

SUPPLEMENTARY MATERIAL

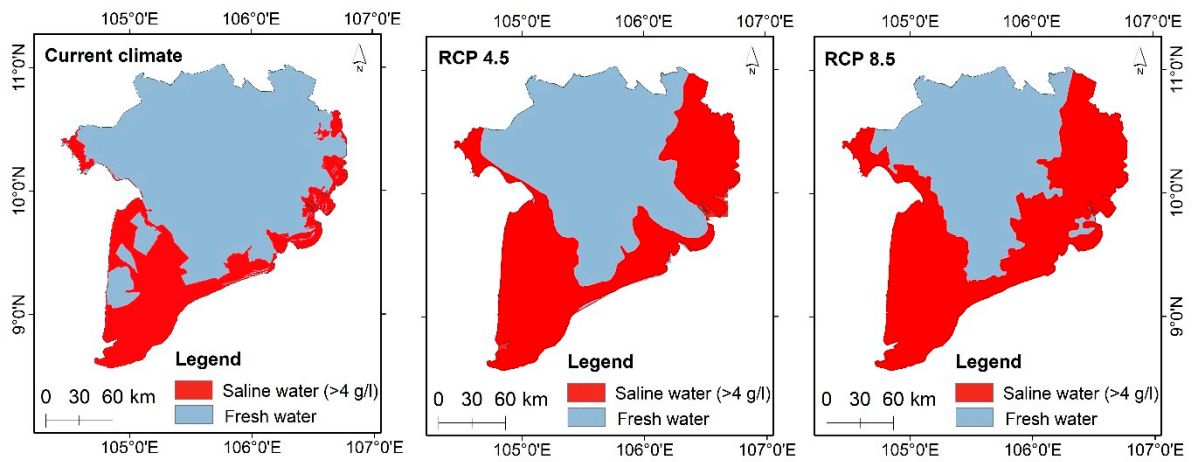


Figure S1. Salinity concentration maps in Mekong Delta, Vietnam under current climate, and RCP 4.5 and RCP 8.5 of the year 2050.

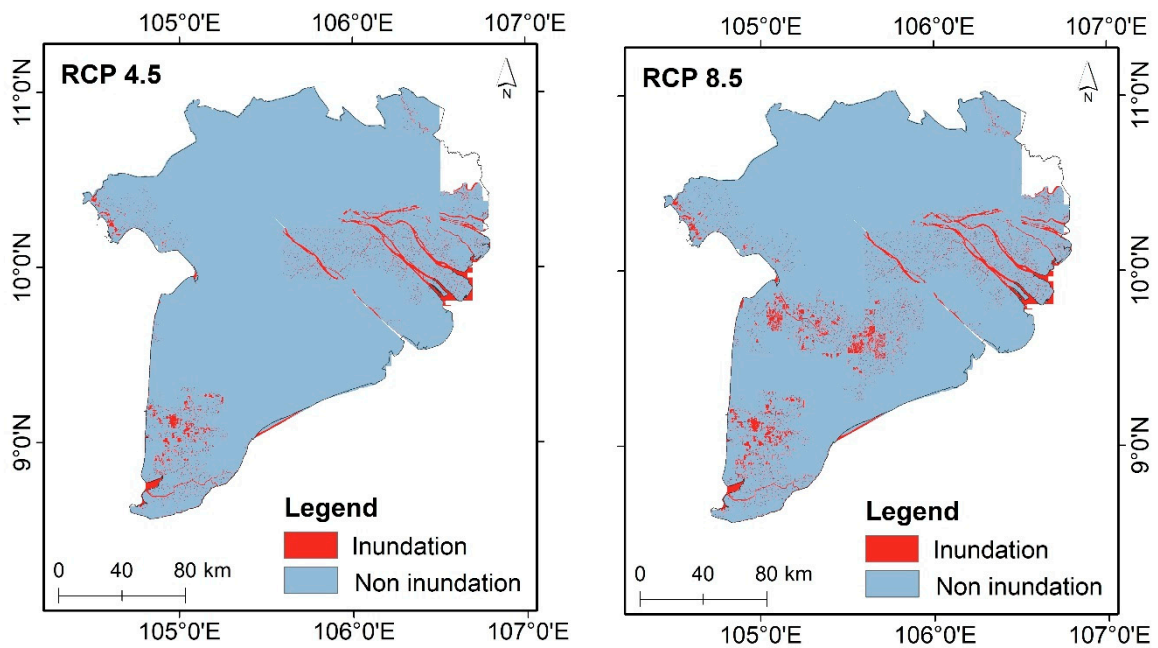


Figure S2. SLR-induced inundation maps in Mekong Delta, Vietnam under RCP 4.5 and RCP 8.5 of the year 2050.

