

# Global methane emissions from rice cultivation – improved estimation, regional disparities and trade-adjusted perspectives using EDGAR

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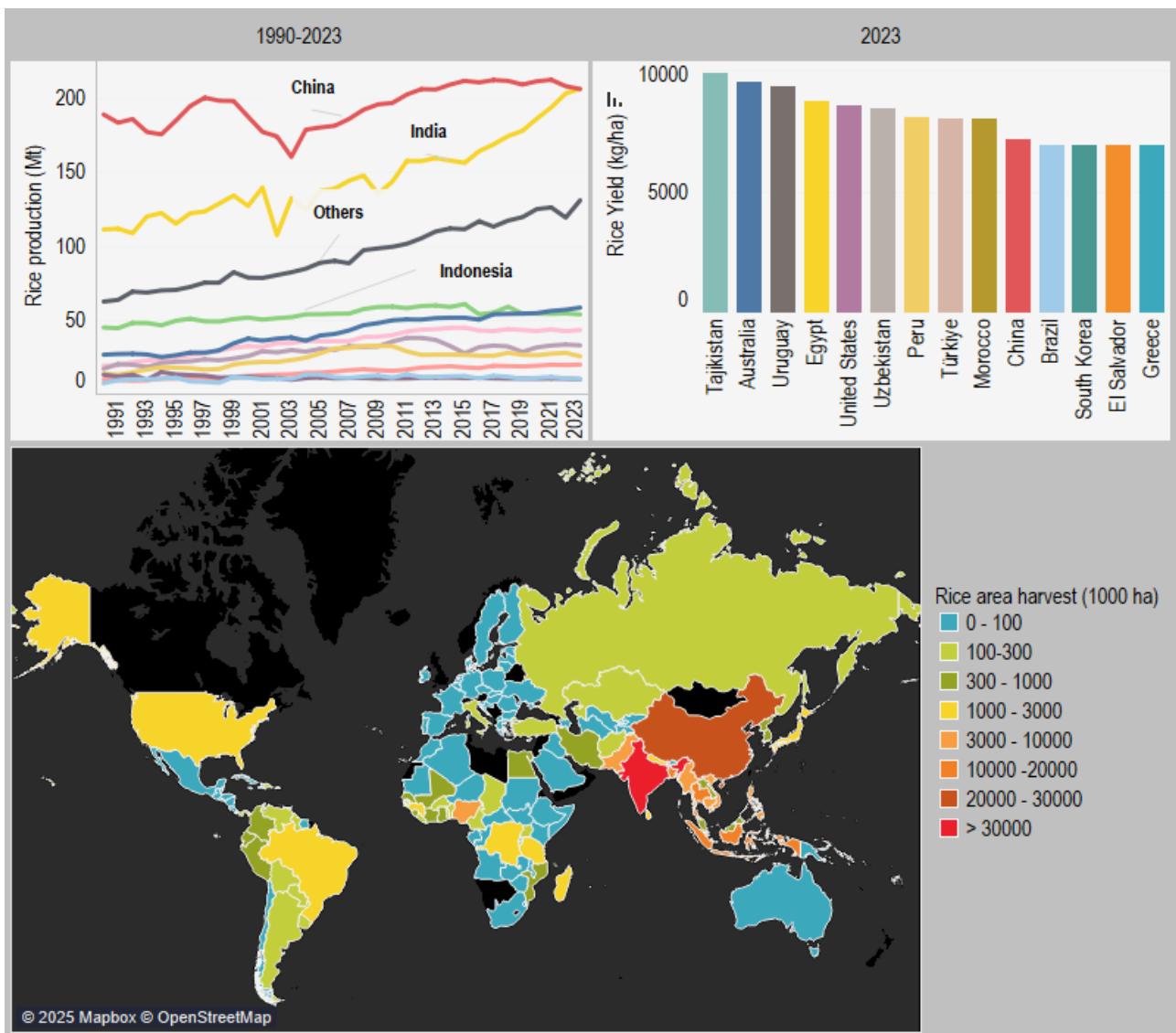
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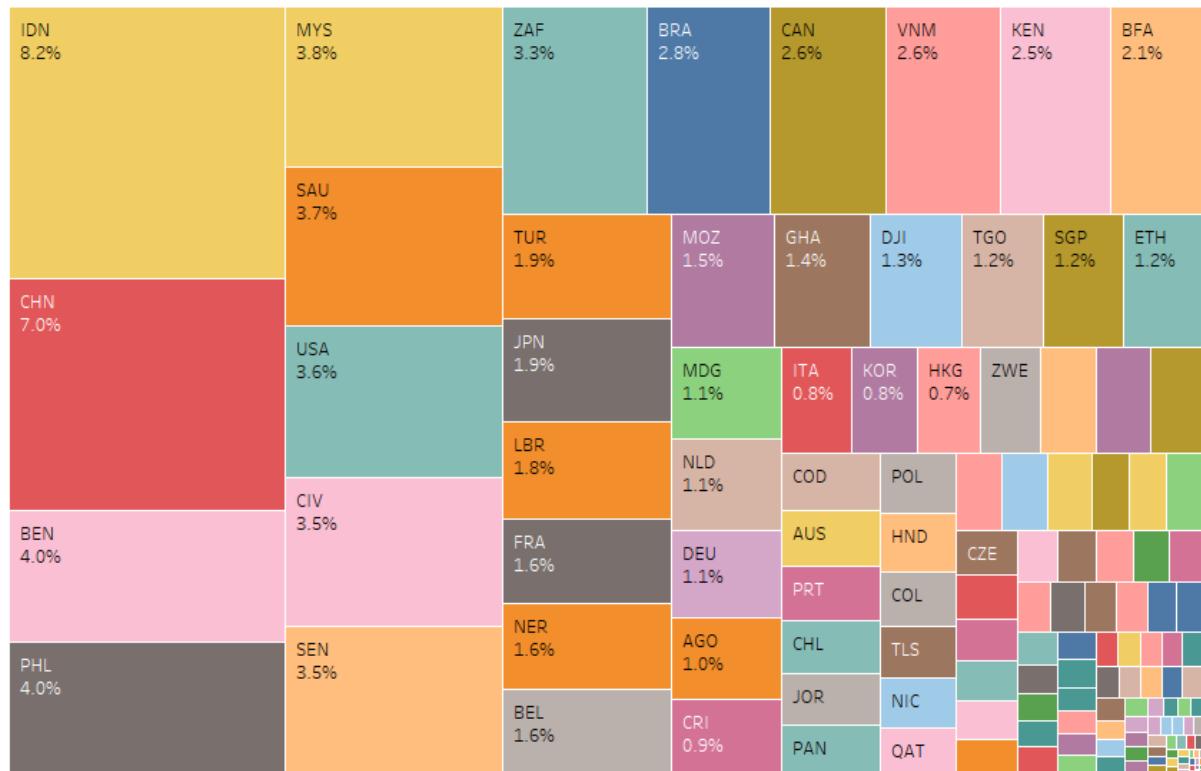
<sup>4</sup>European Commission, DG Research & Innovation, Bioeconomy and Food Systems Unit, Brussels, Belgium

