

Derivation of Environmental Spatial Indicators for assessing the sustainability of Fair Trade based on Earth Observation data

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The GEO FAIR TRADE FP7 project aims to involve Fair Trade organization in the adaptation and development of Sustainable Development Indicators (SDI) for Fair Trade with a view to measure Fair Trade impact and improve the traceability of its products. A set of standardized indicators with a spatial dimension were developed in collaboration with research organizations. The SDI framework is formalized through a set of so-called “state” indicators describing the context in which the Fair Trade producer organization is operating and a set of “activity” indicators describing the capacity of producer organizations to alter their current situation (see Figure 1). In addition, SDIs are grouped in the following categories to provide a complete description of Fair Trade and sustainable development:

- Social
- Economic
- Environmental
- Capacity Building
- Relationships

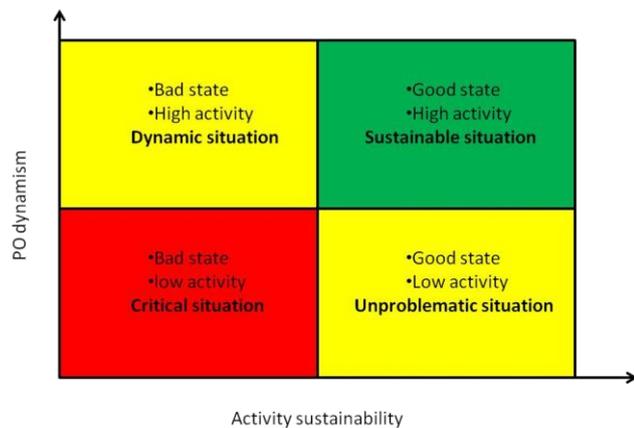


Figure 1: Characterization of the Activity/State relationship

Geographical information technologies provide a common analytical framework for the development and enhancement of SDIs. Within this framework, Earth Observation provides an independent and objective means of representing producer organization data and for deriving environmental “state” indicators contributing to establishing the GEO FAIR TRADE SDI portfolio. Earth Observation is used in combination with GPS observations to provide an accurate identification and delineation of producer parcels and for the derivation of land cover maps using IPCC compliant classification schemes to ensure a high level of standardization using open data sources to reduce costs.

These data are used to derive spatial indicators related to the spatial organization of fair trade parcels and the degree of anthropisation based on land cover change analysis. This was implemented for six case studies around the world and results were presented through a dedicated web portal:

- Coffee, cashew and spices in Kerala, India
- Vanilla near Vohemar, Madagascar
- Tea in Mpanga, Uganda
- Shea Butter, Ouagadougou peri-urban area, Burkina Faso
- Coffee in Minas Gerais, Brazil
- Panama hats near Cuenca, Ecuador