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Title: Aligning our human capacities with the challenges we face – Diagnostic tools and skills for improved outcomes

The rapid pace of change and the interconnectedness of our global systems are perhaps the greatest challenges facing humanities’ well-being and our planet. These challenges are fraught with disparate values, uncertainties, and tradeoffs, taxing our mental capacities. Aligning our abilities with the challenges we face requires a shift in our mental models, behaviors, and practices through formal and informal education and improved governance quality and decision making. These challenges require the development through the practice of authentic skill sets and capacities to apply critical analyses to highly complex interrelated systems for accelerated creative and implementable solutions. We need to develop the mental tools and processes necessary for humanity to recognize we are an integral part of the ecosystem and the trajectory of our future lies within us, our understanding, and our collective ability to effectively and efficiently address problems at the individual, institutional and systems level. This requires socio-psychological reflection and ‘systems thinking’ departing from many of our human traits and cultural institutions that proliferate socio-ecological failures and traps. Our research developed 70 systems thinking related capacities at the individual, institutional and decision making level that can improve governance quality. Our work has shown that populations in the United States and Africa benefit from education regarding systems thinking and the development of collaborative capacities through action that supports social learning and collective response. This work also shows that populations in the United States that move from hierarchical governance to participatory-network based governance that aligns with social learning, and authentic problem solving through the use of systems thinking actually improve their socio-ecological system outcomes. Further, the inclusion of processes and methodologies that make our current behaviors, practices and mental models visible and break down our ingrained failed processes and socio-psychological barriers to local, regional and global sustainability are overdue. Sustainable development requires broad use of formal and informal best practices that develop the capacities and skill sets to continually grow our capacities and expedite improved socio-ecological outcomes. Our evidence-based approach contributes to the literature and practice for reducing barriers to lifelong learning and sustainable development.