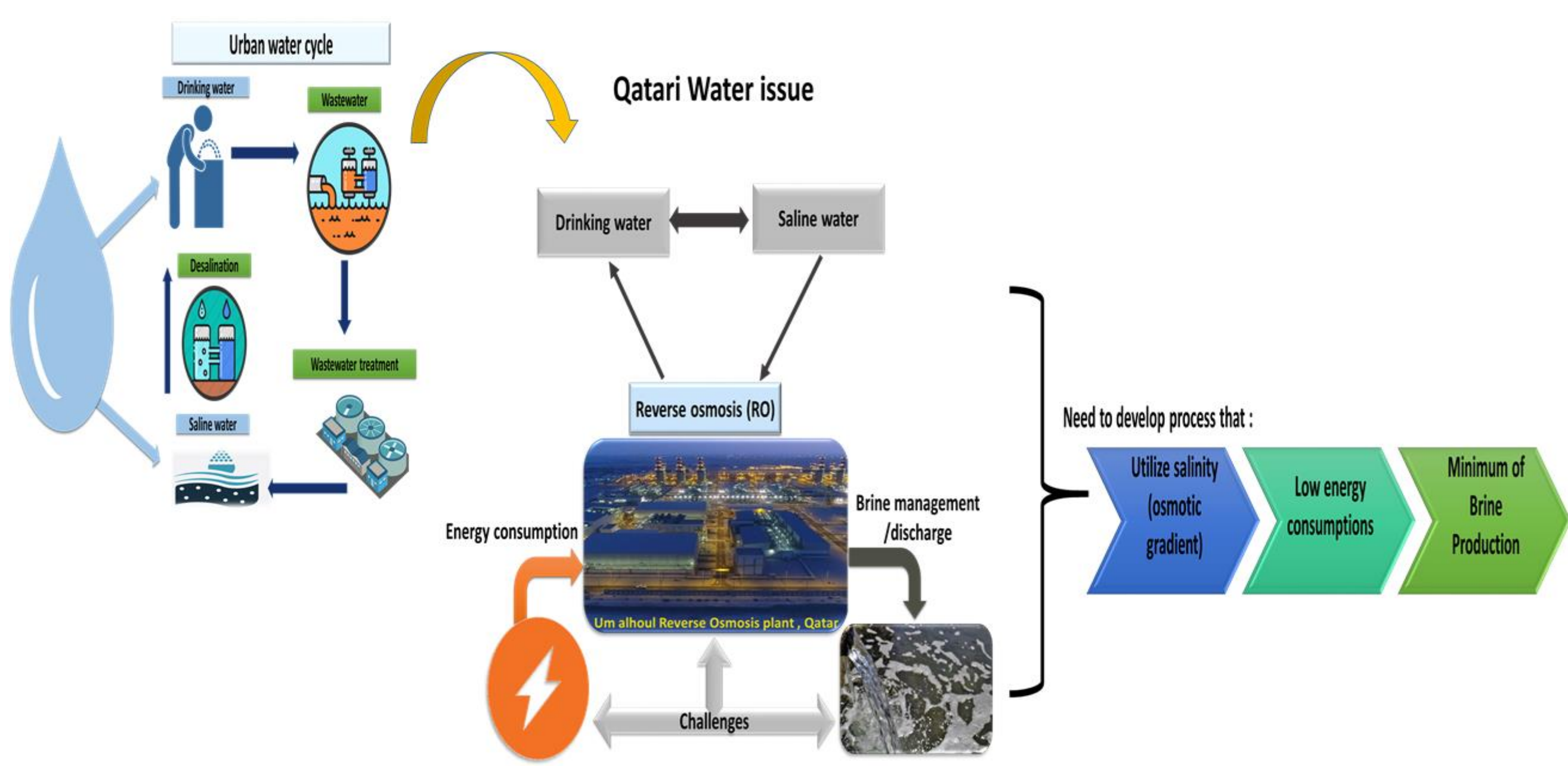


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