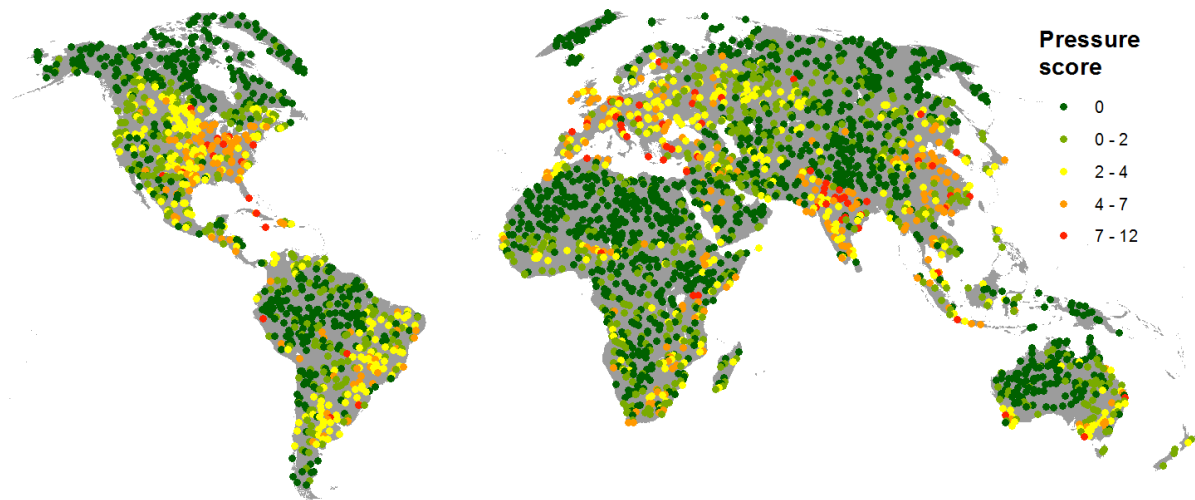
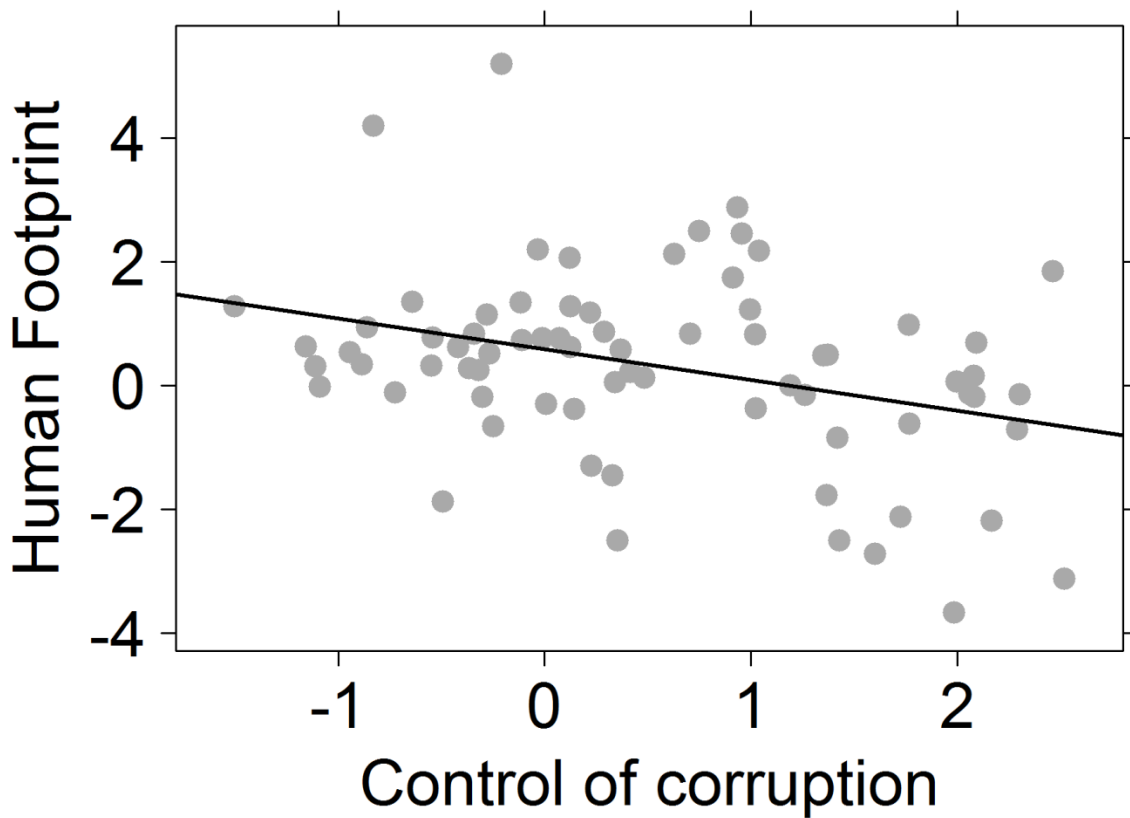


