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Climate Change and Fairtrade Cocoa



A recent published [scientific study commissioned by Fairtrade with EU funding](#) shows how climate change is expected to impact the agricultural production of different crops, including cocoa, in different regions. While impacts are not distributed evenly, when production is threatened, its effect has implications for the entire value chain, from producers to traders and even consumers.

The researchers, from Vrije University Amsterdam and Bern University of Applied Sciences, used three indicators of climate change impact: warm spell duration index (heatwave, heat stress risk), consecutive dry days (drought risk) and heavy precipitation days (water damage, erosion, pest risk). They also looked at tropical cyclones and depleted water basins. The researchers used a moderate (low-emissions) and an extreme (high-emissions) scenario to calculate a lower and upper range of potential climate impacts for each crop.



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Cocoa, that is produced in a rather limited area and that has a small genetic diversity, is highly sensitive to climate change. With a high threat from climate change due to increases in potential evapotranspiration (PET) and consequent plant water demand, and decreases in precipitation, cocoa production will be exposed to many climatic stressors due to climate change. Fairtrade calls for action to all supply chain actors, including brands to support producers in setting up projects to equip them to adapt to the climate change risk.

The facts on Fairtrade cocoa production worldwide

- Precipitation along with water limitations in the dry periods will lead up to increased cocoa yield gaps in the years to come
- Cocoa production is likely to be most influenced by water availability than by high temperatures in the near future
- Cocoa plant growth is at a threat due to decrease in cocoa photosynthesis because of temperatures exceeding optimal temperatures for cocoa production
- Cocoa plants will be at high risk of waterlogging which will result in decreases in cocoa yields as well as plant death due to damaged leaves and roots after longer periods of flooding
- West Africa, the main cocoa producing region, has experienced considerable drying of the climate in the recent decades, both in the marginal cocoa production areas as well as in the forest zone
- Increasing deforestation by ever more cocoa plantations in West Africa contributes to driving climate change, which causes microclimates less suitable for cocoa production.

Impact on Fairtrade cocoa production

Certain Fairtrade cocoa producing areas are expected to be severely impacted in face of climate change, mainly due to increased number of hotter and drier days, Increased temperatures and evapotranspiration limit production due to decreased photosynthesis, and increased occurrence of extreme rainfall events.



More warm spells:

Under extreme climate change, Fairtrade cocoa producers will be exposed to an average of 30 additional days with extremely high temperatures than one of the highest maximum daily temperatures recorded between 1980-2010. While West Africa will be least affected by additional warmer days in the future, it will still experience over 20 more warm days under moderate climate change assumptions. Figure 1 shows that the impact will be most prominent in:



- Caribbean and Central America: Belize, Honduras, Grenada, Nicaragua
- South America: Ecuador, North of Peru, Bolivia, South Colombia
- West Africa: Liberia, Sierra Leone, Sao Tome & Principe
- Central and East Africa: Uganda and Madagascar
- South and East Asia: India (e.g. Kerala, Tamil Nadu) and Vietnam

