WHERE OUR FOOD CROPS COME FROM

Global interdependence on plant genetic resources

Different regions of the world depend on each other for plant genetic resources. That's because most of the foods we cultivate and eat each day were initially domesticated and then diversified over time in other parts of the world. For example, potato – long associated with the Irish – comes from the Andean region of South America; cassava, which is consumed by 500m people every day in sub-Saharan Africa, comes from South and Central America.

These three images show this interdependence in greater detail.

FIGURE 1: World Map
This shows what scientists call the 'primary regions of diversity' for different crops. These are where crops we consume today were initially domesticated and subsequently evolved over hundreds to thousands of years. Generally, these areas also contain a great diversity of crop wild relatives.

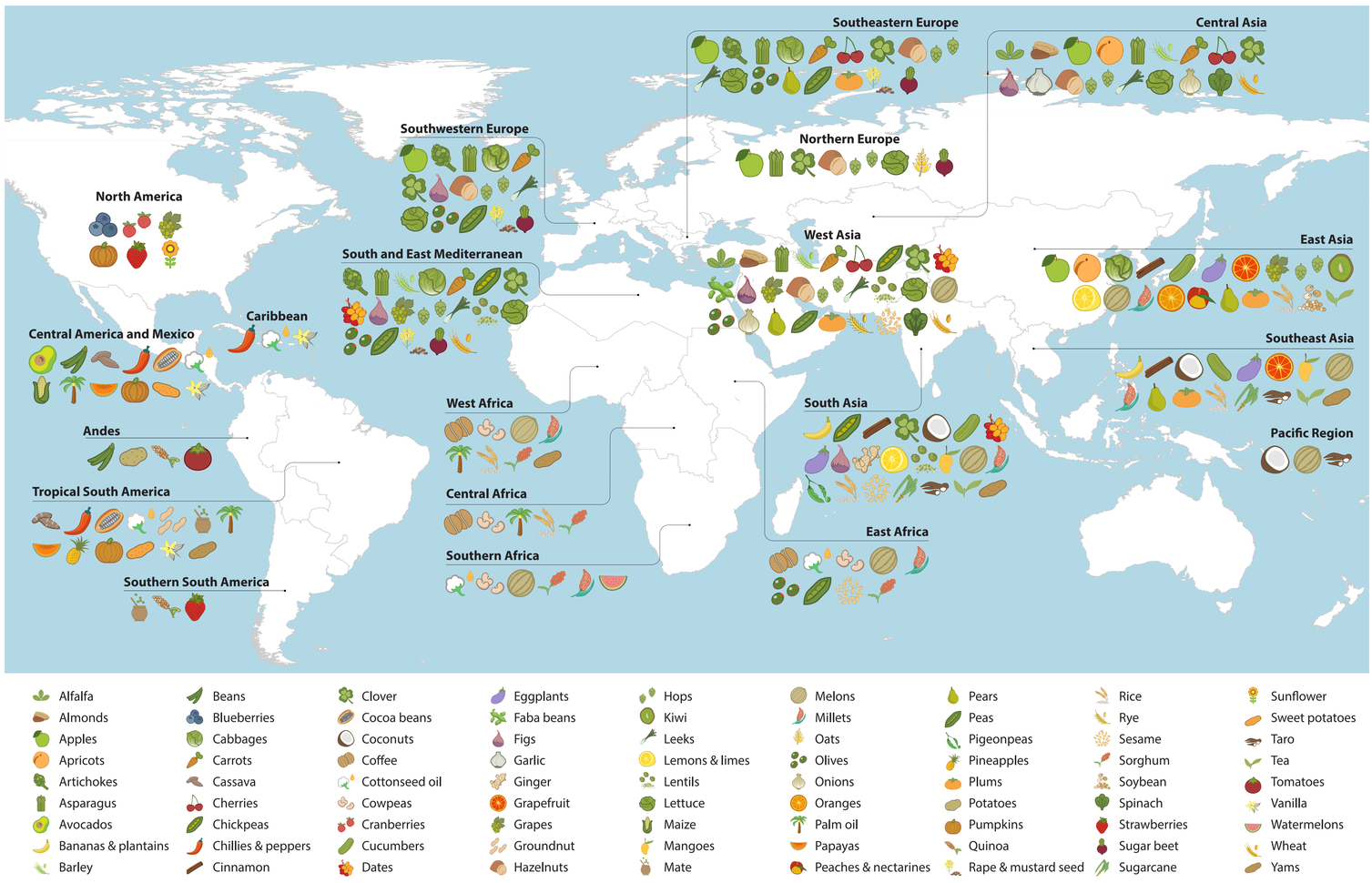
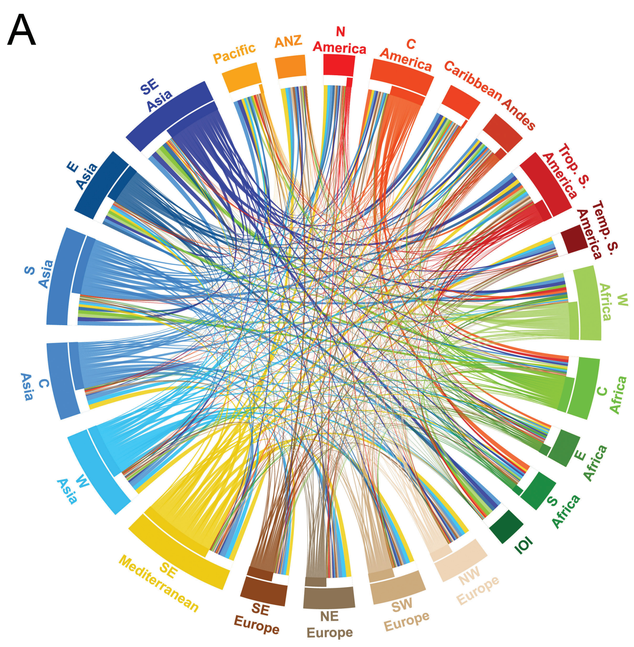
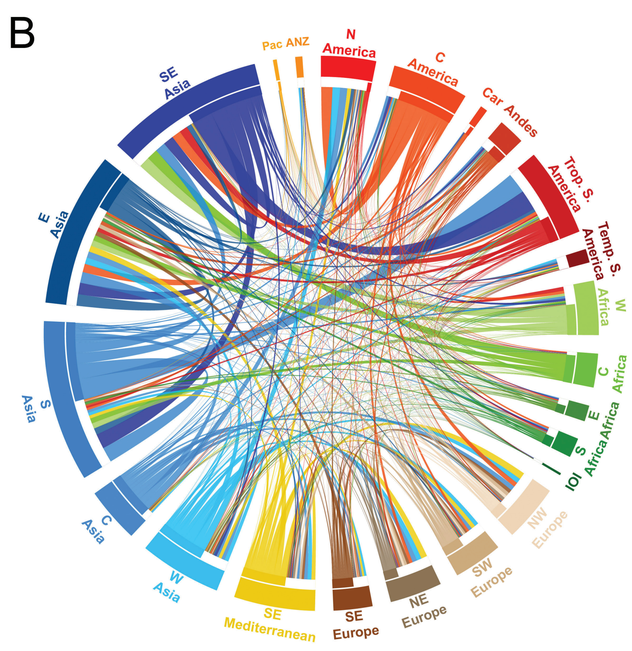