Figure S. 1. Trends in rice production by country 1990-2023, top ranking countries by rice yields and rice area in 2023



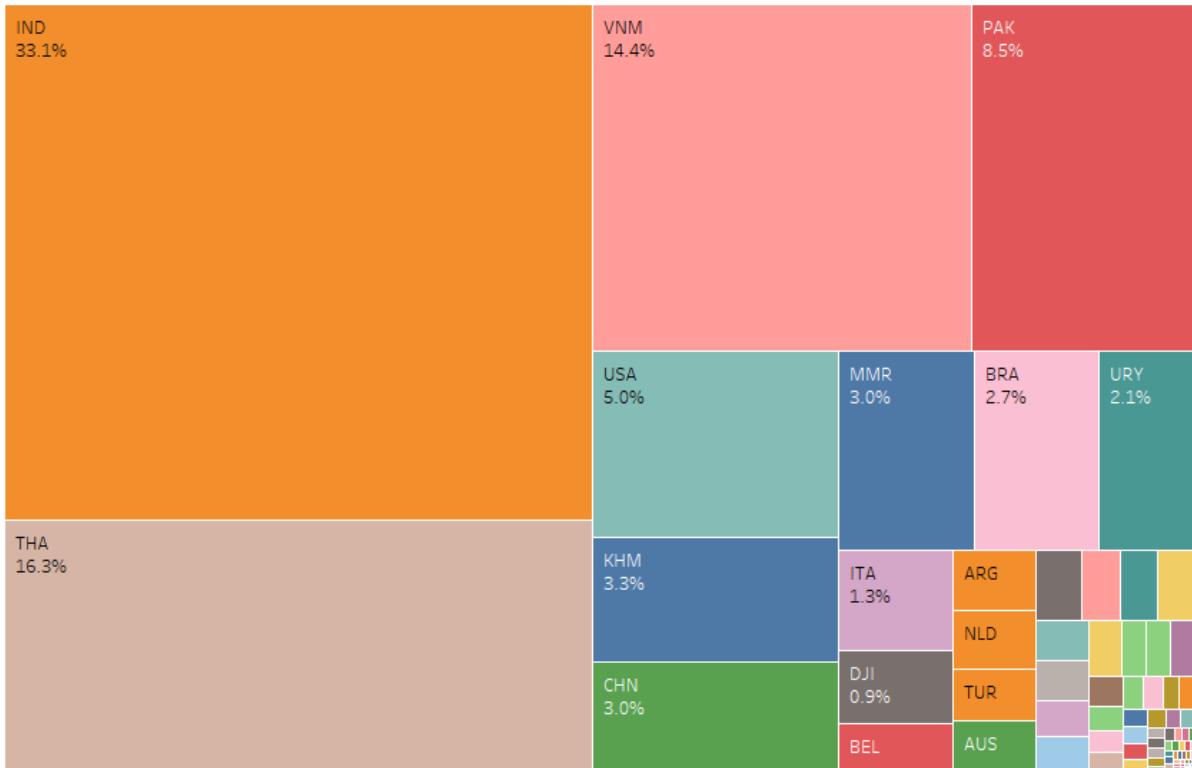
Source: FAOSTAT (last access July 2025), JRC elaboration

