Corrected Equation, Table, and Figures appearing in the Supplementary Section

**Updated equation (SE8a) appearing in Text S5**

\[
\sigma_y = \left( \frac{1}{\mu - 1} \times \sum_{m=0}^{\mu} \left( Z_{m,y} - \mu_y \right)^2 \right)^{1/2}
\]

(Se8a)

**Updated Table S4**

Table S4. ISAM estimated change (%) in maize and soybean yields due to elevated [CO₂] concentration are compared with FACE site data and CLM and AgMIP model results under wet/irrigated conditions³.

<table>
<thead>
<tr>
<th>Crop</th>
<th>FACE</th>
<th>Model</th>
<th>ISAM²</th>
<th>CLM³</th>
<th>AgMIP⁷</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>-1.0⁴</td>
<td>-0.03</td>
<td>0.9</td>
<td>0.2 - 7.7</td>
<td></td>
</tr>
<tr>
<td>Soybean</td>
<td>14.4 ± 12.5⁵</td>
<td>17.5 ± 2.7⁶</td>
<td>22</td>
<td>5.2 - 44.4</td>
<td></td>
</tr>
</tbody>
</table>

¹The positive values are net sink of C by the terrestrial ecosystem
²German- FACE site
³SoyFACE site
⁴See supplementary Text S7 for ISAM simulations
⁵Calculated by the revised version of ISAM
⁶Calculated by the original version of ISAM
⁷Deryng et al. (2016) (See Text S11 for CLM and AgMIP models simulations)
Updated Figure S11b and S11c with the correct results for Nitrogen and Irrigation effects on Maize and Soybean Yields

Figure S11b. Same as Figure S12a, but the changes (%) from 1996-2005 and to 2090s under RCP4.5.
Figure S11c. Same as Figure S11a, but the changes (%) from 1996-2005 and to 2090s under RCP8.5.