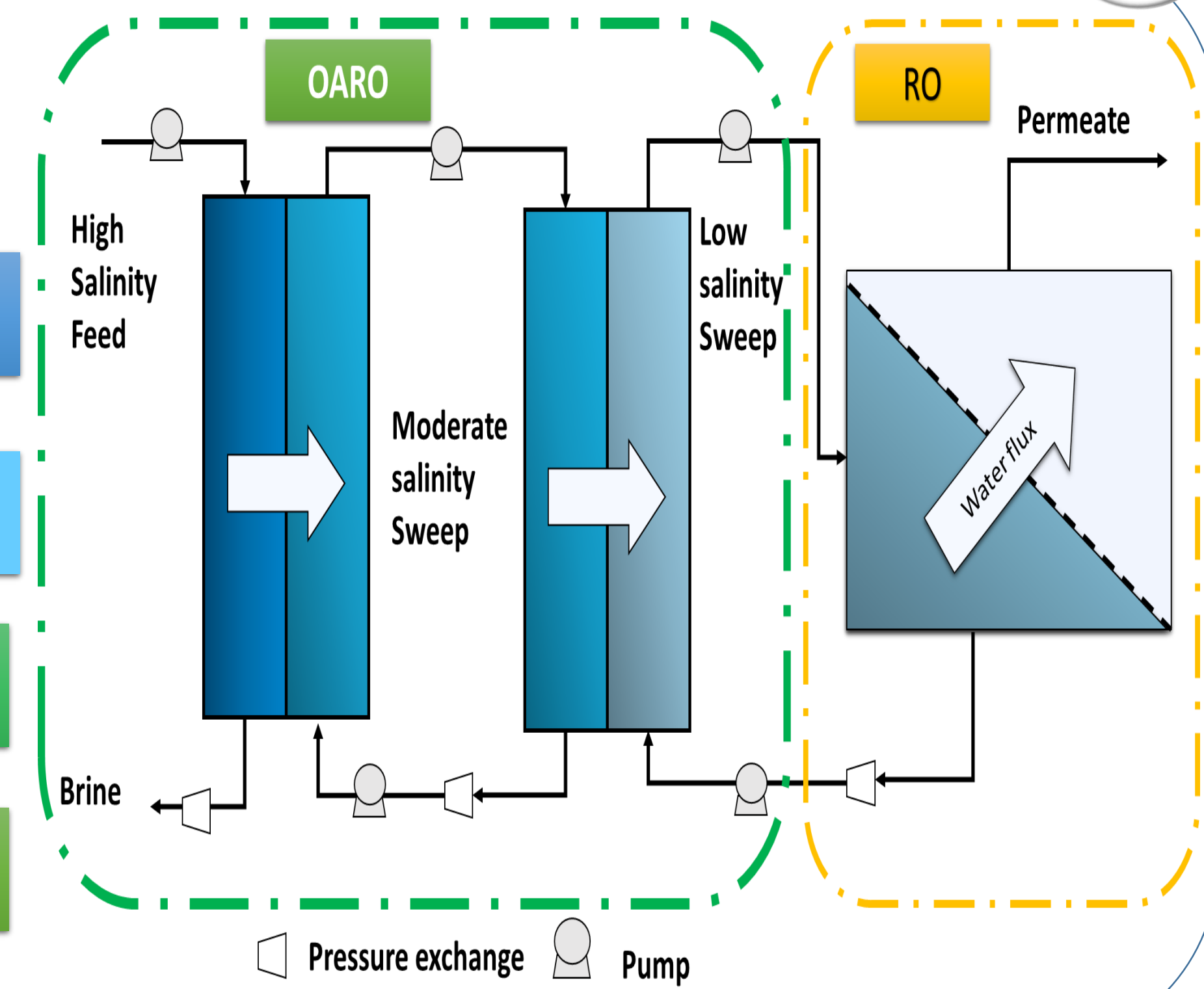
1 Problem statement and Motivation



