

**Supplementary Table 1: Description of Model Variables**

Variable	Description
$M_{Sm}$	<i>S. mansoni</i> miracidia
$M_{Cs}$	<i>C. sukari</i> miracidia
$S_{ss}$	Susceptible sink snails
$I_{ss}$	Infected sink snails
$S_j$	Susceptible juvenile <i>Biomphalaria</i>
$S_a$	Susceptible adult <i>Biomphalaria</i>
$E_{jSm}$	Exposed juvenile <i>Biomphalaria</i> - <i>S. mansoni</i> only
$E_{aSm}$	Exposed adult <i>Biomphalaria</i> - <i>S. mansoni</i> only
$E_{jCs}$	Exposed juvenile <i>Biomphalaria</i> - <i>C. sukari</i> only
$E_{aCs}$	Exposed adult <i>Biomphalaria</i> - <i>C. sukari</i> only
$E_{jSi}$	Exposed juvenile <i>Biomphalaria</i> - Simultaneous infection
$E_{aSi}$	Exposed adult <i>Biomphalaria</i> - Simultaneous infection
$E_{jSmCs}$	Exposed juvenile <i>Biomphalaria</i> - <i>S. mansoni</i> then <i>C. sukari</i>
$E_{aSmCs}$	Exposed adult <i>Biomphalaria</i> - <i>S. mansoni</i> then <i>C. sukari</i>
$E_{jCsSm}$	Exposed juvenile <i>Biomphalaria</i> - <i>C. sukari</i> then <i>S. mansoni</i>
$E_{aCsSm}$	Exposed adult <i>Biomphalaria</i> - <i>C. sukari</i> then <i>S. mansoni</i>
$I_{jSm}$	Infected juvenile <i>Biomphalaria</i> - <i>S. mansoni</i> only
$I_{aSm}$	Infected adult <i>Biomphalaria</i> - <i>S. mansoni</i> only
$I_{jCs}$	Infected juvenile <i>Biomphalaria</i> - <i>C. sukari</i> only
$I_{aCs}$	Infected adult <i>Biomphalaria</i> - <i>C. sukari</i> only
$I_{jSi}$	Infected juvenile <i>Biomphalaria</i> - Simultaneous infection
$I_{aSi}$	Infected adult <i>Biomphalaria</i> - Simultaneous infection
$I_{jSmCs}$	Infected juvenile <i>Biomphalaria</i> - <i>S. mansoni</i> then <i>C. sukari</i>
$I_{aSmCs}$	Infected adult <i>Biomphalaria</i> - <i>S. mansoni</i> then <i>C. sukari</i>
$I_{jCsSm}$	Infected juvenile <i>Biomphalaria</i> - <i>C. sukari</i> then <i>S. mansoni</i>
$I_{aCsSm}$	Infected adult <i>Biomphalaria</i> - <i>C. sukari</i> then <i>S. mansoni</i>
$I_{cSm}$	Infected & castrated adult <i>Biomphalaria</i> - <i>S. mansoni</i> only
$I_{cCs}$	Infected & castrated adult <i>Biomphalaria</i> - <i>C. sukari</i> only
$I_{cSi}$	Infected & castrated adult <i>Biomphalaria</i> - Simultaneous infection
$I_{cSmCs}$	Infected & castrated adult <i>Biomphalaria</i> - <i>S. mansoni</i> then <i>C. sukari</i>
$I_{cCsSm}$	Infected & castrated adult <i>Biomphalaria</i> - <i>C. sukari</i> then <i>S. mansoni</i>
$N_B$	Sum of all <i>Biomphalaria</i> snail variables (Susceptible, Exposed and Infected)
$C_{Sm}$	<i>S. mansoni</i> cercariae
$C_{Cs}$	<i>C. sukari</i> cercariae