Figure S. 2. Rice imports by country, 2023



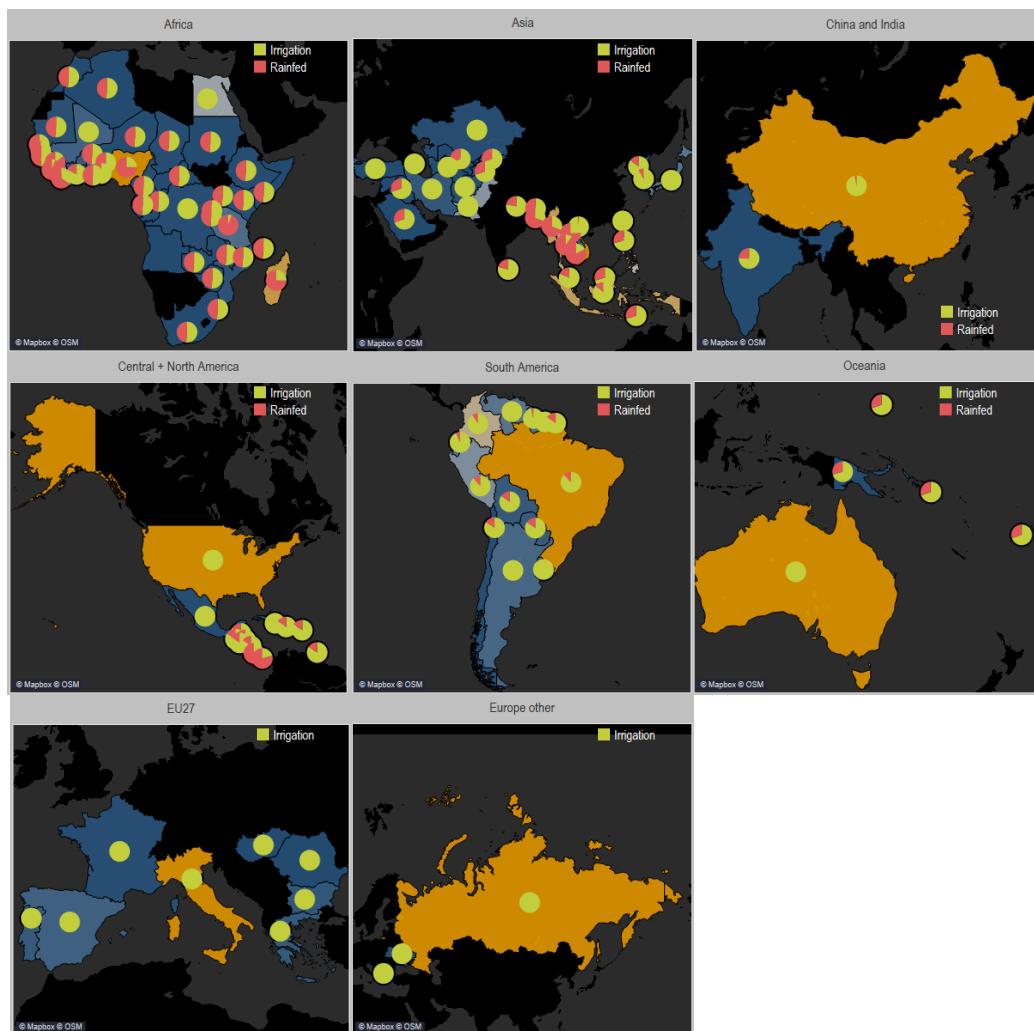
Source: FAOSTAT (last access July 2025), JRC elaboration

Figure S. 3 Rice exports by country, 2023



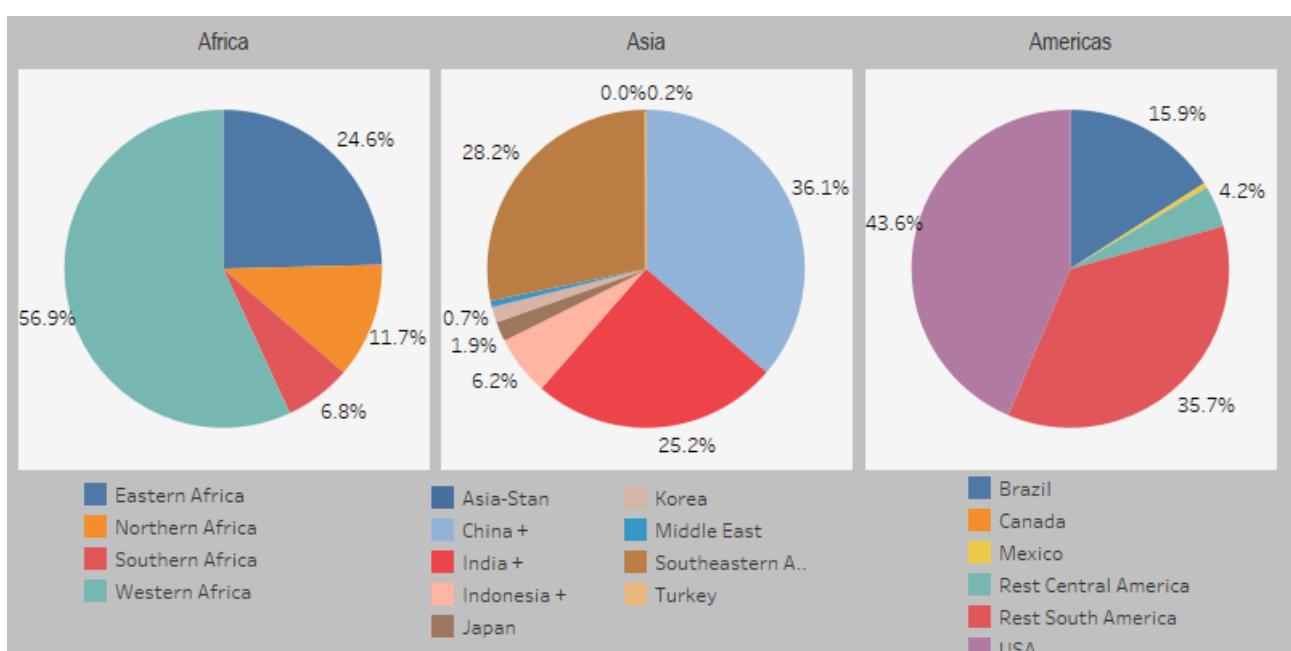
Source: FAOSTAT (last access July 2025), JRC elaboration

