

EIA: A Tool for Global Food Security?

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Dear Reader, if you had to (re)design environmental impact assessment (EIA) as a tool for global food security, what, if anything, would you do differently? Imagine, if you will, an assignment from the Government of Utopia to do just that: to develop EIA legislation that would encourage sustainable development while at the same time would ensure food security for future generations. Assume, for this assignment, that “food security” is achieved “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 1996).

Possible responses vary; one might be that food security is too complex or that EIA is not an appropriate vehicle or forum. Another might be that food security is already implicitly addressed within the existing EIA framework that considers the individual elements of soil, water, air, etc. Or, the question might prompt your reconsideration of EIA and its possible role to effect sustainable food security.

Food security is indeed complex and multi-dimensional; as defined, it encompasses food availability, access, and use¹. Clearly, this involves sectors beyond agriculture (which, under the FAO definition includes forestry and fisheries) to encompass others, such as health, education, transport and trade policy. Even limiting the scope of the question to the agricultural sector, one is reminded that this sector has “long been threatened by economic stressors (such as shifts in trade, urban migration, etc.) and chronic environmental degradation from natural causes and from poor agricultural practice and technologies which lead to resource depletion. The root causes of stress on the system include both economic and natural environmental elements” (Duffy, 1998).

Complex questions need simplification. One approach might be to categorize prospective projects according to the type of potential impact on food security. One category might comprise government policies and programs with direct or indirect consequences (*e.g.*, agricultural subsidies that create

¹ Some definitions use 3 pillars: “Availability:” sufficient quantities of food available on a consistent basis; “Access:” physical and economic access; “Use:” appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation. Other definitions are based on the 5 “A”s: Availability, Access, “Adequacy:” food that is nutritious and safe, and produced in environmentally sustainable ways; and “Acceptability:” access to culturally acceptable food, which is produced and obtained in ways that do not compromise people’s dignity, self-respect or human rights; “Agency:” the policies and processes that enable the achievement of food security.

distorted market signals, result in over-supply and international dumping and, consequently, lead to depressed local prices, rural-urban migration and changed food systems patterns). For present purposes, that category will be considered primarily as necessitating trade impact assessment. A second category might comprise agricultural development projects, for example, where new lands may be brought into production. The FAO has recently introduced guidelines to ensure that new and future production is consistent with principles of sustainability and with the FAO Strategic Framework, thus “firm(ly) anchoring in corporate policy the tenets of sustainability and environmental protection” (Tschirley & Duffy, 2012). As several multilateral lenders (*e.g.*, World Bank) require EIA of proposed development projects and some national governments have similar requirements (*e.g.*, *Canadian Environmental Assessment Act*[CEAA], 2012, s. 67), for present purposes, concerns over this second category will be considered as having been addressed. This may be an appropriate point at which to acknowledge the duality of agriculture; it is both an activity with impact on the environment (probably the single most human activity with the greatest impact) and is also impacted upon by the environment.

Following the logic of this approach, the third category would comprise projects where agricultural land is being contemplated for uses other than food production. The remainder of the paper will focus on this category, which includes both the individual project, such as a site or a linear development (*e.g.*, pipeline or transmission line) and multiple, smaller projects.

Another response to the question put might be that EIA is not an appropriate forum; however, it should be noted that the purpose of EIA is to encourage actions that promote sustainable development. In the agriculture, (and forestry and fisheries sectors) this is defined as development that “conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable” (FAO, 1989). Clearly, assessments of this nature have relevance for food security.

Moreover, consider the irony that while EIA grows in importance, so do concerns over global food security. The earth’s population is estimated to grow from about 7 billion today to about 9 billion in 2050 (based on the medium variant), which represents an increase of almost 30% (UN, 2012). This population increase is expected to require an increase in food production of about one half.² This may

