PhD Dissertation
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Title: Physical, Regulatory and Reputational Water Risks as Predictors of Corporate Water Stewardship

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ABSTRACT

There is growing consensus that the scope and complexity of worsening global water stress and associated physical, regulatory and reputational water risks, require a stewardship approach that involves collective action and community engagement among public and private sectors, NGOs, and communities. Corporate Water Stewardship (CWS) is emerging as a strategic approach for companies to mitigate water risks, and many global corporations are publicly disclosing their water risk and responses to initiatives such as the Carbon Disclosure Project's Investor Water Program. While the Alliance for Water Stewardship (AWS) International Water Stewardship Standard, released in 2014, provides clearly defined guidelines and a six-step process —commit, gather and understand, plan, implement, evaluate, and communicate and disclose— required for CWS, there has been little empirical research on global corporations' CWS practices and related factors.

In this research study, I examined full public responses of 327 global corporations to the 2014 CDP-IWP water survey, and using the AWS Standard as the criteria for CWS, assessed (1) what water risk type (physical regulatory and reputational) is most prevalent among global corporations, (2) How do physical, regulatory and reputational water risks relate to company characteristics, (3) what components of CWS are most prevalent among global corporations, and (4) how are the components of CWS practiced by global companies related to their physical regulatory and reputational water risks?

The results show that physical water risk was the most prevalent among companies in the study, followed by regulatory then reputational water risks. It was found that the number of facilities a company has located in river basins exposed to water risk had a positive correlation with physical and regulatory water risk though not with regulatory water risk among companies. While individual risk types were not significantly related to a company's annual company revenue, sector or the economic status of the country where the company's headquarters are located, when the aggregate of all risks were considered, significant relationships were observed.

The study results also show that participating companies engaged in CWS practices to varying degrees. Fifty-eight percent (58%) of companies pursued action in all six CWS steps, while 49% took action in four to five steps. Physical and regulatory water risk types were proven to be significant predictors of CWS and explained a significant portion of the variance in CWS among all companies. The number of facilities a company had located in river basins exposed to water risk, also proved to be a significant predictor of CWS. Annual revenue significantly predicted CWS but only for companies that pursued action in less than six CWS steps, while sector was a significant predictor among companies that pursued action in all six CWS steps. These findings provide insights into water risks recognized by corporations and how responses to those risk align to water stewardship, and can be used by policy-makers to engage corporations in collaborative and collective actions for sustainable water resources management and governance.