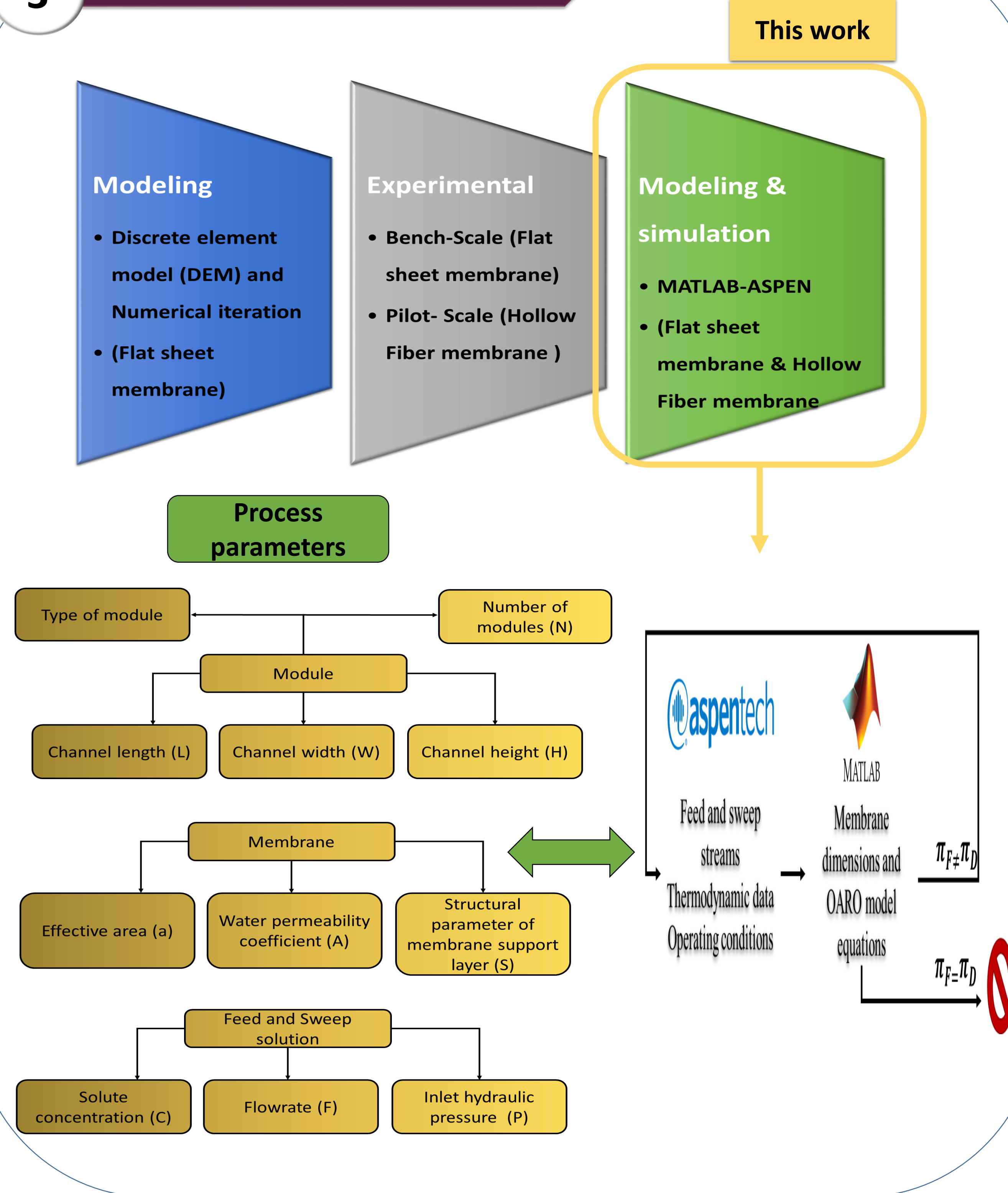
2 Background and Objectives

Osmotic assisted reverse osmosis (OARO)

- Advance membrane based technology
- Non-evaporative and energy efficient
- Generate more water flux
- minimize the volume of brine production