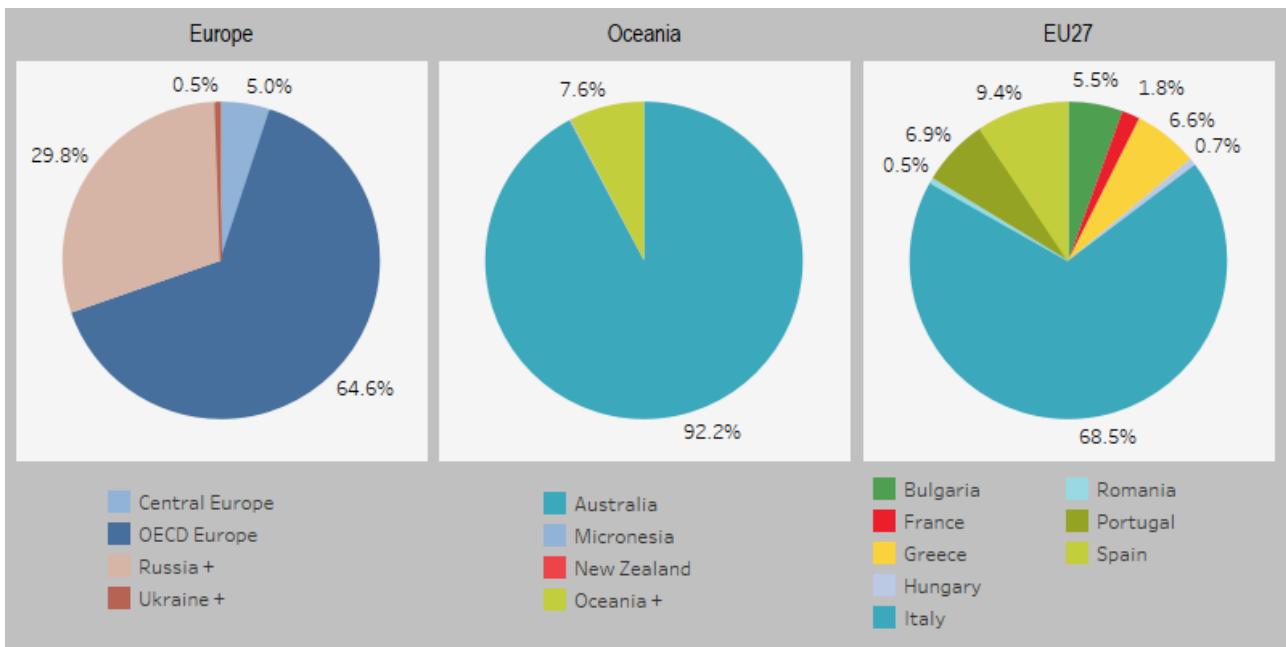
. Figure S. 4. Global distribution of CH<sub>4</sub> emissions from rice cultivation and share of irrigated versus rainfed systems.



Source: EDGAR, 2025

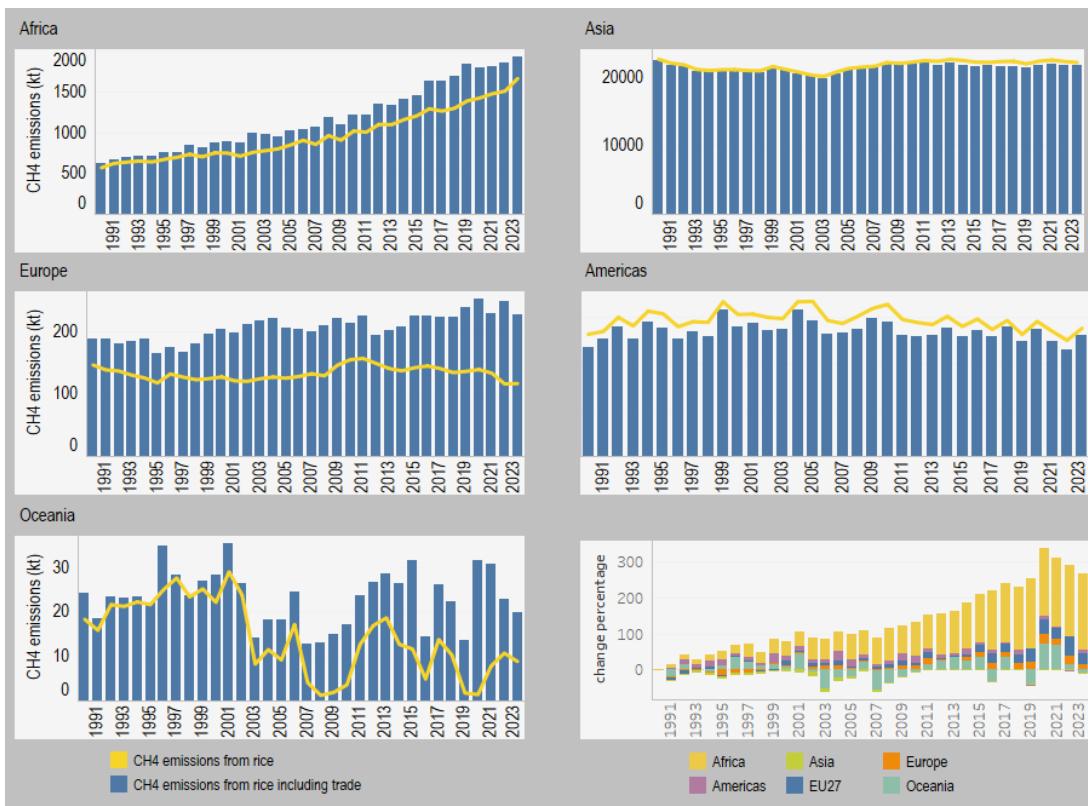
Figure S. 5 Relative contribution of subregions in the CH<sub>4</sub> emissions from rice cultivation, 2024