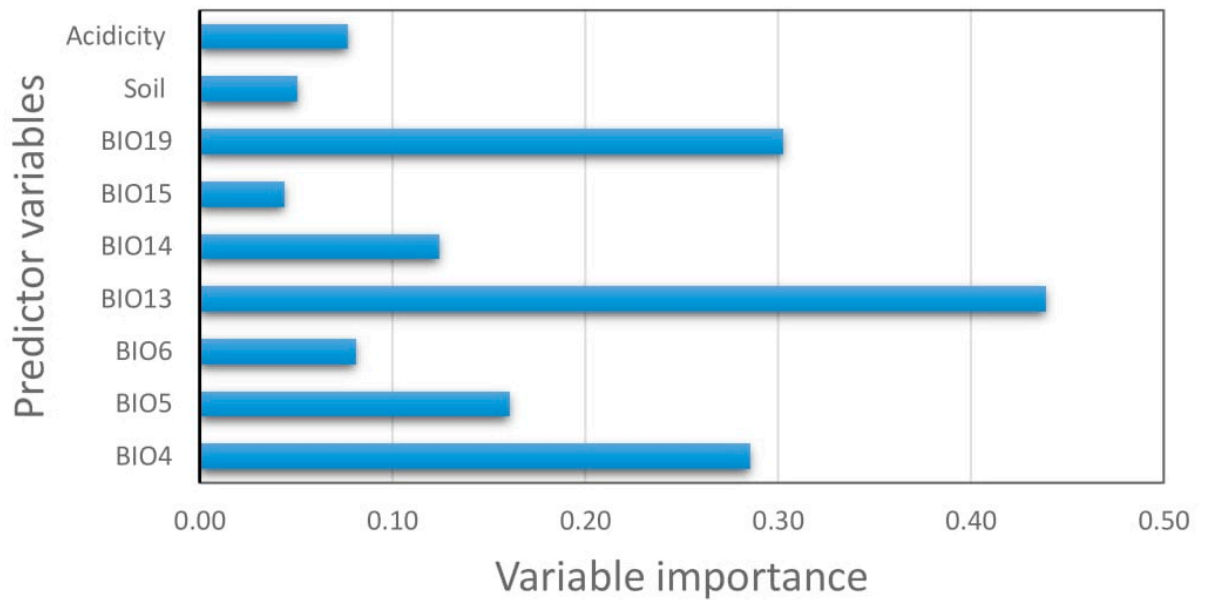


Figure S3. Variable importance.

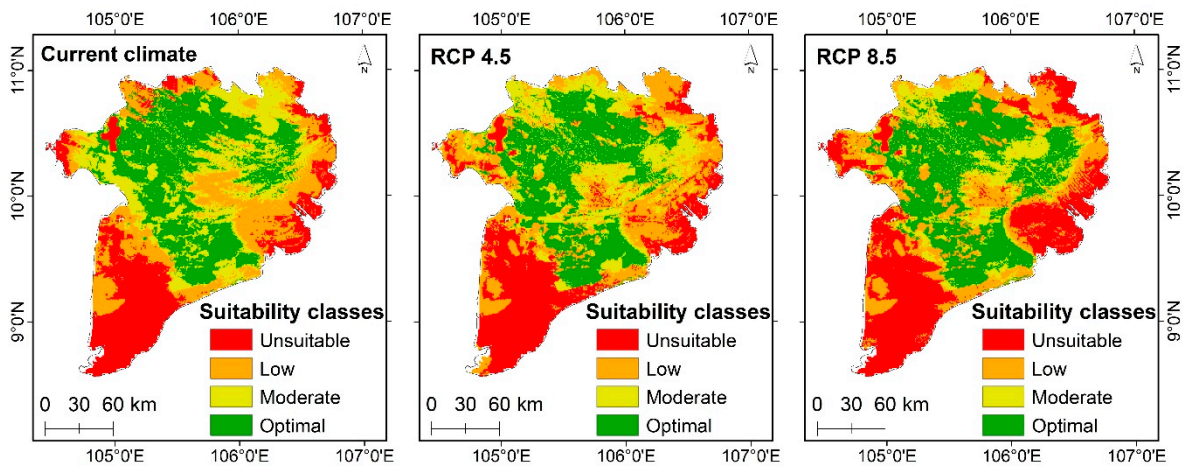


Figure S4. Potential distribution of rice under current climate and RCP 4.5 and RCP 8.5 of the year 2050.

Table S1. Predictive performance of individual models for predicting potential distribution of rice.

| Evaluation method | RF | GMB | MARS | ANN | GLM | CTA | FDA | MAXENT | SRE |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| KAPPA | 0.71 ± 0.10 | 0.69 ± 0.17 | 0.66 ± 0.05 | 0.60 ± 0.07 | 0.59 ± 0.17 | 0.56 ± 0.28 | 0.43 ± 0.10 | 0.33 ± 0.05 | 0.23 ± 0.12 |
| ROC/AUC | 0.87 ± 0.08 | 0.85 ± 0.07 | 0.82 ± 0.08 | 0.81 ± 0.08 | 0.76 ± 0.05 | 0.76 ± 0.09 | 0.82 ± 0.14 | 0.72 ± 0.02 | 0.57 ± 0.06 |
| TSS | 0.77 ± 0.07 | 0.73 ± 0.12 | 0.67 ± 0.12 | 0.65 ± 0.14 | 0.58 ± 0.04 | 0.54 ± 0.14 | 0.53 ± 0.27 | 0.44 ± 0.05 | 0.17 ± 0.09 |

Table S2. Ecological niche for the rice distribution by current (1960-1990), 2050 and 2070 under RCP 4.5 and 8.5.

| Year | Scenarios | Suitability areas (km ²) | | | | % changes from the baseline scenarios | | | |
|-------------------------|-----------|--------------------------------------|----------|------|------------|---------------------------------------|----------|-------|------------|
| | | Optimal | Moderate | Low | Unsuitable | Optimal | Moderate | Low | Unsuitable |
| Current climate 2050 | Baseline | 10,394 | 6336 | 9758 | 12,849 | | | | |
| | RCP 4.5 | 9381 | 5738 | 4612 | 19,606 | -9.7 | -9.4 | -52.7 | 52.6 |
| | RCP 8.5 | 8573 | 4243 | 3832 | 22,689 | -17.5 | -33.0 | -60.7 | 76.6 |