FOOD: LEFT OFF THE NEXUS MENU

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Governments, academia and international development organisations are looking to the food-water-energy nexus to reduce inefficiency and meet growing resource demands. Cooperative management of the three sectors is thought to mitigate resource use inefficiencies, sectoral wastage and reduce competition between them.[i] However, pollution, climate change, wastage, mismanagement and trade-offs between sectors threaten the availability of these resources for future generations. For example, the Asian Development Bank (ADB) estimates that up to 35 percent of current water use in the Asia-Pacific region could be more efficient. Similarly the ADB notes that, within the region, significant amounts of energy are lost through aging or inappropriate infrastructure.[ii] In response, some actions are being taken to address wastage associated with both water and energy sectors, particularly in the Asia-Pacific region. ADB projects provide good examples of this: irrigation practices are being improved in Indonesia,[iii] dams are being renovated to increase efficiency in Papua New Guinea,[iv] and energy distribution infrastructure is being replaced at the national and household scale in the Philippines.[v] Despite attempts to combat inefficiency within the food, water and energy sectors, there remains huge wastage within food production and distribution systems, the output of which is a direct result of water and energy inputs. It is exactly the sort of area nexus management could be focussing on. While efficiencies are being sought in other parts of the nexus, efficiencies to be gained in the food sector by reducing wastage, continue to be overlooked.[vi]

Estimates from research studies suggest that, at a global scale, anywhere from one third to one half of all food produced for human consumption is wasted.[vii] Waste associated with water and energy inputs into food has evaded the critical eye of 'nexus oriented' academics. This is despite their enthusiasm for managing each of the food, water and energy sectors cooperatively, and food being a direct output of this convergence. Such wastage occurs on many levels. Food products are lost at the site of production due to mechanical damage or spillage. In other cases, food is purposefully wasted as consumer demand places aesthetic requirements on what is sellable (for example, misshapen fruit is thrown out immediately after harvest despite having nutritional value).[viii] In the developing world, a large amount of food is wasted as it is damaged in transit.[ix] Food is wasted in supermarkets as goods are not stored correctly, mistreated, or simply the over-supply of produce means that it is thrown out.[x] And of course, large amounts of food are wasted at the point of consumption.

Food wastage is a complicated matter crossing many scales. If inefficiencies in the food-water-energy nexus are to be reduced, food wastage cannot be ignored particularly considering its demands on water and energy. This is especially pertinent given the challenges of feeding upwards of 9 billion people by 2050. The challenges of addressing such problems are not sufficient to prevent corrective actions to reduce the large amounts of food wastage. It does not make financial, political or environmental sense to allow such a blind spot to exist in nexus oriented management practices. Continuing along our current path of wasting large amounts of food, means we will not only be failing to feed people but we will be actively depriving them as we know inefficiencies exist and we refuse to address them. In fact we are doing this already. Nexus thinking and its supporters can no longer put food wastage in the 'too hard basket'.

[i] Asian Development Bank. 2013. Thinking about Water Differently, Managing the Food-Water-Energy-nexus. Manila
[ii] ADB and APEC, 2013, Energy Outlook- for Asia and the Pacific
[iii] For two recent examples see: http://www.adb.org/projects/43220-012/main and http://www.adb.org/projects/46233-001/main
[iv] See: http://www.adb.org/projects/41504-023/main
[v] For two recent examples see: http://www.adb.org/projects/43207-012/main and http://www.adb.org/projects/42001-013/main
[vi] Not completely. There is much research going on in the agricultural sector trying to extract bigger harvests from land, more nutrients, and use less fertiliser. But all these advances in technology will be for nothing if we don't reduce the percentage of food that is wasted.
[vii] http://www.futuredirections.org.au/publications/food-and-water-crises/315-on-overview-of-global-food-losses-and-waste.html and Lundqvist, J., C. de Fraiture and D. Molden. Saving Water: From Field to Fork – Curbing Losses and Wastage in the Food Chain. SIWI Policy Brief. SIWI, 2008.
[viii] FAO, 2011,
[ix] As above
[x] As above