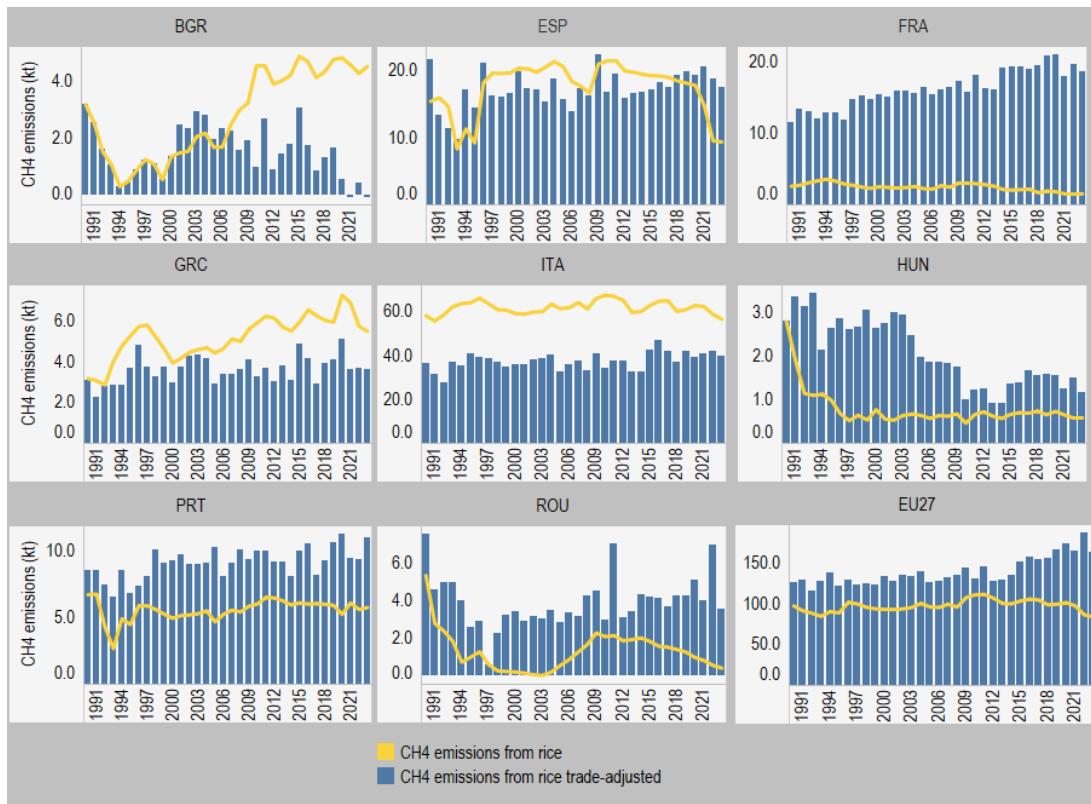
Source: EDGAR 2025

Figure S. 6. Rice-related CH<sub>4</sub> emissions, 1990–2023: production-based vs. trade-adjusted (kt): across five regions and relative change in regions trade-adjusted emissions since 1990 (%)



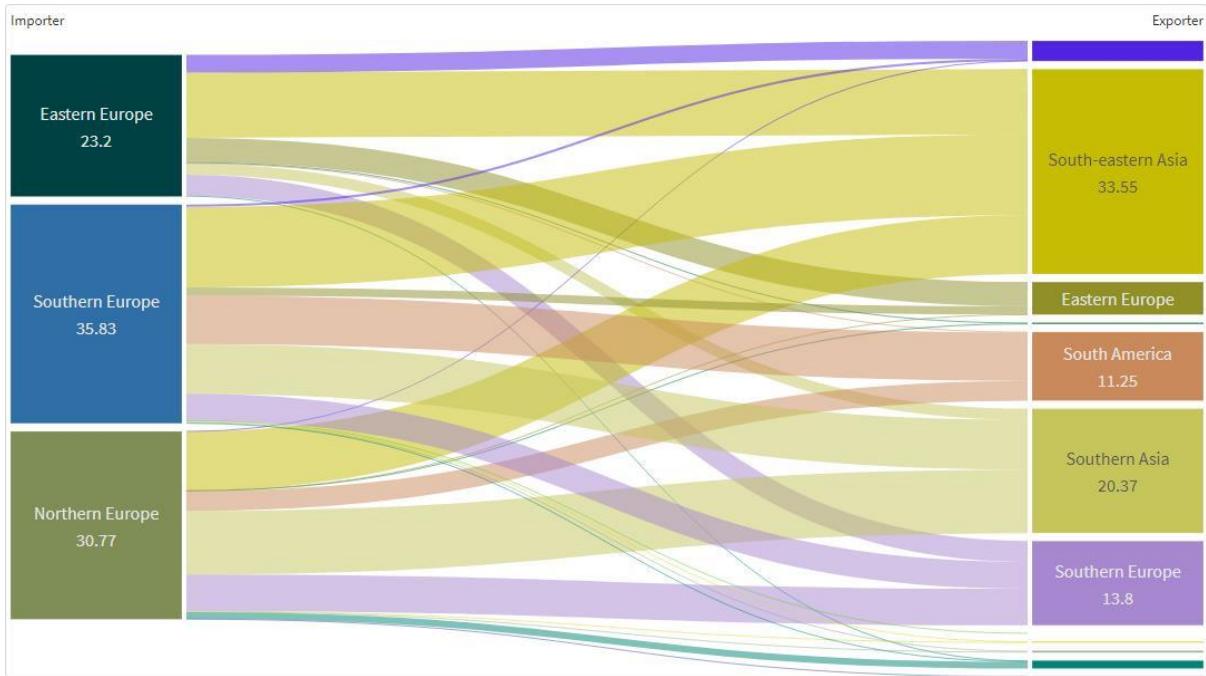
Source: EDGAR 2025

Figure S. 7. Rice-related CH<sub>4</sub> emissions, 1990–2023: production-based vs. trade-adjusted (kt): across EU27 MS and EU27 as a whole



