What does the IPCC WGII report say on food and agriculture?

Greenpeace briefing

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"Under scenarios of high levels of warming, leading to local mean temperature increases of 3-4°C or higher, models based on current agricultural systems suggest large negative impacts on agricultural productivity and substantial risks to global food production and security (medium confidence). Such risks will be greatest for tropical countries, given the larger impacts in these regions, which are beyond projected adaptive capacity, and higher poverty rates compared to temperate regions."

– IPCC WG2 Technical Summary

IPCC WGII key findings on agriculture

- The effects of climate change on crop and food production are already evident in several regions of the world. Negative impacts have been more common than positive impacts. Recent periods of rapid food and cereal price increases have indicated that current markets in key producing regions are sensitive to climate extremes.
- With average temperature increases of 3 to 4ºC, we will see large negative impacts on farm yields and severe risks to food security. The largest impact is expected in tropical areas, where poverty destroys lives.
- Not only will higher temperatures and more extreme climate events decrease overall food production, they will also increase the variability of yields from one season to the next.
- Not only are food markets sensitive to climate extremes, but food prices are expected to rise with global climate change (estimated increases range between 3-84% by 2050).
- Weeds will become more problematic and rising CO_2 levels might reduce the effectiveness of some herbicides.

What do the findings mean in practice?

- Farmers are already experiencing climate shocks from droughts to floods, and consumers are suffering from food price rises. Governments, donors, philanthropies and the private sector need to take these findings seriously, and shift investment away from high-emitting chemical-intensive agriculture towards ecological farming that can raise yields in a way that actually increases resilience and reduces greenhouse gas (GHG) emissions.
- The progressive variability of inter-annual crop yields in many regions will make it extremely difficult for farmers and consumers to support their families throughout the year. Some farmers are already reacting to climate change and developing new innovations in ecological farming that are building their resilience to future climate-related shocks. In northeast Thailand, for example, jasmine rice farmers have been adapting to increased drought due to climate change by developing innovative ways to use water resources to improve their yields and help them in the future when drought strikes. Investment in helping these farmers to share their innovations has also improved the resilience of many of their neighbours.[1] More of these kinds of investments are desperately needed.

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- The current trickle of investment in research and development and training in ecological farming is drowned out by the fire hose of investment in chemical-intensive agriculture that actually contributes to climate change. This ridiculous perversion must be reversed to ensure healthy food for healthy people on a healthy planet.
- Agriculture affects and is affected by climate change. Despite being a large GHG emitter while at the same time suffering farm yield decreases by climate change, agriculture has a high climate change mitigation potential if ecological farming is embraced on a large scale. Stopping chemical nitrogen fertiliser overuse and shifting to organic fertilisers, improved water and rice management, restoration of organic soils, and agroforestry, are just a few examples of how ecological farming practices could directly contribute to GHG reduction and help reverse the effects of climate change on agriculture.

What Greenpeace says about climate change and agriculture

The IPCC report findings about the impacts of climate change on agriculture sound alarm bells, and show that we need a quick and drastic shift in how we produce our food. The current chemical and fossil fuel intensive farming model is broken beyond repair. It heavily contributes to global climate change, which in turn hurts farmers through decreased production and hurts consumers through higher food prices. And, worse, the greatest impact on food security will be in the Global South.

Governments, donors, philanthropies, and the private sector must heed this latest wake up call and channel funding towards the more environment and people-friendly system of “ecological farming”. Ecological farming practices not only help farmers to increase production but do so in a way that protects and enhances soil, water, and biodiversity, and contributes to GHG mitigation.

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[1] Supaporn Anuchiracheeva and Tul Pinkaew, *Jasmine Rice in the Weeping Plain: Adapting Rice Farming to Climate Change in Northeast Thailand* (Oxford: Oxfam GB, 2009).