## Supplementary Figures



**Supplementary Figure 1.** The location and visually interpreted score for validation plots. The pressures within the 3114 1km<sup>2</sup> validation plots were interpreted and scored following Supplementary note 1.



**Supplementary Fig. 2.** Absolute change in the human footprint from 1993 to 2009 for the top 50% of countries for GDP growth per person ( $n = 73$ , linear model,  $z = -2.03$ ,  $p = 0.04$ ) for the same period, compared to each country's control of corruption.

## Supplementary Tables

**Supplementary Table 1.** Human footprint change and socio-economic variables. Results for the most parsimonious general linear model explaining the human footprint trajectories of the 73 countries that had the greatest GDP at PPP per person change between 1993 and 2009. Explanatory variables assessed include: country area, GDP at PPP per person in 2009, corruption of control, proportion of country under protection, net trade in agricultural and forestry products (calculated as the sum of value of agricultural and forestry exports minus that of imports), the proportion of population in urban areas and non-income HDI.

Coefficients	Estimate	Std error	Z value	Pr (> z )
Intercept	2.0205	0.8220	2.46	0.014*
Percent urban	-0.0209	0.0117	-1.79	0.073
Control of corruption	-0.3576	0.1766	-2.03	0.043*

**Supplementary Table 2.** Sensitivity of human footprint to static data sets. The change in human footprint from 1993 to 2009 using static and dynamic pasture data for countries grouped by OECD income categories.


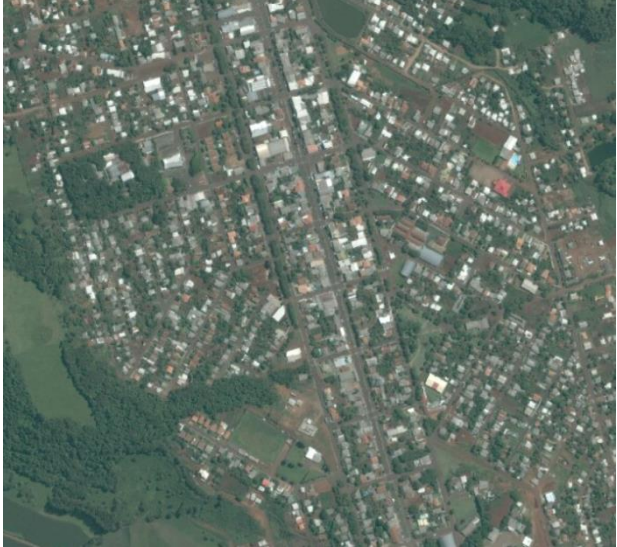
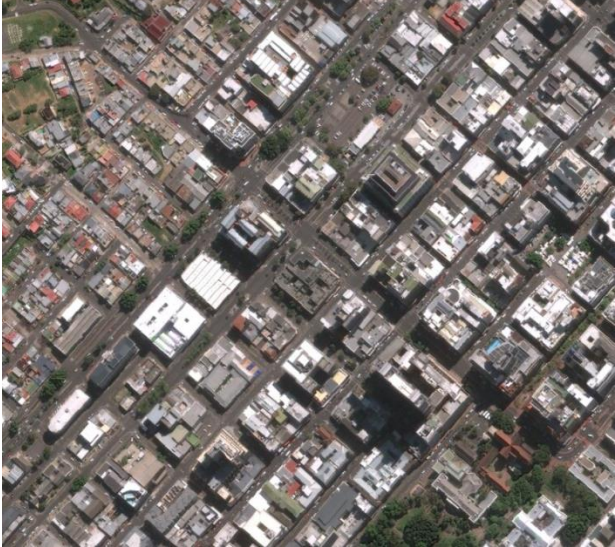
OECD category	HF change with static pasture	HF change with dynamic pasture
Low income	0.698	0.709
Lower middle income	1.026	1.047
Upper middle income	0.629	0.626
High income	0.478	0.461