Source: EDGAR 2025

Figure S. 8. Rice CH<sub>4</sub> emissions embedded in rice trade – Reporter Europe (kt), 2023



Source: EDGAR 2025

Figure S. 9 Rice CH<sub>4</sub> emissions embedded in exports – Reporter Americas (kt), 2023

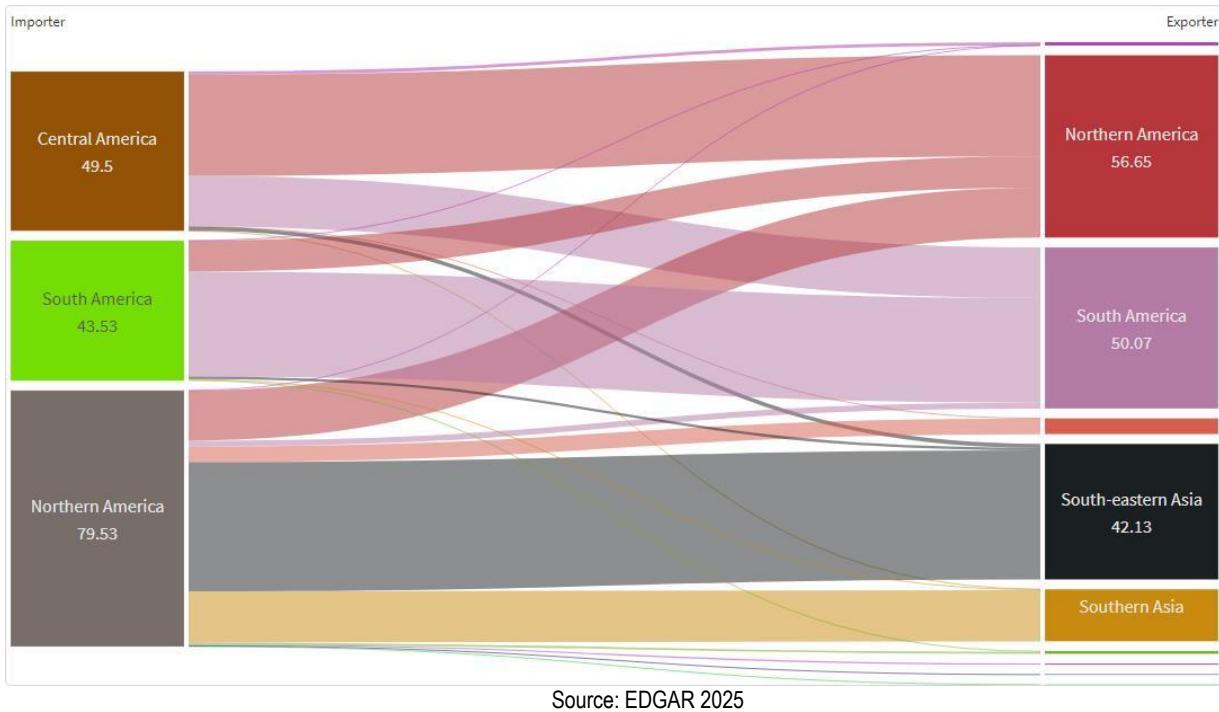


Figure S. 10 Rice CH<sub>4</sub> emissions embedded in exports – Reporter Asia (kt), 2023

