

Sustainable Intensification is Not Enough

by Ralph C. Martin

It is common to hear that better efficiency or more intensification with resources will help us reduce the burden on Mother Earth,

A common way to improve fuel efficiency is to encourage more people to drive small cars that use only 6 L of gas for each 100 kilometres, rather than using 12 L for the same distance in a pick-up truck. However, if you persuade me to do that and then I drive twice as many kilometres per year in my small car, as I drove with my pick-up, the environment experiences the same overall impact.

We know that fossil fuel use and greenhouse gas emissions should be reduced. However, we won't get there by only intensifying fuel use in each vehicle. It helps, but keeping our eyes on total oil use and total GHG emissions is more indicative of increasing or decreasing overall harm. It is also necessary to reduce trips by driving far less, with more people in each vehicle.

Despite various efforts to improve efficiency or intensification we are now burning 98 million barrels of oil per day across the globe. About a decade ago it was 85 million barrels of oil per day. Global oil consumption is still rising despite intensification efforts.

According to Environment and Climate Change Canada (www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html), GHG emissions in Canada peaked in 2007, at 734 megatonnes (Mt) of carbon dioxide equivalent (CO₂ eq) and rapidly declined to 682 Mt CO₂ eq in 2009, not seen since 1996. Recessions can have benefits. Since 2012, Canada has been above 700 Mt CO₂ eq every year. Overall GHG emissions are stubbornly persistent in our fair land.

Many farms optimize food commodity output per dollar input by finding ways to produce many kilograms so that each unit of cost is efficient. For example, the cost of a large tractor and equipment to seed and harvest corn and soybean fields will be more efficient when more kilograms of corn and soybean are produced with the same equipment. Furthermore, the efficiency of kilograms of crop product per person days will be very efficient if only one operator can cover many hectares in one day.

The Field to Market report (2012) trumpets the steady decline of resource use, over three decades, required to grow one bushel of corn, in the USA. These included less land, less soil erosion, less irrigation water, less energy and fewer greenhouse gases emitted. However, the question remains, ‘how did the environment experience the impact of these resources from 1980 to 2011?’ The average resource requirement per bushel was about 40% less. The even better news was soil erosion, which decreased by 60% per bushel of corn. However, in this period, average USA corn yields increased from about 100 bushels per acre to 150 bushels per acre, a 50% increase, given continual crop genetic and management improvements. These average yields are now north of 170 bushels per acre. Thus, the environment as a whole was impacted more severely by the net effect of the use of more land, more irrigation water, more energy and more greenhouse gas emissions.

Sustainable intensification is usually advocated in the context of accepting that with more people and more prosperity there will of course be more consumption and thus more production.

“Sustainable intensification looks at whole landscapes, territories and ecosystems to optimize resource utilization and management. Farmers must produce more from the same area of land and use fewer inputs while producing greater yields. Such a transition is both possible and necessary” (FAO, 2018, <http://www.fao.org/policy-support/policy-themes/sustainable-intensification-agriculture/en/>).

Is this transition really possible? Is it really necessary? If the patterns of yields and resource use continue, then the transition will still lead to more negative overall environmental impacts. If people continue to consume as much as we do now and if we continue to waste over one-third of available global food then yes, it will be necessary. However, it is not axiomatic for us to forge ahead with careless consumption.

Two-thirds of health-care costs in Canada can now be attributed to chronic diseases associated with unhealthy eating, according to the Canadian Agri-food Policy Institute (http://capi-icpa.ca/pdfs/BuildingConvergence_Aug2009.pdf) . High consumption per person, which causes more sick people than lack of food, must come down.

Wasted food is about 40% of all available food in Canada. In addition to sustainable intensification, the challenge is to consume and waste less food, thereby reducing the need to produce as much as we do now.

Gambling Earth's ecological health on sustainable intensification alone will fail. I am an aggie and respect what has been achieved. Nevertheless, as a society we are obliged to go further and explore other approaches too.

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