3 Approach



4 Results & Discussion

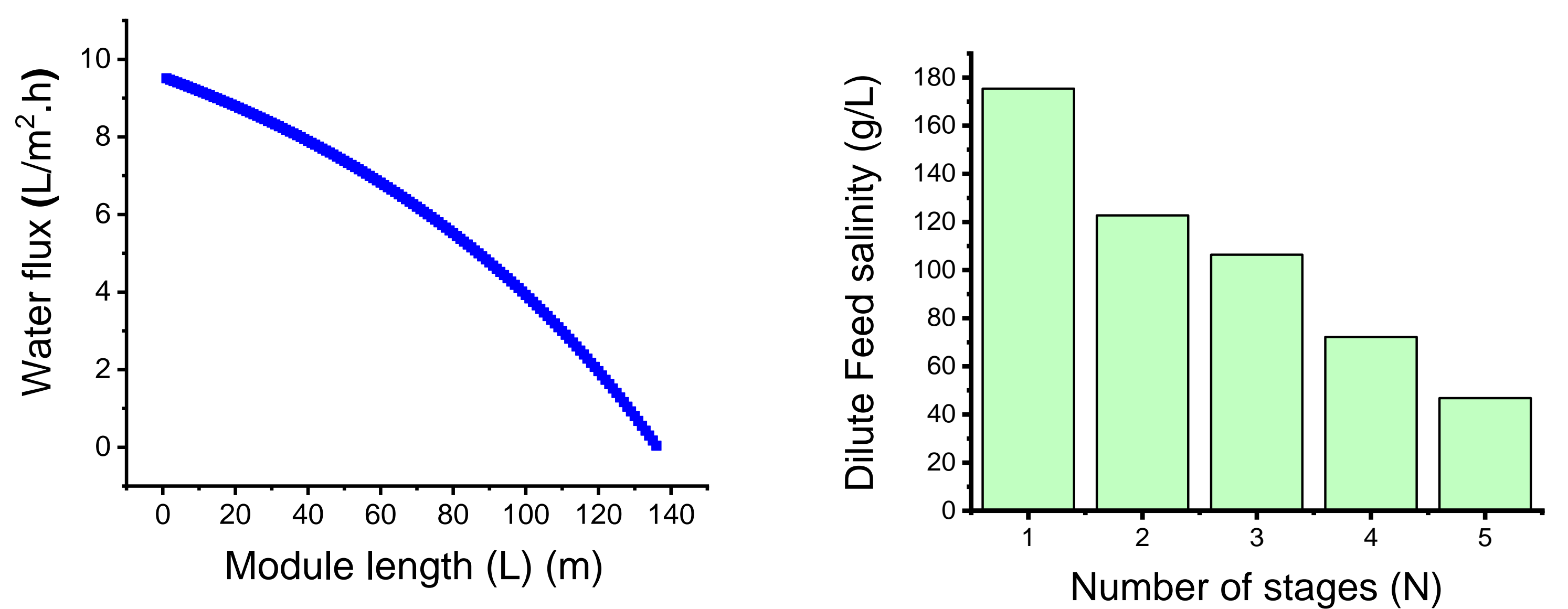


Figure 1: (a) Water flux (b) Diluted feed salinity. Feed Conc. (175 g/L), Temperature (25°C), inlet pressure (65 bar) and flowrate (0.6LPM)