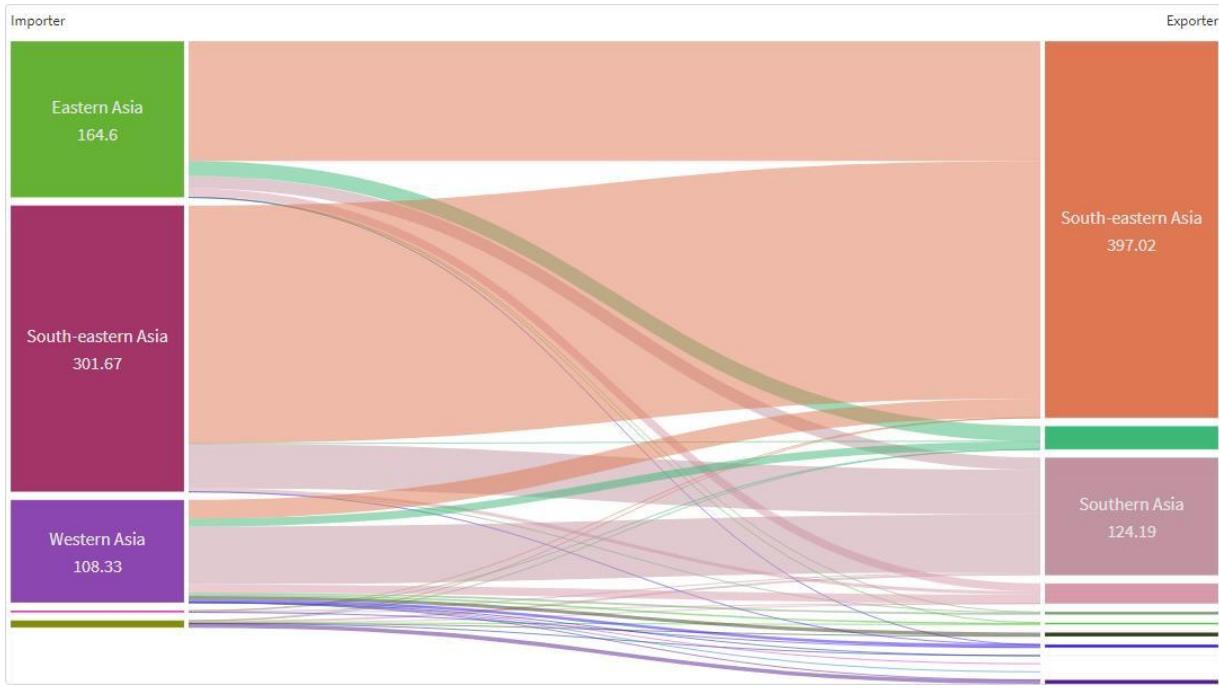
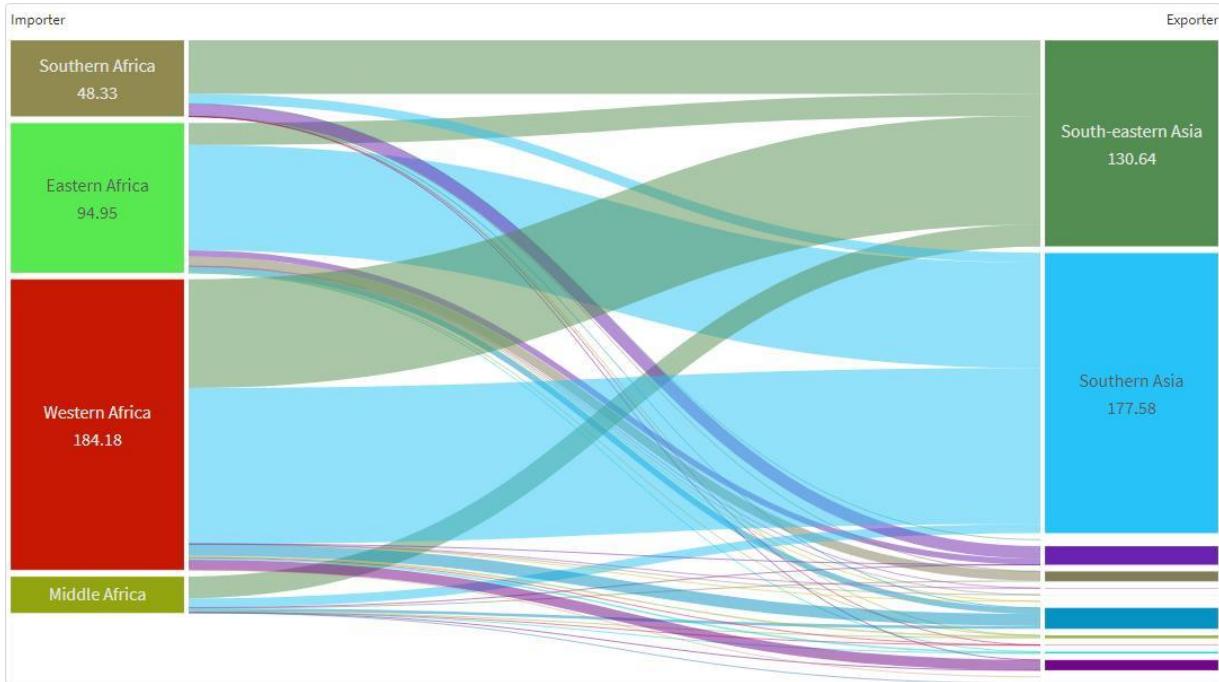
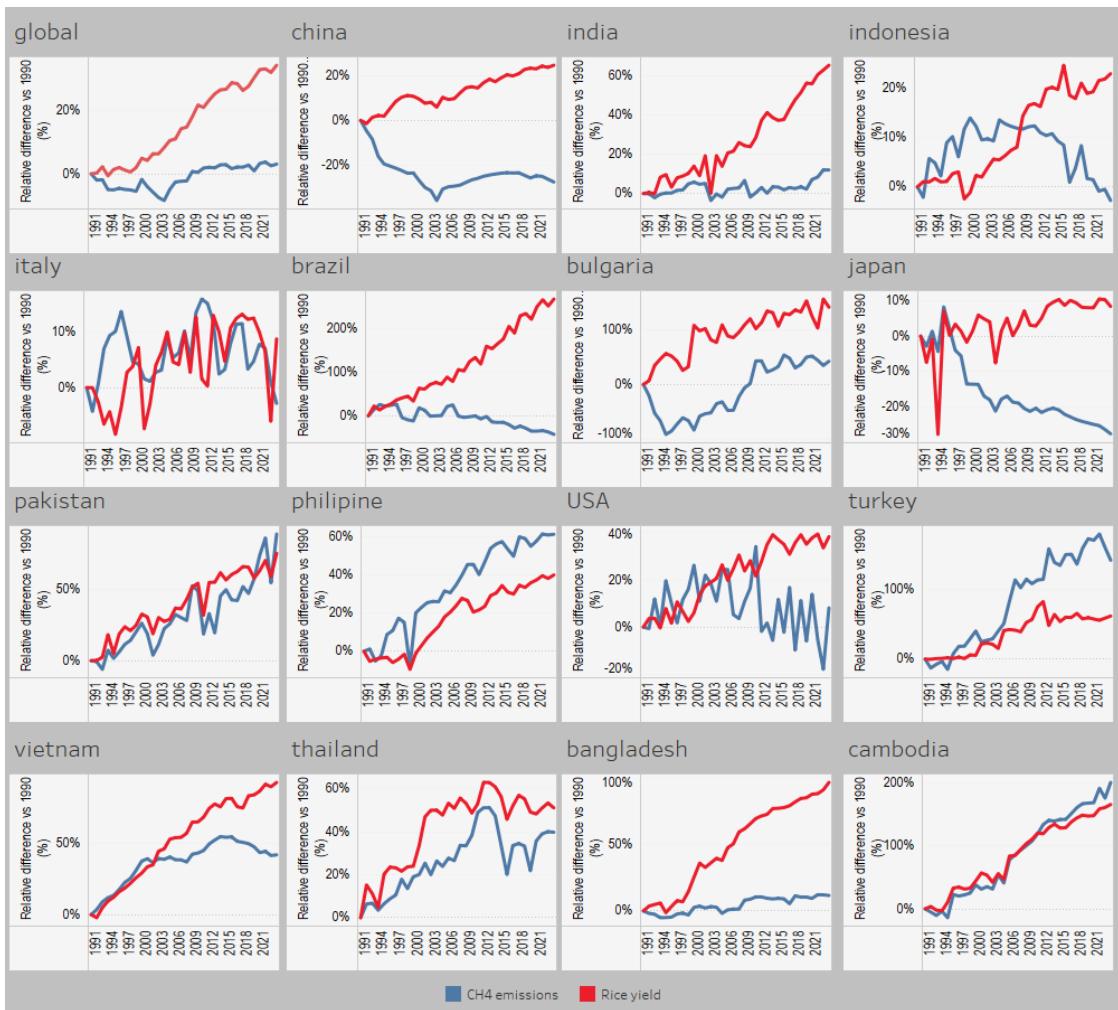


