

Rice and risks in the Mekong Delta

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The wet and verdant expanse of the Mekong Delta’s rivers and farms is a veritable rice bowl for the world. Not only do the region’s paddies produce half of Viet Nam’s rice crop yearly, the country is the world’s third largest rice exporter with 17% of world exports of paddy rice, the vast majority of which is produced in the Mekong Delta.

But the natural wealth of the great delta belies serious risks which people living in this fragile, low-lying ecosystem now face. Quite simply, the abundant freshwater that defines this region is coming under threat.

In recent years, saline water has started to encroach further inland from the ocean, to such a degree that farmers in some areas of the delta now speak of a “salty season”. Some have even had to change from growing rice to farming shrimp which can cope in the now brackish water. Local communities are increasingly turning to pumping groundwater for irrigation, aquaculture and drinking water, but this only accelerates the salinisation. Pumping also causes land subsidence and depletes underground water supplies, reducing water security for future generations.


Meanwhile, sea levels are expected to rise in the region by 45-75 cm by 2090. This is a major threat to a part of the world which, on average, is less than 2 metres above sea level. A rise in the sea level of only 30 cm could see the loss of nearly 200,000 hectares of rice cultivation.

These risks are compounded by extensive dam-building along the river’s length and the development of sand mining. Together these activities severely impede the flow of the sediment that supports fish and shrimp farms and replenishes soils in the delta lost to erosion.

The economic risks are significant, and not just for Viet Nam. How long will it be possible to maintain rice production given the ongoing damage to the ecosystem? And at which point will the impact of these water risks begin to affect global markets?

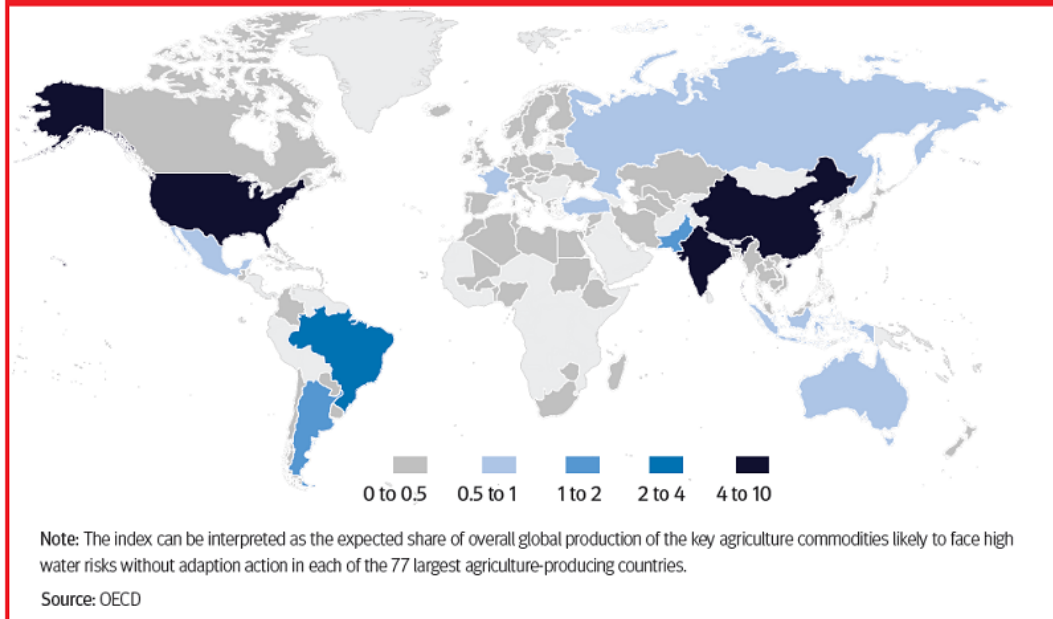
The Mekong Delta is one of a number of localised agricultural regions in the world that face acute water risks, which we have identified as water-risk “hotspots” that require a targeted policy response. These water risks are not only the result of climate change but involve a range of factors, including farming itself, that cause water shortages, floods and degradation of water quality, all of which threaten agricultural production.

Our projections of future water risks suggest that China, India and the United States will be the three countries where agricultural production will be the most severely affected globally. Water stresses in the hotspot regions of northeast China, northwest India and the southwest United States alone would result in price increases of 5-8% globally for certain commodities such as cotton, maize and wheat, and cause significant shifts in their trade too. Our analysis identifies Viet Nam as facing the world’s fourth highest water risks for rice production.

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In the face of water risks, how can we safeguard agricultural production and our food security? Targeted adaptation and co-ordination will be key here. Farmers can shift production—as is already taking place in the Mekong Delta—or improve their agricultural practices, such as changing when in the year they plant crops or adopting new and adapted rice varieties. At the same time, agro-food companies could work with farmers to improve their practices, such as by providing them with saltwater monitoring systems, or by encouraging rainwater collection as a supply of freshwater in place of groundwater during the dry season.

Future water risk hotspots for global production of major agricultural commodities, 2024-2050 average



In parallel, governments must focus their attention and efforts on hotspot regions by tailoring existing policy instruments and introducing new measures that directly address water risks while ensuring their actions complement those of private actors. They also need to strengthen market and trade relationships at the national and international levels to dilute price effects and ensure regional impacts are contained. This response would be supported by efforts at the international level to share information about water risks to reduce the spread of indirect impacts.

Just as with our case studies in northeast China, northwest India or the southwest United States, public and private actors in the Mekong Delta are now taking the first steps to mitigate agriculture water risks in the region, as discussed at the first Asia-Pacific Economic Cooperation (APEC) Meeting of Water Resource Authorities on “Challenges for food security in a context of climate change” in Viet Nam in August 2017.

These efforts need to be intensified in a strategic and co-ordinated manner, as we argue in *Water Risks Hotspots for Agriculture*, to ensure that they effectively reduce the risks for future generations. With the right policies and approaches, not only can food production in hotspots such as the Mekong Delta and other farming regions be preserved, but people’s livelihoods and the great ecosystems we rely on can also be secured.

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References

The report findings were presented during an OECD: Green Talk Live webinar on 18 October 2017, the recording of which is available here <https://www.youtube.com/watch?v=BYX6sUk6DFI>

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An overview of the OECD's work on water use in agriculture can be found here <http://www.oecd.org/tad/>