
Sustainable development

Michael F. Rogers, *Global Dams Practice Leader at Stantec and ICOLD Vice President*

There is no doubt in my mind that the thoughtful and sustainable development of our planet's water resources is critical to the wellbeing of the growing human population. From the earliest human efforts to harvest nature's water for drinking, farming, and generation of power, we have been forced to change natural flowing rivers and streams to secure a reliable water supply to meet the ever-increasing demands of our populations. In most developed areas of our world, the general population has lost sight and appreciation for the infrastructure needed to provide water at the tap; water to flush a toilet; and electricity at the flip of a switch. We have evolved into a utility-entitled generation that is quick to embrace the concept of environmental conservation and climate change evolution without grasping the fundamental concept that we humans impact the environment by our mere presence on this planet. We accept environmental impacts of basic human necessities to build a house, and a road to our house, and a car to drive to the store or airport, and the airplane to take us across great distances of our world. We understand these basic requirements of our

existence and accept their impacts because we can see the house and the car and the airplane. But, for our personal utility needs – water, sewer and power – this infrastructure is out of site and out of mind, thus these services are much less personal and much less appreciated.

As modern infrastructure engineers, we have inherited the responsibility to maintain the existing aging facilities of our predecessors while developing new resources to meet the ever-growing demand for reliable – water to drink, clean sanitary conditions, and electricity at the switch or outlet. We understand better than our forefathers that we must have sustainable infrastructure that respects and protects the natural environment while at the same time harvesting the natural resources of water and power. This is an exciting and challenging era because more than ever before, we understand the environmental impact of every shovel of dirt turned and every drop of water diverted from its natural river course to the faucet tap. We have unprecedented tools to predict nature – rainfall, flood and drought – on a planetary scale that can be used to optimize the harvest of

nature's resources in a sustainable manner while minimizing the irreversible impacts of the civil structures that allow capture, conveyance and distribution of those resources.

I believe that the key to this balance of harvest and protection of nature is well-informed, emotional conversation by dedicated and passionate individuals on both sides of the scale. We cannot accept development of our planet's natural resources without critical review of the impacts of that development and options for non-development. This conversation must be full of emotion and passion on both sides as the consequences to development and non-development are equally impactful to the person and the planet. We owe it to future generations of engineers and consuming populations to design safe, sustainable and conscientious changes to our natural world so that we can look those future generations in the eye knowing that the health and wellbeing of our world that provides our natural resources was as important to us as the health and wellbeing of those who consume those resources.

April 2018

WWW.WATERPOWERMAGAZINE.COM