Figure S. 11 Rice CH<sub>4</sub> emissions embedded in exports – Reporter Africa (kt), 2023



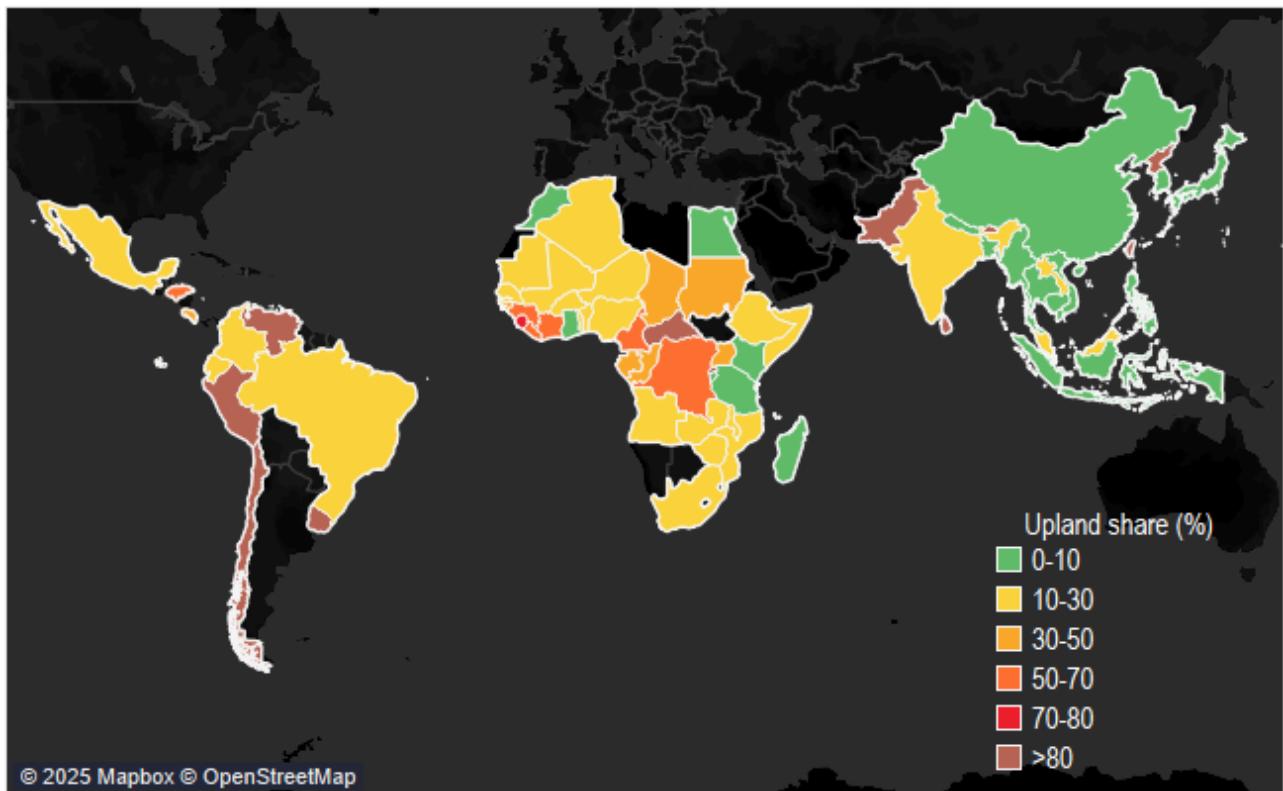
Source: EDGAR 2025

Figure S. 12. Production based CH<sub>4</sub> emissions and rice yields trend indexed vs 1990, 1990.2023 (%)



Source: FAOSTAT (last access July 2025), EDGAR 2025

Figure S. 13. Share in total rice cultivated area of the upland area



Source: EDGAR 2025

NB. Data compiled from FAOSTAT (FAO, 2025), UNFCCC inventory reports, IPCC default shares (IPCC, 2000), USDA-FAS statistics, and Saito et al. (2019).

Figure S. 14. Relative discrepancies between import and export matrixes vs Import & Export matrix, Spain, 1990-2023

