

Business and soil: challenges and opportunities



Business and soil: the relationships

Business agricultural activities impact upon soil	...through increased soil salinization and acidity from pollution ...through the promotion of soil erosion, degradation and compaction ...through alteration of nitrogen and phosphorus biogeochemical cycles
Business activities are vulnerable as they rely upon soil	...as soil texture and structure define yield quantity and quality ...as soil biodiversity plays an important role in maintaining productivity ...as soil nutrition is necessary for plentiful and high-quality harvests
External forces are putting pressure on soil resources	...as landscapes are shaped by natural forces ...as population and consumer trends continuously evolve

What are the soil-related challenges for business?

Businesses assert little control over on-the-ground soil related activities: *With complex global supply chains, businesses do not always control soil management activities thereby threatening supply of their raw materials.*

There is a lack of science regarding specific commodities and locations: *Science surrounding soil requirements for varying land uses and crops is either lacking or needs to be compiled and translated in to business-digestible material.*

Natural events and climate change impacts are accelerating soil degradation: *Wind and rainfall trends will impact topsoil and soil nutrition as wells as soil stability and structure, thereby increasing input costs.*

Although not always obvious, understanding the links between soil and business can help companies to maximise their growth and productivity and minimise their risks. Demonstrating good soil practice, through appropriate management, can be essential to gaining access to land and resources as well as proving responsible performance to government, investors and other stakeholders. Generating greater yields per unit of land at a higher profit by lowering unit production costs will only be possible by building and maintaining soil fertility and providing balanced nutrition to crops.

What are the soil-related opportunities for business?



Ingredion: Training farmers to share best practices through its Thailand Model Farmer Programme in its Thai cassava producing farms. These farmers represent the optimal environmental stewards.

The partnership between Ingredion and its farmers enables them to stand economically but they nurture their soil, rivers and environment because of their ingrained relationship with the land.



Nestlé: Expanding cocoa production by promoting improved yields on existing land rather than through forest encroachment in Côte d'Ivoire.

Developing a fertiliser in partnership with other companies to boost soil fertility reduces the expansion of cocoa plantations into forested land while increasing Nestlé's cocoa yield and securing its supply chain.



Olam: Mitigating rainfall pattern variability and drought on Californian orchards through: more efficient and timely irrigation; increased efficiency of existing wells; application of compost, organic acids and soluble calcium on soils; acidification of water and; installed pipeline to transfer water.

Enhancing the water holding capacity and nutrition of soil has allowed Olam to turn away from its dependency on an ever more pressured water resource. Exploring soil dynamics is a more cost-effective solution to the drought issue than the long-terms and costly process of deepening wells or treating poor-quality water.

Read the entire **Doing Business with Nature** report at www.cisl.cam.ac.uk/natcap