

The food system and climate change – workers’ struggles as a lever for combating rising temperatures and securing livelihoods



The devastating effects of climate change are already with us: extreme storms, droughts and rainfall; shifting vegetation patterns and soil erosion; accelerating loss of biodiversity; and climate-driven migration. Temperature change of one degree Celsius attributable to human activity has been sufficient to melt 80% of Arctic ice since 1980. Limiting the global increase to 4 degrees – an increase which would cause immeasurable damage - would require massive efforts which are nowhere in sight.

Global temperatures are currently increasing 50 times faster than at any time in the human history of the last 11,000 years. Once set in motion, global warming feeds on itself, by limiting natural absorption of greenhouse gasses and releasing stores of methane and carbon dioxide. Climate change experts now speak of an expected increase of 5-6 degrees Celsius.

As the climate becomes more volatile and more precarious, so does food production, and with it livelihoods and work. Agricultural employment is immediately and directly impacted by the rising incidence of tropical storms, advancing soil erosion and desertification and floods. Reduced yields due to rising temperatures – already evident in certain areas of tea cultivation, for example – can have a devastating impact on the wages of agricultural workers already living on the physical margin.

The role of agriculture

The role of the food system in contributing to global warming has not been sufficiently emphasized or appreciated. Agriculture is becoming increasingly precarious as a direct consequence of the dominant production model, a model which is the driving force in pushing up global temperatures. While until recently much of the discussion on food and global warming focused on transport (“food miles”), the food system’s largest contribution to GHG production occurs *before* food leaves the farm gate.

According to the 2006 Stern Review on the Economics of Climate Change, agriculture and land use (principally agriculture and forestry) jointly account for 32 per cent of GHG emissions – greater by far than any other single industry or sector (the Stern Review puts industry and transport at 14 percent each – and products for agriculture like fertilizers and pesticides fall under industry in this report). Other studies show similar results. *Factor in processing, transport, packaging, waste etc. and the food system is responsible from 40 to as much as 57 percent of all GHG.*

The root of the problem: intensive monoculture

The force driving GHG emissions in agriculture is the expansion and intensification of high input, export-driven, fossil fuel-intensive monoculture production which externalizes costs, including the cost of climate change. Most of the deforestation which accounts for 18% of GHG emissions is linked to monoculture expansion, of which the expanded cultivation of soya in the Amazon basin is but the best-known example.

In addition to high levels of greenhouse gasses, this method of production accelerates the already rapid loss of biodiversity, which is the foundation of life and of food. It promotes the destruction of soil organic matter, leading to topsoil erosion, flooding and the exhaustion of ground water supplies. The more intensive monoculture expands, the greater is the food

system's vulnerability to climatic and biological shocks. These shocks have their greatest impact on the poor and the hungry – over half of whom are food producers.

According to the Stern Review (*Annex 7.g Emissions from the agriculture sector*), “Fertilisers are the largest single source (38%) of emissions from agriculture. Agricultural emissions are expected to rise almost 30% in the period to 2020...Around half of the projected growth in emissions is expected to come from the use of fertiliser on agricultural soils.” Nitrous oxide is 296 times more potent a GHG than carbon dioxide.

Runoff from nitrogen fertilizers is one of the driving forces of the algae-promoting eutrophication which depletes water of oxygen and kills plant and animal species in fresh waters and coastal areas. Water death in turn contributes to global warming.

GM technology: a false solution

Pesticide manufacture alone accounts for up to 16% of the energy input into arable crops. As agrochemicals become more complex and more toxic in response to diminishing returns, the energy input in their production rises.

Claims that genetic modification (GM) technologies will lead to reduced agrochemical use are simply false. Increased cultivation of GM corn, soybean, and cotton crops patented for their ‘pesticide/herbicide resistant’ properties (like Monsanto’s Roundup Ready soy and Bt corn) has *increased* the use of herbicides and pesticides in absolute terms and per unit of land. An authoritative study published last year by Charles Benbrook, a research professor at the Center for Sustaining Agriculture and Natural Resources at Washington State University, showed that the rise of herbicide-resistant ‘superweeds’ was driving up herbicide applications by 25% annually in the United States. Insecticide applications are also on the rise as GM plants developed to be toxic to insects are accelerating the development of new species resistant to the patent-protected toxins.

Not only have various formulations of the agrochemicals like Monsanto’s glyphosate become more toxic in response to diminishing returns. There has been a gradual substitution of more GHG-emitting chemicals for lesser ones. Sulfuryl fluoride, for example, originally used as an anti-termite pesticide in indoor fumigation, has come into widespread use as a food fumigant in response to the phasing out of ozone-depleting methyl bromide. According to Dr. Brian Hill, a scientist with the Pesticide Action Network, *sulfuryl fluoride is 4,780 times more potent as a greenhouse gas than carbon dioxide*. Its manufacturers are now promoting its use as a ‘soil sterilizing’ agent – whereas healthy agriculture depends on maximizing the organic content soil of soil!

Polyculture - the alternative to eating oil!

Because we are literally eating oil, agriculture is trapped in the rising price curve of fossil fuel dependency. In 2007, for example, as oil went from USD 50 to 140 per barrel, the price of ammonia fertilizer for US farmers increased from USD 200 per ton to over 1,300.