FIGURE 2: How interdependent are we?
These 'kaleidoscopes' show how dependent each region of the world is on others in terms of plant genetic resources.



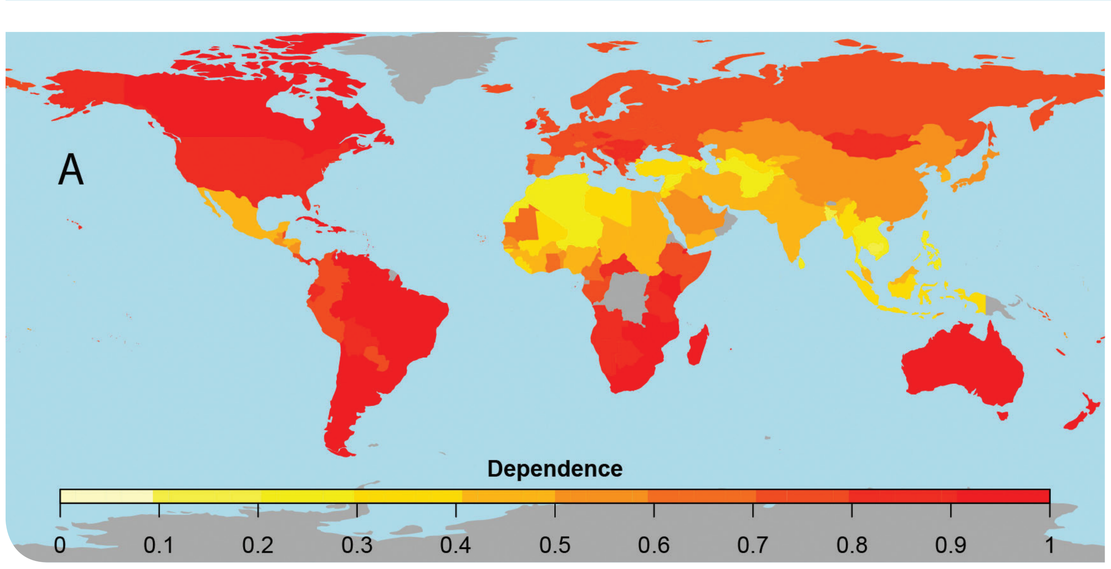


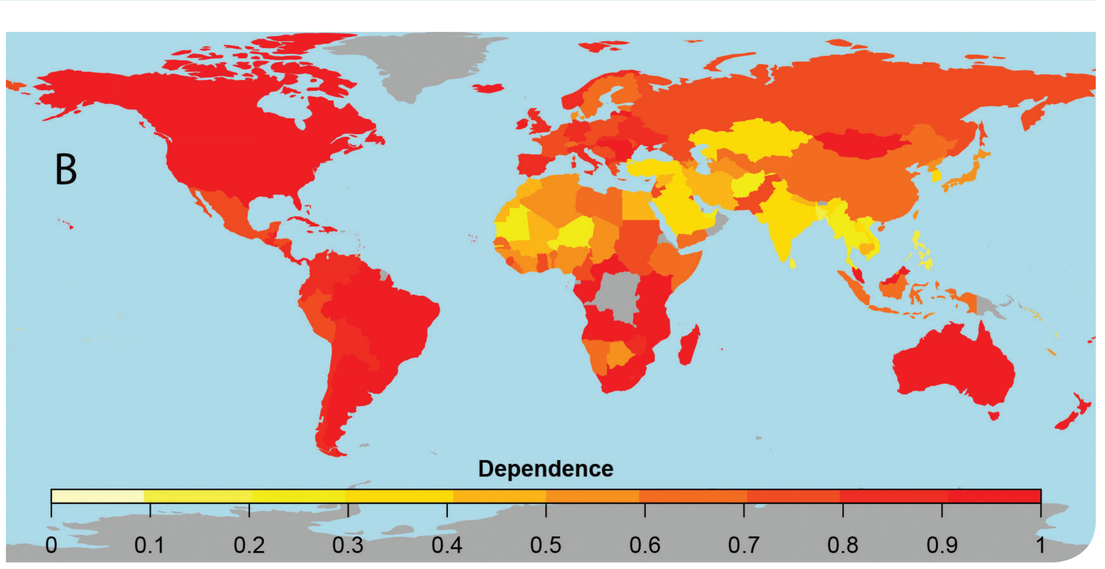
PART A shows the dependence of each region of the world in terms of calories derived from crops whose primary regions of diversity are found elsewhere. Each region has a colour representing its own crops and those colours are connected to other regions due to the importance of those crops in other regions. Likewise, each region receives calories from crops that originate in other regions.

For example, Tropical South America (Trop. S. America) is represented in crimson. The crimson lines represent calories derived from crops that originated within the region and that are consumed in other parts of the world – for example, cassava, groundnut, and cocoa beans. Similarly, Tropical South America depends on crops whose primary regions of diversity are found elsewhere, for example, rice, sugarcane, and bananas and plantains.

PART B shows the interconnection between regions of the world in terms of tonnes of food produced per region of crops that originate within each region and outside them.

FIGURE 3: How dependent is each country on "foreign" genetic resources?
These maps provide an indication for each country of their degree of dependence on "foreign" crops whose genetic diversity originates largely from outside their borders. Part A displays this dependence in terms of calories consumed in each country, and Part B in terms of tonnes of food crops produced in each country. The scale indicates the degree of dependence on "foreign" crops: darker red countries are more dependent in their diets and/or national agricultural production on crops that originate elsewhere. As examples, (A) demonstrates that Canada (dark red) is very highly dependent on "foreign" crops in terms of their contribution to calories in national food supplies (estimated value is 92.5%), and (B) shows that Australia (dark red) is very highly dependent on "foreign" crops measured in tonnes of food produced nationally (estimated value is 99.9%).





Khoury et al. 2015 Where our Food Crops Come from: A new estimation of countries' interdependence in plant genetic resources. CIAT Policy Brief No. 25

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