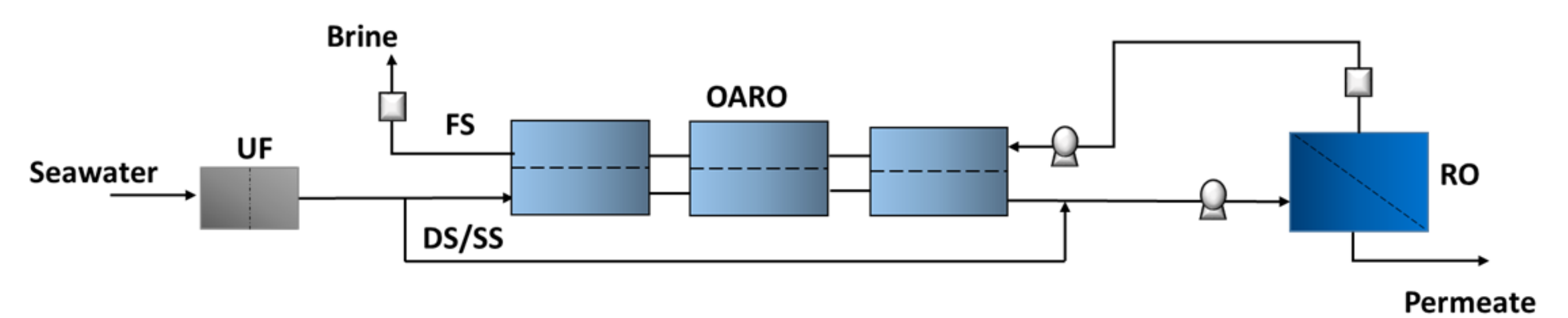


Figure 2: Adapted Configuration flow, Cascading flow. Feed solution (FS), Draw solution (DS) or Sweep solution (SS). [2]

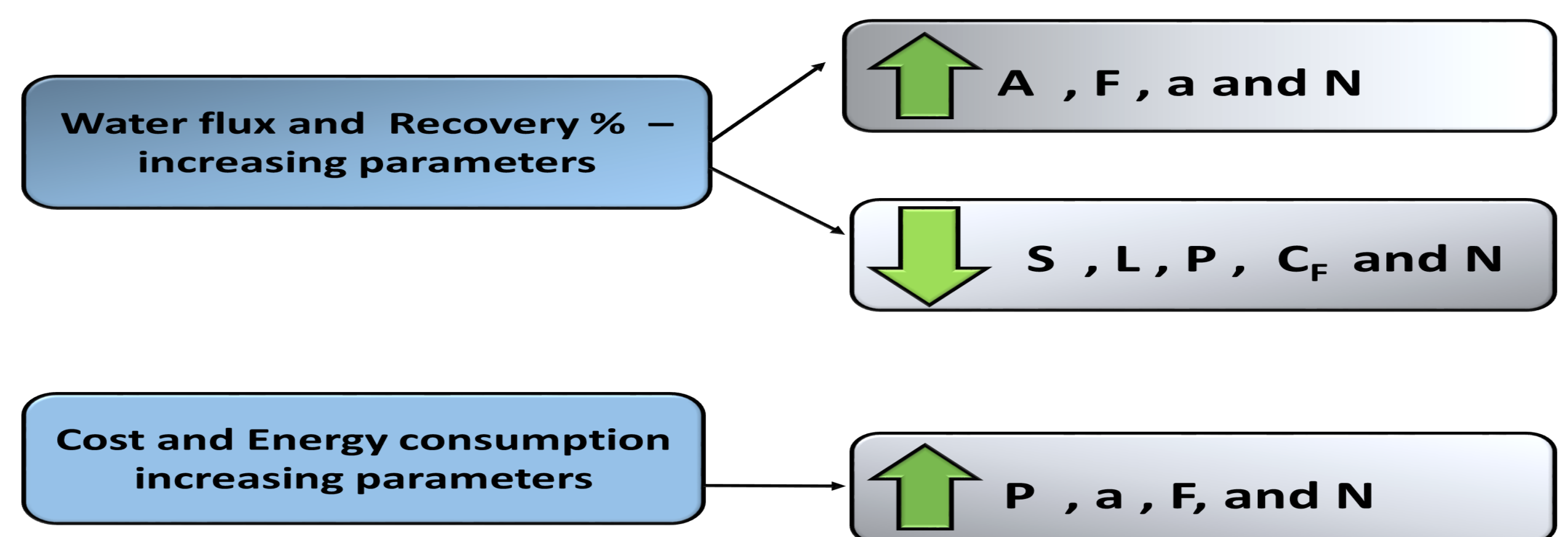


Figure 3. Effect process parameters on OARO performance

References

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Qatar notional research fund (QNRF), National Priorities Research Program (NPRP) grant number NPRP12S-0227-190166 has made this work possible, the statement made herein are solely the responsibility of the authors

5 Conclusions

- Increasing inlet Feed pressure lead to reduction of water recovery% (%WR).
- Inlet hydraulic pressure must not exceed 70 bar.
- Increasing membrane active area per module decreases %WR.
- Increasing % WR requires more number of stages and energy consumption.

6 Significant

OARO benefits Qatar :

