Under-reporting research relevant to local needs in the global south. Database biases in the representation of knowledge on rice

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Bibliometrics can provide very helpful tools for developing knowledge representations that can help in addressing grand challenges or societal problems, such as tackling obesity, climate change or pandemics. However, these representations are highly dependent on the data and methods used. The aim of this paper is to investigate potential biases introduced by available databases in the representation of research topics.

In a previous study on rice research, we showed that the bibliographic database CAB Abstracts (CABI) – which is focussed on agriculture and global health – has a larger coverage of rice research for most low income countries than Web of Science (WoS) or Scopus.

In this study, we present evidence that this unequal coverage distorts significantly the knowledge representation of rice research, globally and for different countries. We find (Figure 1) that the journal coverage of the bibliometric databases WoS and Scopus under-represent some of the more application oriented topics, namely: i) production, productivity and plant nutrition (top left); ii) plant characteristics (top center); and iii) diseases, pests and plant protection (center).

Given that these are issues relevant to small farmers, producing for the local market, and with no access to the seeds developed with molecular biology techniques (GM – bottom left), we pose the question whether the inadvertent effect of the biases in the dominant database is to under-represent the type of research that is relevant for improving their wellbeing, without introducing the use of the highly contested GM seeds.

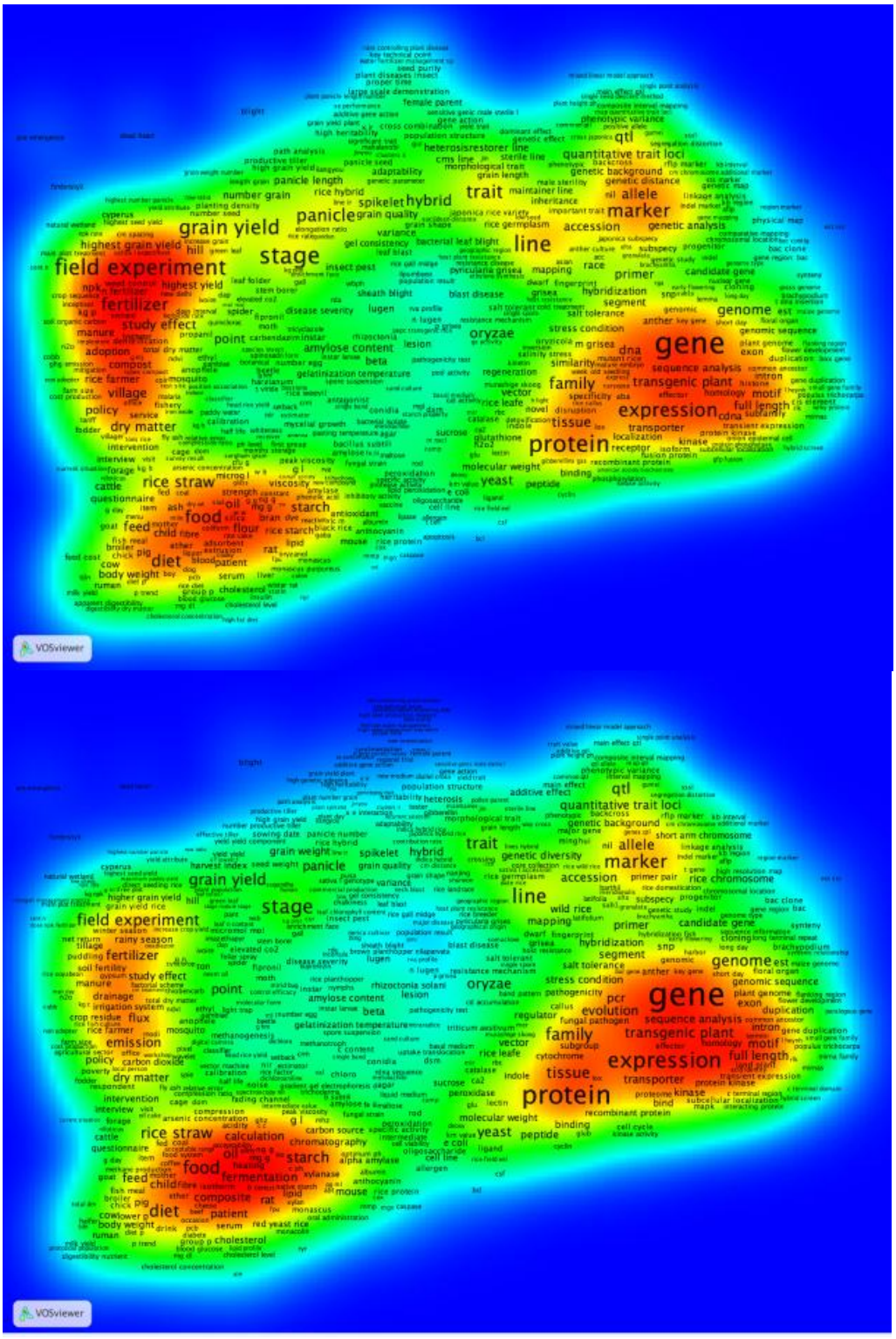

Figure 1. Publication density for rice research in CABI (top) and in WoS (bottom). The top left and top right areas under-report in WoS are related to production and seed characteristics.