## **Supplementary note 1. Visual interpretation of satellite images for mapping human pressures**

When interpreting images, interpreters can zoom in and pan to identify pressures. For sample areas where only coarse scale Landsat images are available, these images can be used if it is deemed that they are sufficient to allow classification for the area, which may be possible in highly green wilderness areas.

Otherwise, the sample should be marked as 'na'. If the shape matches expectations, cleared patches with bare ground are assigned the land cover category of the wider landscape, eg. urban, forestry or crops. This is done as bare ground across a plot within farm land is likely to be tilled farmland, likewise a brown patch in a forested landscape is likely to be a recently felled clear cut. Distinguishing between crops and pasture is a challenge, zooming in to look for linear planting or fence lines or signs of cattle or their feeding/drinking points may help. Some land cover types are not mutually exclusive, for instance, urban areas may also be scored as high density for roads and human dwellings. Crops, pasture, urban and forestry are mutually exclusive at a site, but can co-occur within a 1km<sup>2</sup> sample area. Following visual interpretation, interpreters should mark their interpretation as 'certain' or 'not certain'. Certain means that 95% of the time you will be right. The year of images is accessed for all samples using the information tool and recorded.

The samples are selected using a random sampling. Those are automatically overlaid with ESRI high resolution images within ArcGIS 10.1, allowing a rapid access to recent remote sensing images with zooming capabilities. For a given sample the expert saw not only the sample point but also a box that coincided with the so-called observational unit and its quadrats.

Pressure	Description	Scoring
Urban	<p>Built environments are human produced areas that provide the setting for human activity. These are primarily urban settings, including buildings, paved land and urban parks, and excludes isolated roads and isolated housing. They are easily identified by sharp contrasts in tones, widespread homogeneous grey surfaces, and recognisable human constructed shapes. % built? Definition of urban. Urban park is a highly managed natural vegetation.</p>	<p>None = 0,  sparse = 1, &lt;12.5%  medium = 2, &gt;12.5%  dense = 3, &gt;50%</p>
		

Crops

Croplands are cultivated areas used for annual or perennial crops, such as orchards or vineyard. Typically exhibit a checkerboard pattern of cropland pattern from different crop stages (exhibited by varying grey tones) and differences in tillage directions. Cropland areas, generally devoid of trees, possess a smoother texture than pasture land areas and often have linear markings from planting, harvesting or tilling lines.

None = 0,  
sparse = 1, <12.5%  
medium = 2, >12.5%  
dense = 3, >50%



Pasture

Land covered with grass and other low plants suitable for grazing animals, especially cattle or sheep. Often characterized by fencing without linear cropping, but often with linear changes in vegetation blocks along fence lines. Cattle or their tracks, as well as vehicle access tracks may be visible.

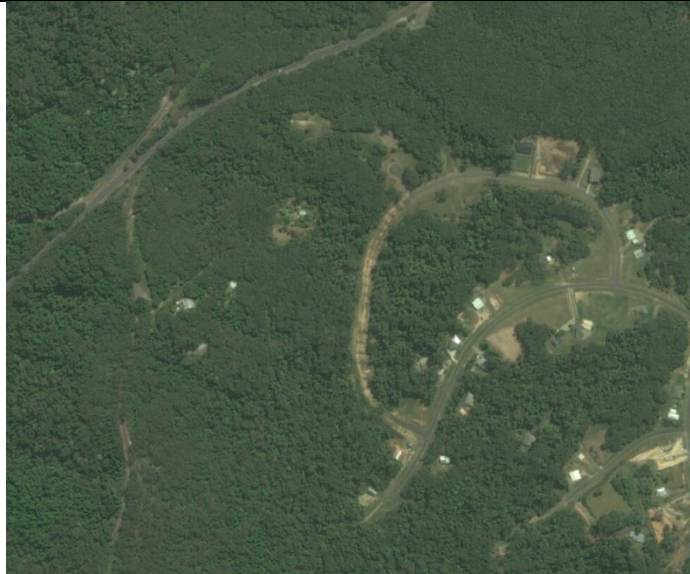
None = 0,  
sparse = 1, <12.5%  
medium = 2, >12.5%  
dense = 3, >50%



