



## Supplement of

## **Operationalizing equity in multipurpose water systems**

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5 Figure S1. Density distribution comparisons of (a) J<sup>F</sup>, (b) J<sup>I</sup>, (c) J<sup>R</sup>, and (d) J<sup>E</sup> between problems F1 & F2, F1 & F3, F2 & F3, and F3 & F4. The density distribution is estimated by using kernel density estimation. Horizontal dash line refers to the median value of all solutions. The x-axis represents the comparison between various problem formulations.



10 Figure S2. Boxplot of best performance of 10 random optimization trials of F2, F3, and F3b, which refers to a new problem formulation including flood, irrigation, and environment.