

CITIES AS FORCES FOR GOOD IN THE ENVIRONMENT: SUSTAINABILITY IN THE WATER SECTOR

SUSTAINABILITY CONCEPTS PAPER - ABSTRACT

What was unprecedented about the final decade or so of the 20th Century was not so much the pace of change in technology — which supposedly is always “unprecedented” — but our collective willingness to question whether Man had got his relationship with the Environment “about right”. It was as though the rarity of the approach of a new millennium had evoked just as uncommon and profound a questioning, no less so for water professionals and environmental engineers than for people from all manner of other walks of life. This *Sustainability Concepts Paper* is marked by that experience. Having become used to decades of the water-based paradigm, for removing the biological residuals of the city’s metabolism and returning them to the aquatic environment, we had ceased to question what might otherwise have been — had the water closet not been so successful at some critical juncture in the competitive technological stakes of the mid-19th Century. The *Paper* takes this experience of the “great sustainability debate” of the 1990s, first to record the role of customary environmental engineering therein — almost its fall from grace by default — and, second, to set out a vision and challenge for it.

As we proceed thus into the early decades of the 21st Century:

How can the built infrastructure of the city be re-engineered to restore the natural capital and ecosystem services of the nature that inhabited the land before the city arrived there, in “geological time”?

How can this infrastructure be re-engineered to enable the city to act as a force for good, to compensate deliberately and positively for the ills of the rest of Man's interventions in Nature?

The *Paper* is about responding to such challenges: of our becoming less unsustainable in the setting of Integrated Urban Water Management (IUWM) nested within Integrated Water Resources Management (IWRM) over a watershed.

Triple Bottom Line (TBL) accounting was born of the 1990s. Sustainability will be judged the greater for those actions, decisions, policies, businesses, and technologies that embody {social legitimacy}, {economic feasibility}, and {environmental benignity} to a greater degree. In that order this *Paper* discusses the concepts and attributes of these three emboldened line items, of what it might mean to be moving forward towards sustainability in the water sector.¹ While the great sustainability debate may have been prompted by the perception of Man bumping up against the limits of Environment — a sense of poor performance in respect of {environmental benignity} — the *Paper* acknowledges the labyrinthine complexity of {social legitimacy} as *primus inter pares*, first among the equals of the three bottom lines. {Economic feasibility} enfolds the grandest of socio-economic programs as much as the bluntest of practical, visceral, necessities of life. Given the myriad elemental notions comprising {social legitimacy} and {economic feasibility}, the *Paper* relates {environmental benignity} as a succession of steps in engineering a platform on which to proceed to meet the foregoing challenges and embrace their vision — indeed, to change it as time passes.

On this account, it turns out that the old — and now much denigrated — water-based paradigm with its infrastructure of “end-of-pipe treatment” may not be quite as comprehensively “broken” and in need of wholesale “fixing” as we might once have been persuaded. Yet the argument of this *Concepts Paper* is surely no

¹ And they are sufficiently important to the organizational structure of this Concepts Paper to merit the distinction of their enclosure in parentheses {...}.

advocacy of the comfort of maintaining the *status quo*. Adaptive management is almost as popular a catch-phrase as is sustainability itself. And so it should be, when understood and enacted as originally intended: through policies designed expressly to steer and probe the system at one and the same time, deliberately to reduce uncertainties, if not vagueness, and to promote learning. Yet something more, somewhat beyond adaptive management, is needed. As if to jolt and jar us out of our comfort zone, the *Paper* discusses a search for clumsiness — neither elegance nor necessarily efficiency — in the institutional structures of governance that will be enabling (or disabling) of progress towards less unsustainability of IUWM within IWRM. We venture to label this a kind of “adaptive community learning”, something in which the maxim of “Always Learning; Never Getting It Right” is deeply ingrained. Sustainability will be no more ever hereafter “right” than will the next grand idea to subsume it — or sweep it entirely away.

For all of this being a *Concepts Paper*, its closure is about stepping out in the harsh world of *practice*, thereby determinedly to re-fashion the TBL as we account for it today (*TBL_{now}*) into how we currently imagine it might be gauged generations hence (as *TBL_{future}*).

A *Concepts Paper* cannot be left without a parting thought, however. It is this: if we were to be supremely successful in sustaining IUWM within IWRM, we might then be left but to contemplate IUNutrientM within INutrientRM. This *Concepts Paper* bears the sub-title “Sustainability in the Water Sector”. Yet re-engineering the city so that it may become a force for good in the environment defies such familiar compartmentalization. An intervention in the water sector has ramifications for the energy sector, the food sector, the waste-handling sector — and *vice versa* — and so on, and on (endlessly).