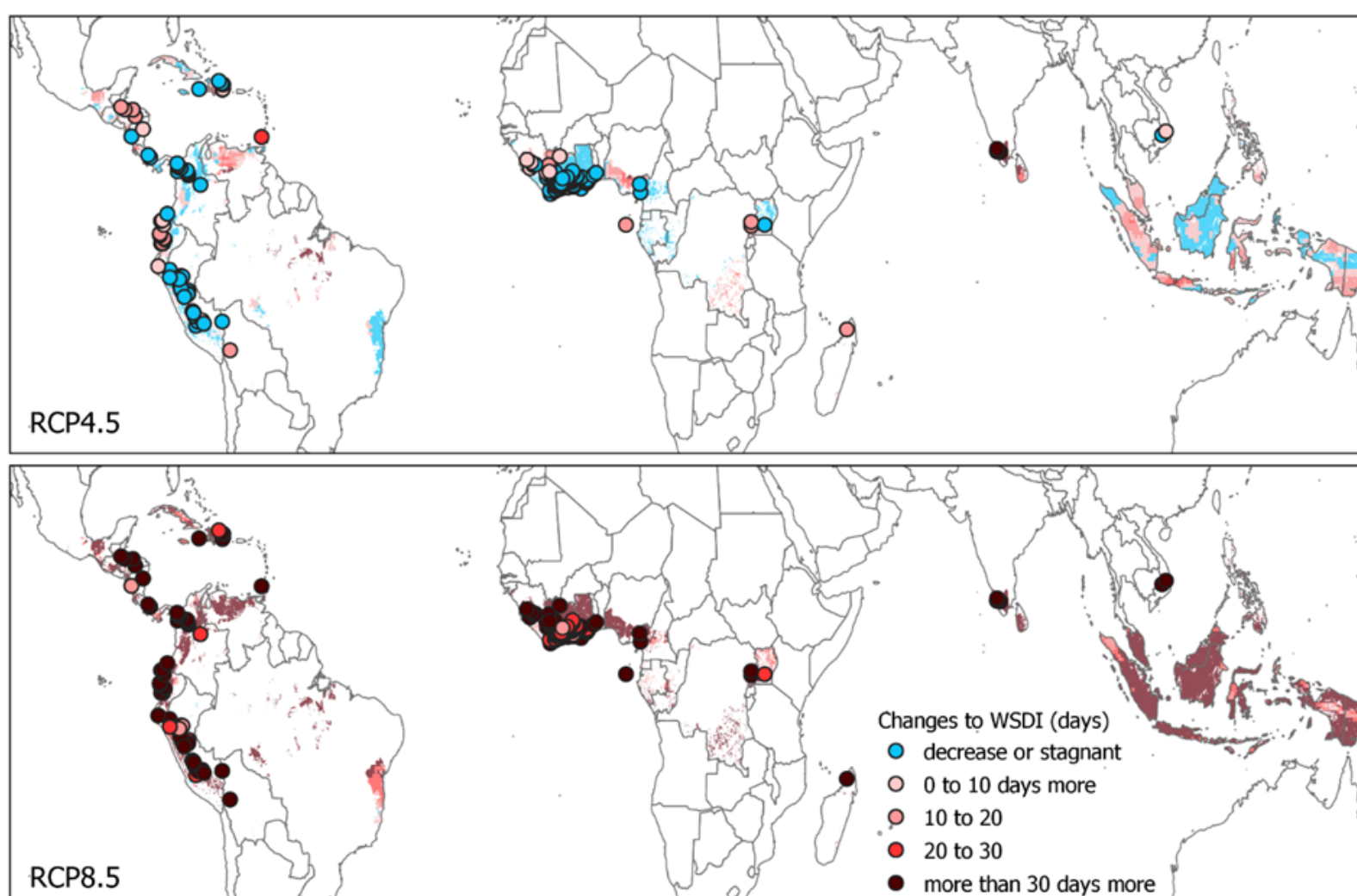


Fig 1: Changes to the warm spell duration index (WSDI, in days) in cocoa producing regions (surfaces) and Fairtrade cocoa producers (points).



More consecutive dry days:

The Caribbean and Central American region, one of the most important cocoa producing regions, will experience on average 1-3 days longer dry periods, and the West African region will experience up to 3 more dry days on average. The effect is expected to be more pronounced in South America, particularly in areas that are already less humid compared to other cocoa producing areas today. As is seen in Figure 2, these changes are likely to be more eminent in the following countries:



Caribbean and Central America: Belize, Dominican Republic, Haiti, Honduras, Grenada, Nicaragua, Panama and Costa Rica

