California State Water Project Irrigation Canal: Do We Want More Cement?

All of us (except Republicans and adherents of Movement Conservatism) know that climate change is dangerous for rising temperatures, but also because of its effects on other natural resources. Most significantly, it is hardly news that increasing and variable temperatures will reduce, for example, the Sierra snow pack and cause greater evaporation, eventually leading to more severe water shortages. One logical implication of this trend is to redouble efforts at water conservation.

But thinking through it just a little means that things get complicated.

Consider irrigation canals. Huge amounts of water are lost when these canals are not lined, i.e. that they remain as dirt. Water percolates through the soil, losing at least part of it for human use and creating new wildlife (such as tamarisk) that might disrupt the local ecosystem. So of course we should press for lining irrigation canals, right?

Not so fast. Lining an irrigation canal requires a tremendous amount of energy, so you might wind up saving water but increasing emissions. Furthermore, what do you line a canal with? Cement, an industry that just spews carbon into the air, so much so that it accounts for 5% of emissions globally. So in the effort to conserve water in order to *adapt* to climate change, you might wind up making climate change worse.

It isn't clear to me how one would do a life-cycle analysis of all this, because it really deals with incommensurables: mitigation versus adaptation. I suppose you could put together a model that: 1) figures out the marginal impact of increased emissions, versus: 2) the marginal impact of the resource loss. And perhaps since emissions globally are so large any increase will not really be meaningful, but the resource loss will be. But I don't know whether that is true. In any event, someone ought to figure it out. "Cure worse than the disease" is a nice expression, but it makes for lousy public policy.