
2017.



Guidance of  
Ecotoxicological Risk  
Assessment of  
Pesticides for Bees

Available on  
[http://www.ibama.gov.br/  
agrotoxicos/reavaliacao-  
ambiental](http://www.ibama.gov.br/agrotoxicos/reavaliacao-ambiental)

# Pollinators



# Gaps in knowledge

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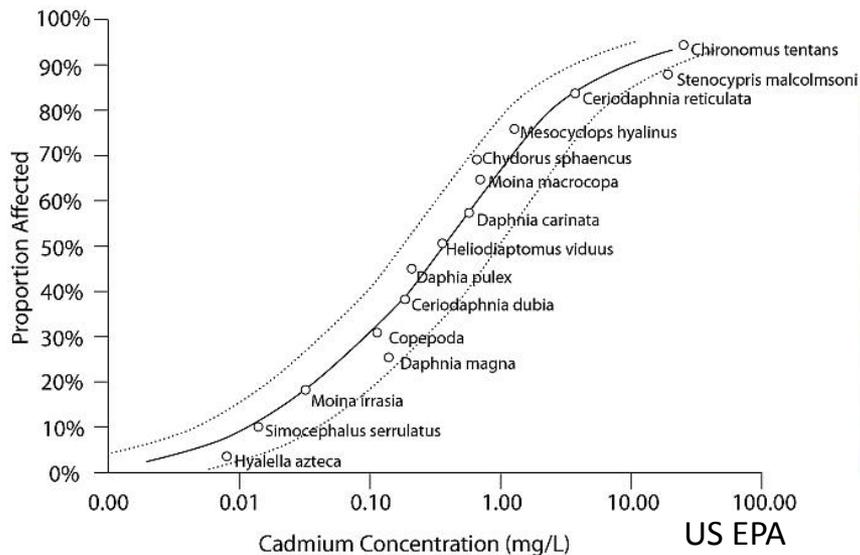
A lot of uncertainty and needs:

- How native species are sensitive to pesticides?
- In what extension standard species can be used as good surrogates to protect native species?
- What are the levels of exposure in Brazilian scenarios?
- How the exposure routes can be different for native species?



# Research needs

## SSD's curves for native species



## Residue studies in relevant matrices



Eurofins

# Research needs

US EPA



Brazilian soils

Monitoring  
of water  
bodies



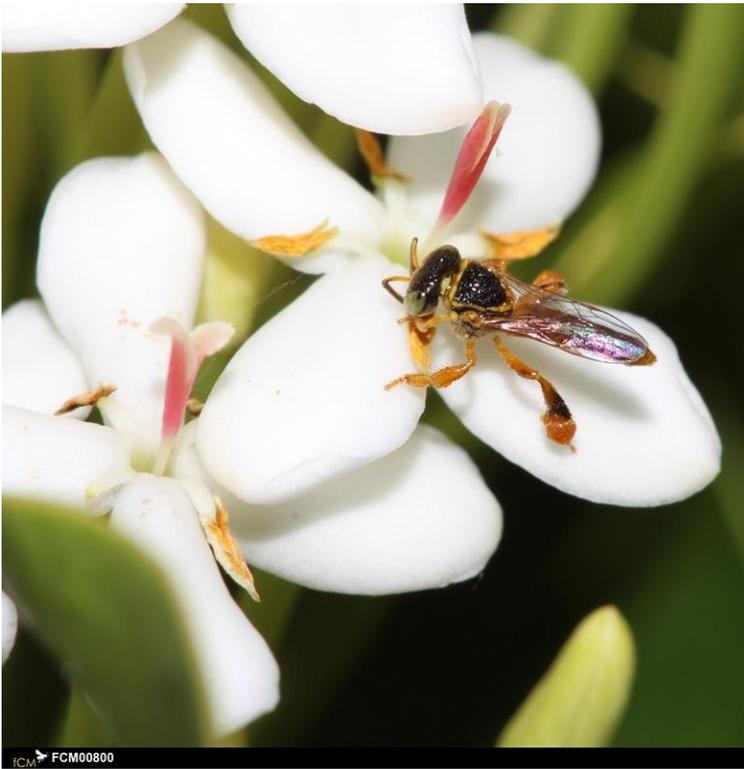
Soilnews



Validation  
of spray  
drift  
models

# Focus on native non-*Apis* bees:

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- Matrix of species selection (to be published soon): provided the basis to elect meliponines (stingless bees) as a priority group, and solitary bees as a second step;
- call for research in order to fill the gaps and assess the need of inclusion of a native bee in the risk assessment scheme and development/adaptation of protocols and tools.

# Thank you for your attention!

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IBAMA - Brazilian Institute for Environment and Renewable Natural Resources  
DIQUA - Environmental Quality Division  
CGASQ - General Coordination of Evaluation and Control of Chemicals and Hazardous Products

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http: <http://www.ibama.gov.br/agrotoxicos/reavaliacao-ambiental>