

# Supplementary Material

## THE DATASET

The Food and Agriculture Organization of the United Nations (FAO) has gathered annual global, regional and country data since 1961 concerning the number of honey-bee hives and honey production, and crop cultivation (including area, production, and yield) for 144 crops or crop items (FAOSTAT 2021), after excluding crops categorized as ‘nes’ (i.e., not elsewhere specified) and a crop category termed ‘mushrooms and truffles’ that is also not taxonomically specified. We followed FAO’s crop classification and considered each reported crop or crop item as a separate unit. Although most crops are represented by single species, varieties of the same species, or by the same species harvested green or dry or for different parts, a few crops comprise clusters of taxonomically-related or even unrelated species (Supplementary Material 2). These 144 crops/crop items (hereafter ‘crops’) accounted for ~96% of global agricultural production during 2018. Although the FAO dataset was updated until the year 2019, we excluded this year because of incomplete records for some countries or crop items. Therefore, our analyses considered the period 1961-2018.

We assigned pollinator-dependence categories following the classification of Klein et al. (2007). This classification includes one non-dependent category, ‘none’ (i.e., no decrease in yield because the crop is wind-pollinated, completely autogamous, or harvested for non-reproductive parts), and four dependent categories that differ in their percentage yield reduction in the absence of pollinators: ‘little’ (yield reduction between  $>0$  and  $\leq 10\%$ ), ‘modest’ (between  $>10$  and  $\leq 40\%$ ), ‘high’ (between  $>40$  and  $\leq 90\%$ ), and ‘essential’ ( $>90\%$ ). Although we reviewed additional recent literature, for most crops (102) we adopted the well-accepted dependence values provided in Klein et al. (2007), despite disagreement with some newer specific studies. However, we changed the Klein et al. (2007) classification for two crops, oil palm (from little to high) and broad bean (from modest to high), because accumulated evidence demonstrate greater dependence than assigned initially (Supplementary Material 2). For crops not categorized in Klein et al. (2007), we assigned dependence as ‘none’ if harvested for vegetative parts, or assessing specifically the extent of pollinator dependence and assigned to one of the pollinator-dependent categories (i.e., none, little, modest, high, or essential) based on literature if harvested for fruits or seeds (11 of these crops were previously classified in Aizen et al. 2019). Despite providing categories of pollinator dependence for all 144 crops (Supplementary Material 2), we excluded 10 crops from our analysis that are used as a source of fiber (bastfibres, coir, flax, hemptow, jute, manila, ramie and sisal), rubber (natural *Hevea* rubber), or insecticide (pyrethrum) as they do not contribute to human nutrition (Supplementary Material 2). We also excluded six crops (i.e., cassava leaves, jojoba seed, kiwi fruit, natural gums, tallowtree seed and triticale) from the yield growth analyses (Figures 3 and 5A) because of incomplete time series (FAOSTAT 2021). In several analyses, we also considered four FAO’s aggregate crop categories (FAOSTAT 2021), two including mostly pollinator-dependent crops (‘oil crops’ and ‘fruit crops’) and two including non-dependent crops only (‘cereal crops’ and ‘root and tuber crops’) (Supplementary Material 2).

## REFERENCES

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