² Figures vary, ranging between 50 to 70% depending on source. This is due to a larger population accompanied by changes in diet, as more people shift to a meat-based diet; urbanization (see below) is usually accompanied by a shift towards more convenient (which are often meat-based) foods. It is beyond this discussion paper to provide specifics; it is widely recognized that large portions of the world’s cereals and soya is used for animal feed; that soy-derived feed may be produced on, or indirectly contribute to expansion on to, cleared rainforest land; that depending on methods of livestock husbandry, production of a pound of meat protein uses many times over the amount of water and land necessary to produce an equivalent amount of vegetable protein. The year 2008 marked the first time in human history that more persons

be a challenging target to meet, given that increased yields based on conventional agricultural practices are largely dependent on non-renewable (fossil-fuel based) inputs and that arable lands are under continuous threat. Agricultural production can only be achieved in one of two ways: greater efficiency, which, setting aside expected efficiency gains from bio-engineering and improvements in technology, requires an increased use of inputs (whether these are non-renewables or organics); or an expanded land use base. Both of these have environmental impacts. Clearly, EIA would be, *prima facie*, an appropriate forum in which to consider food security.

Another response to the question put might be as follows: given that within an EIA the individual elements (*e.g.*, soil, water, vegetation, wildlife) are already assessed, food security is already (implicitly) considered. The same could be said for human health, which is also dependent upon a variety of individual elements (*e.g.*, air, water) and also highly complex, involving environmental, economic and social factors. And yet, human health is increasingly being expressly included as a required consideration within EIA (*e.g.*, Canada's *National Energy Board Filing Manual*³). Are food security considerations implicit in "environmental" or "human health" assessments – or both? Perhaps making any such consideration explicit provides contextual relevance to data dependent determinations of specific, individualized elements.

Dear Reader, perhaps by now you have been inspired to consider how well EIA is addressing food security considerations. Consider that the right to food to a basic human right; it is not the right to be fed, but rather, the right to feed oneself.⁴ The right to food, therefore, requires states to provide an enabling environment in which people can use their full potential to produce or procure adequate food

were living in urban settlements than rural areas; by 2030, the number of urbanites will swell to almost 5 billion, with urban growth concentrated in Africa and Asia. One billion people are now living in urban informal settlements and poverty is growing faster in urban than in rural areas. Urbanization frequently displaces the peri-urban agricultural lands that were once supplying these cities with food.

³ Under *CEEA, 2012*, s. 4(2) [The federal government] must exercise [its] powers *in a manner that protects the environment and human health* and applies the precautionary principle. In Section 5, among the environmental effects that are to be taken into account are, with respect to aboriginal peoples, an effect...of any change that may be caused to the environment on (i) health and socio-economic conditions. In Canada, the National Energy Board (NEB) is the authority responsible for conducting environmental assessments for designated projects that include activities regulated under the *NEB Act*. The *NEB Filing Manual* provides guidelines for these assessments. Table A-2 outlines Filing Requirements for Biophysical Elements; for example, for soil and soil productivity, the *requirements* include: "1. Describe general soil characteristics and the current level of disturbance associated with soils." The Table also includes *guidance*, for example, "Soil profile descriptions for dominant soil types must consider: soil horizons; thickness of horizons; [etc.]" The guidance also specifies, "*Where there is a potential for human health effects*, see Table A-3 [Filing Requirements for Socio-Economic Elements]" (*emphasis added*). We see a similar approach for water, air quality, fish and fish habitat, acoustic environment. Table A-3 specifies in the guidance, for example, under Human Occupancy and Resource Use, that the assessment of potential impacts on human occupancy and resource use must evaluate: agricultural areas (including specialty crops, orchards and vineyards); health and productivity of livestock; water supply sources or intakes for agricultural (and other) users; (among others). Although it would seem self-evident that if there is an adverse effect on water, this would have a potentially adverse effect on human health, implementers have seen it necessary to provide guidance that any such connection ought to be made explicit and be assessed.

⁴ *1948 Universal Declaration of Human Rights* (Art. 25) as part of the right to an adequate standard of living; *1966 International Covenant on Economic, Social and Cultural Rights* (Art. 11); General Comment No. 12 – non-binding interpretation; 1999.

for themselves and their families (De Shutter, 2011.) How well are governments doing? Let's continue with the Canadian example.