South America: Western Ecuador, South of Peru, Bolivia

West Africa: parts of Ghana and Ivory Coast, Sierra Leone, Liberia

Central and East Africa: Madagascar

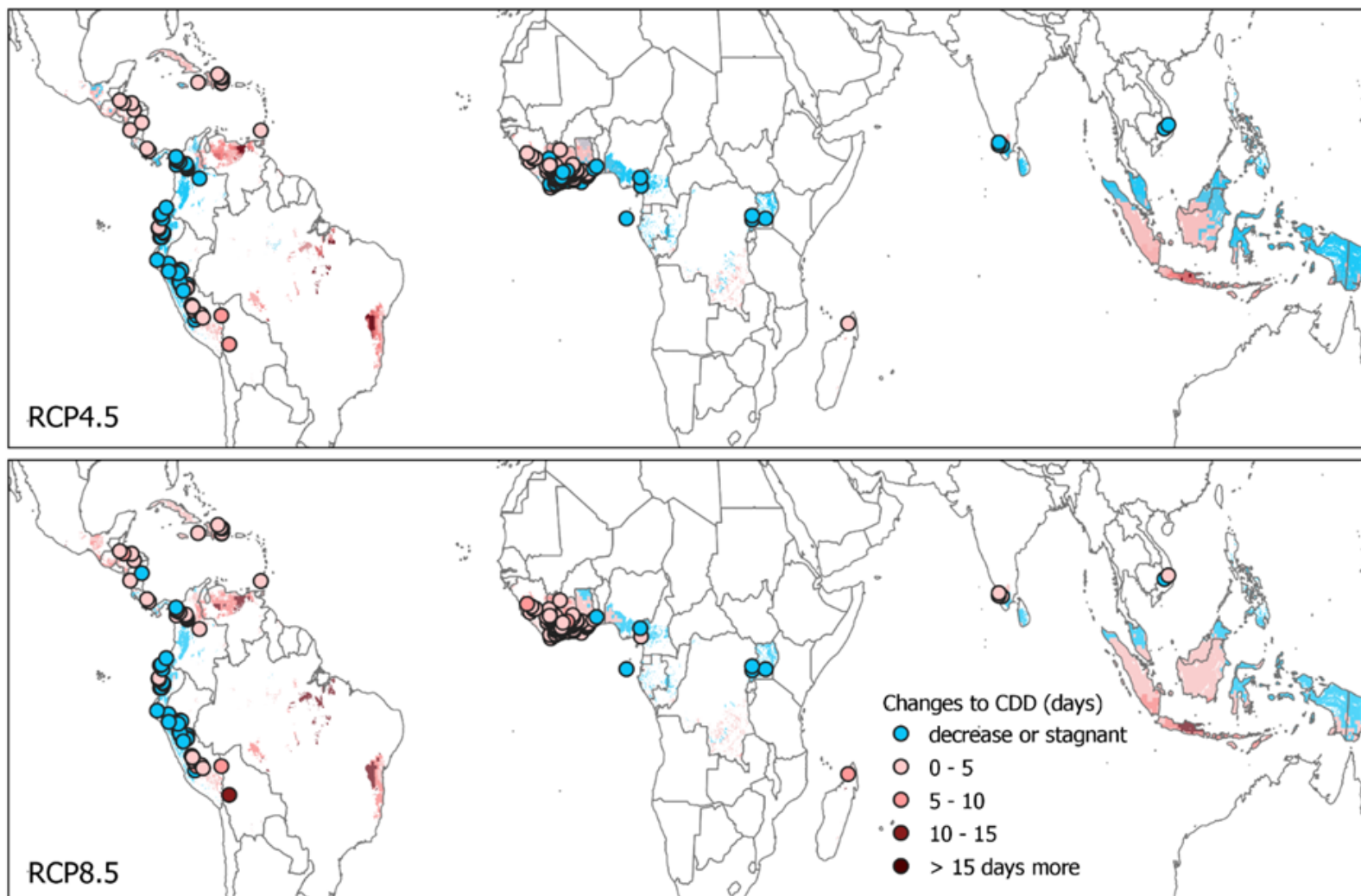


Fig 2: Changes to consecutive dry days (CDD, in days) in cocoa producing regions (surfaces) and Fairtrade cocoa producers (points).

Most of these areas will experience a combination of both more heatwaves and more consecutive dry days highlighting the severe impact of climate change on key Fairtrade cocoa producers.