The antidote to GHG-intensive monoculture is not an exotic or expensive technical fix or patent-protected remedy. It is well known: ***the proven, and necessary, alternative to monoculture is polyculture.***

Sharp reductions in GHG emissions are immediately achievable through multicropping, mixed livestock/cereal production and rotational systems which use catch and cover crops to control pests, reducing GHG emissions with equivalent or higher yields. Sustainable low-intensity input techniques enrich soil organic matter, preserve biodiversity, conserve top soil and water - and with proper support can generate socially and environmentally sustainable rural employment.

According to the authoritative United Nations International Assessment of Agricultural Knowledge, Science and Technology for Sustainable Development (IAASTD) “Agroecosystems of even the poorest societies have the potential through ecological

agriculture and IPM to meet or significantly exceed yields produced by conventional methods, reduce the demand for land conversion for agriculture, restore ecosystem services (particularly water), reduce the use of and need for synthetic fertilizers derived from fossil fuels, and the use of harsh insecticides and herbicides."

The fight for sustainable agriculture is at the same time a fight to defend rural employment. In Brazil, each 8 hectares cultivated by small farmers using mixed cropping generates one job. Large-scale mechanized monocultures generate 1 job per 67 hectares. As agriculture steps up its reliance on fossil fuels to produce growing quantities of greenhouse gasses, the countryside is being emptied, its residents thrust into urban hyper-slums where work is scarce or non-existent.

The technical basis for a transition to environmentally sustainable food production with a reduced carbon footprint has long been known. It is available, accessible, and inexpensive. The barriers to change are social and political, not technology-based. These are the barriers erected by the lobbying and political power of the global agrifood TNCs, who are heavily and probably irrevocably invested in technologies and production methods which are accelerating global warming; a world trade regime which systematically reinforces their power through expanding control over global supply, processing and retail chains; an intellectual property regime which enforces dependency on high-intensity, high carbon, high GHG-producing inputs; unregulated global finance; the systematic destruction by governments and by the multilateral lending agencies (IFIs) of public interest research, support and extension services for sustainable food and agriculture; and unequal access to land, water and other vital resources.

The way forward – organize, fight and win!

Halting and reversing global warming is about rights. IUF governing bodies have repeatedly called for a transition to organic agriculture, moving away from the high-input ingredients which poison food workers and food products. Governing body decisions have identified the threat to food security promoted by the WTO, regional/bilateral trade and investment treaties, the invasion of the food system by financial speculation and the growth of land grabbing. What has become increasingly apparent is that neo-liberalism, toxic agro-chemicals, the destruction of rural livelihoods and the ongoing violation of agricultural workers basic rights are interrelated aspects of a food system which is the greatest single contributing factor to global warming. The more the earth warms, the more reliant the food system is becoming on the means which promote that warming, and the more volatile the system becomes.

There is nothing inevitable about this process. Building trade union power for agricultural workers can be a key tool for transforming agriculture from a major driver of GHG emissions to a source of resource conservation and food for all – provided we make the connections and organize around them. The most fundamental demands of agricultural workers - for a living wage, stable employment, for a safe living and working environment – already take us in the direction of sustainable agriculture. By organizing and winning their rights and pushing for a shift to sustainable, low-input, less fossil-fuel dependent systems of crop production agricultural workers can cool the planet.

The role of processing

Extreme concentration in processing is the motor driving the expansion of export-oriented monocultures (further accelerated by retail concentration). High-input agriculture is the downstream expression of the concentration of processing in fewer and fewer large units with an ever-wider sourcing and distribution footprint, bringing with it higher transport costs and greater reliance on chemical inputs. Growing concentration brings with it job destruction: as local and national business are swallowed, there are simply fewer people at work brewing beer, baking bread, cutting meat etc. Declining employment in the food and beverage sectors in recent years is the consequence of economic and financial pressure, not the result of new

labour-saving technologies (the companies are too busy generating “shareholder value” to invest in either people or technology).

Climate-change induced volatility in agricultural inputs brings increased volatility to processing workers. Increased fossil-fuel dependency, diminishing biodiversity and unmanageable GHG emissions translate into employment insecurity and job losses.

Methane emissions from livestock, according to the Stern Review, account for 31% of agriculture's GHG emissions. Methane is 25 times more potent a GHG than carbon dioxide, and the steep rise in methane emissions in recent years has been driven by the growth of industrialized meat and dairy production. Further, according to the same source, “[inadequate] Manure management methods, including the handling, storage and treatment of livestock waste, causes 7% of agricultural emissions.”

Methane emissions can be reduced, and methane recaptured rather than released into the atmosphere, through alternative methods of production and processing. Many of these techniques are already known and available. Investment in these areas, however, has succumbed to the logic of concentration and the companies' hunger for rising profits.

As in agriculture, the basic demands of food workers – for employment security, a safe working environment, for trade union rights – can and must be linked to a wider program for transforming the food system. Food workers too can help cool the planet.

This document was endorsed by the IUF Executive Committee at its May 2013 meeting in Geneva.

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