Because Canada is a federated system, its legislative governance is complex. There is no reference to "protection of environment" in Canada's Constitution and control over natural resources lies with the provinces, with some exceptions (seacoast and inland fisheries). Consequently, Canada has an array of EIA schema across the country. *CEAA, 2012*, is a complex piece of legislation; even the process of determining its applicability is complex. The government's stated intent in recent reform efforts was to simplify and delineate its application to "major projects" that fall within federal jurisdiction. In addition, each province has its own governing legislation, which varies in terms of when EIA is required. Unlike Ontario, which has enacted specific EIA legislation, in Alberta, the EIA requirements are outlined in the *Environmental Protection and Enhancement Act*. Its schedule of activities that likely require EIA are also primarily "large scale" activities. Thus, since EIA is legislatively required for large scale projects at the federal and the provincial levels, it could be surmised that for such projects, any potential conversion of agricultural land use would come under review⁵.

What about smaller projects? The cumulative effect of a number of smaller, incremental activities can be just as "significant" and perhaps more so, than those of a single, major project. Nowhere is this more obvious than the "nibbling effect" of urban sprawl on agricultural lands in peri-urban areas. In the province of Alberta, for example, municipalities are governed by the *Municipal Government Act*, which does require that municipalities of a certain size must prepare a Municipal Development Plan; although municipalities are encouraged to address environmental issues, neither this act, nor any other, imposes any requirements for EIA. Pursuant to the federal *Agricultural and Rural Development Act*, there has been established an inventory of arable lands, the Canada Land Inventory, which assigns capability for agricultural purposes. Generally speaking, land use policies and municipal bylaws tend to reflect that "better" agricultural land be retained for uses related to agricultural production. As is the case in many jurisdictions, land use planning in Alberta is subject to various pieces of legislation and at different levels of governance. The goal here is not to outline those complexities, but to question, in the absence of specific legislated requirements, whether and to what extent EIA would be conducted in land use planning decisions. Of course, EIA is not the only tool available to preserve agricultural lands. For

⁵ In the case of a proposed site development, presumably the EIA process would preclude selection of prime agricultural land; in the case of linear developments, it is not as clear.

example, the *Alberta Land Stewardship Act* has as its goal “a system for the conservation of private lands having environmental, natural ... or agricultural values...” and transfers from the municipalities to the provincial cabinet the power to make over-riding land use decisions.

Presumably these or similar complexities around land use planning also arise in other jurisdictions, as planning decisions frequently take place at different levels of governance. Part of this may be “since those most knowledgeable about local conditions are the persons working and residing in the community, it makes sense that much of the planning and regulation should occur at the local level” (Laux, 2002). However, this can result in a lack of cohesiveness and difficulty in achieving broader goals. This should prompt the question of where (and how) EIA is currently used within the system of land use planning and whether it should be given a more predominant role, rather than be limited to major projects. It is a noteworthy reminder that EIA is not intended to prevent development or changes in land use; instead, it is to enable authorities to make decisions about such matters with full understanding and acceptance of the consequences. Decisions that potentially affect food security, then, are ones where such clarity should be paramount.

This should be the case not only for domestic projects, but also those carried out in other states. As was noted above, international lenders typically include requirements for the conduct of EIA in such cases, as does Canadian legislation. Moreover, as recently confirmed by the International Court of Justice, EIA should be conducted “where there is a risk that a proposed industrial activity may have a significant adverse impact in a transboundary context” (*Argentina v. Uruguay*, 2010). Although that case involved industrial activity, the principles would be applicable to a broader set of activities. For example, one could foresee that proposed activity within one state could have significant adverse impacts on the natural resources essential to the food security of another state. States do have an obligation to protect the right to food, which includes actions to prevent others from destroying sources of food, by pollution of land, water or air. This imposes obligations of the state to persons within its own territory but also extends to the populations of other states (UN Special Rapporteur, 2013). These obligations, to protect the right to food and to conduct EIAs in certain transboundary contexts, imply interesting consequences.

As EIA has matured as a practice, there has been a shift in its perceived function from “pollution control” and technocratic practice in favour of a more general reformist environmental approach (Holden & McGillivray, 2007). In the coming years, it is hoped that EIA might be retooled as a (better) vehicle to encourage sustainable development while ensuring food security for future generations.

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