Roads-paved, unpaved and private

Linear infrastructure with a wide homogeneous grey surface, and often a disturbed vegetation or bare earth band in parallel. Paved roads have a grey surface, unpaved roads have a brown surface. Private roads are not used for transportation by the public, but rather provide private access, such as access to farm fields.

None = 0,  
sparse = 1, at least one road visible  
medium = 2, roads with length that traverses the image twice  
dense = 3, roads with length that traverses the image 5 times





Forestry

Harvesting of natural or plantation forest. Can be clear-fell harvesting, common in temperate forests, or selective logging, common in the tropics. Clear-fell harvesting characterized by large patches of felled forest of often irregular shape following topographic features. Selective harvesting characterized by much smaller harvest patches, a network of dirt roads with noticeable small cleared areas with dirt surface used for landing logging. Selective logging common in the tropics. Plantation forests can be distinguished by their uniform tree cover, and sometimes linear planting rows.

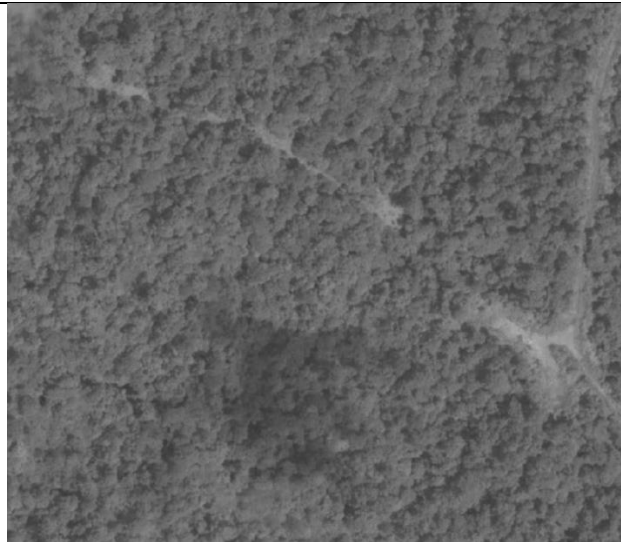
None = 0,  
sparse = 1, <12.5%  
medium = 2, >12.5%  
dense = 3, >50%



Clear cut logging in British Columbia, Canada



Clear cut logging in Russia.






Selective logging in Indonesian Borneo

Human dwellings

Human dwellings, including dense urban areas with apartment buildings, and sparser suburban and rural housing

None = 0,  
sparse = 1, <4 single-family dwellings per km<sup>2</sup>  
medium = 2, <20 single-family dwellings per km<sup>2</sup>  
dense = 3, >20 dwellings per km<sup>2</sup>, or 1 apartment building per km<sup>2</sup>



<p>Infrastructure</p>	<p>Non-urban, housing, road or rural infrastructure. Includes Mining infrastructure, dam infrastructure, rail, and other linear features such as pipelines.</p>	<p>None = 0,  sparse = 1, &lt;12.5%  medium = 2, &gt;12.5%  dense = 3, &gt;50%</p> <p>and for linear infrastructure:</p> <p>None = 0,  sparse = 1, at least one road visible  medium = 2, roads with length that traverses the image twice  dense = 3, roads with length that traverses the image 5 times</p>
 <p>Mining site sub-Saharan Africa</p>	 <p>Industrial and dam infrastructure in China</p>	 <p>Electricity transmission line in Australia</p>
<p>Navigable waterways</p>	<p>Navigable waterways appear wide and deep enough for a vessel to travel, and lack impassable areas of whitewater. Signs of human activity along the shoreline, such as human structures or roads leading to the water within 40km of the sample plot mean the waterway is likely to be navigated.</p>	<p>None = 0,  sparse = 1, at least one navigable waterway  medium = 2, navigable waterways with length that traverses the image twice  dense = 3, navigable waterways with length that traverses the image 5 times</p>