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Drought has long been a scourge of humanity and a factor in war and conflict. The current crisis in Syria, for example, comes in the wake of one of its worst ever droughts. Periodic droughts occur because of global temperature cycles in the oceans and atmosphere. But although we understand the causes better, we are still at the mercy of an inherently chaotic weather system.

Add human-induced climate change to the mix and there is an extra incentive to do better. The greenhouse effect is predicted to raise temperatures and prolong droughts (page S2). Many agricultural pests are expected to thrive (S15). All these pressures are putting a squeeze on supplies of fresh water. Farmers need to know how to grow more while using less of this precious commodity (S4).

Research is playing its role. New crop varieties being developed can tolerate higher temperatures and need less water (S7). Computer models that can better predict when and where droughts will hit would help farmers plan — although running these more complicated models is straining computing resources (S10).

Central to long-term food security is implementing a sustainable agricultural system — one that is more resilient and doesn't require continued costly inputs such as synthetic fertilizer and pesticides. Research into the crucial role played by soil microbes provides an insight into how this might be achieved (S18). All this emphasizes the difficulty in tackling this global problem on a local scale: there is no single right answer. Individual farmers need to be empowered to do what is right for their land — a process that can be promoted by smart government policies (S12).

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