Heavy precipitation days:

Latin America is projected to experience more days with heavy precipitation under both moderate and extreme climate change assumptions. Other areas include:



South America: Colombia, Western Ecuador, Central Peru
West Africa: Eastern Ghana and Northern Ivory Coast
Central and East Africa: Uganda



Where most volumes are at risk:

Areas of significant production volumes of Fairtrade cocoa that will be most impacted by future heating and drought:



West Africa: Ghana and Ivory Coast
Caribbean and Central America: Dominican Republic
South America: Central Peru



Where most most producers will be affected:

In terms of the number of farmers producing cocoa, the regions that will be heavily impacted are:



West Africa: Ghana and Ivory Coast
South East Asia: Timor Leste
Caribbean and Central America: Dominican Republic
South America: Brazil (e.g. Bahia), Southern Peru

Fairtrade's contribution to addressing climate change

Fairtrade adopts a project-based approach in supporting producers and farmers in adapting and becoming more resilient to climate change and is generating donor funding for additional projects. The focus of such projects is determined locally, involving the producer networks and farmers to assure projects correspond to local needs.

For example, for the small scale producers of cocoa in Latin American countries Fairtrade ran Exchange, a Project for Advocacy and Leadership on Climate Change. This project stimulated increased knowledge and awareness of climate change related topics, and attempted at extending small-scale farmers' capabilities in adapting to the effects of climate change. This was done by forming a school of 100 young leaders focused on advocacy, training and communications around climate change, including manuals of good practices for climate change adaptation.

In West-Africa, Sankofa, a multi-stakeholder partnered project initiated in Ghana, aimed to encourage more diverse cocoa production systems and building commercial alliances. The project tested dynamic agroforestry (DAF) and diversified cropping techniques, and combined income diversification and carbon insetting through a commercially driven, market systems approach. Producer organizations were also encouraged to register to the Gold Standard, a certification of carbon emissions reductions and sustainable practices, which contributed to collection of Fairtrade Carbon Credits and long-term monitoring of the carbon stocks. To read more on Fairtrade's efforts related to climate change, please view the [Learning by Experience report](#).

Moreover, Fairtrade producers receive a Fairtrade Premium and Fairtrade Minimum Price when selling their products as Fairtrade certified, proceeds of which can be used to address priorities which farmers decide to invest in, including climate change measures. At the moment for conventional cocoa the Fairtrade Minimum Price is set at 2400 USD/MT FOB for with a Premium of 240 USD/MT. Beyond projects, Fairtrade tries to promote organic production through Fairtrade Minimum Prices for organic set 300 USD/MT above the conventional price.

Finally, in light of the recent EU draft directive on deforestation-free cocoa supply chains, Fairtrade acknowledges European Commission's proposal to create a market for deforestation-free products, but believes that the fight against deforestation must include enabling smallholder farmers by engaging them in the process of constructive climate action rather than banning imports of cocoa from smallholder families. Fairtrade encourages efforts needed to build capacities and systems that enable smallholders' cooperatives to play their role in retaining market access to the EU, and intends to build on this by increasing adaptation and mitigation projects further by promoting good agricultural practices (GAPs) including agroforestry and organic farming through participatory, farmer-centered approaches.



What more can be done?



Against the major threat of climate change to the future of cocoa production, Fairtrade recognizes that more needs to be undertaken and at a larger scale with producers to promote sustainable practices such as agro-forestry and where suitable promoting organic production. This includes reviewing the Standards (especially when it comes to environmental criteria), but also more training on locally adapted good agricultural practices, more advocacy and building new partnerships, where partnerships can be most efficient, for example in addressing deforestation through remote sensing or collaborating with 'Grow Ahead' to [promote agroforestry for cocoa producers](#) in Ghana.

While Fairtrade and the producers are aware of the immense challenge and need to step up existing efforts to address the massive challenges posed by the global problem of climate change, it would not be fair nor realistic to let the burden of costs fall on producers alone. Fairtrade therefore invites commercial partners to join us in supporting Fairtrade projects aiming at adapting to and mitigating climate change impacts to cocoa production, building on Fairtrade's extensive network of producer network staff in producer countries. Both financial contributions to existing projects as well as collaborative project development – hand in hand with Fairtrade and the producers – are concrete options that can support producers to reduce negative climate change impacts, which is in the interest of all value chain actors. This could be combined with establishing projects under the Fairtrade Climate Standard which would generate Fairtrade Carbon credits suitable for offsetting carbon emissions along e.g. Fairtrade cocoa supply chains.

For more information on how to work with Fairtrade and support farmers in building a more sustainable and fairer future, contact partnerships@fairtrade.net or contact your regular Fairtrade contact.

