

LARGE-SCALE EXPLOITATION OF SATELLITE DATA IN SUPPORT OF INTERNATIONAL DEVELOPMENT

→ INDEX INSURANCE SERVICE

Index insurance schemes base their insurance premiums and indemnity payouts on a pre-determined index derived from Earth Observation (EO) data rather than on actual crop and livestock losses. The insurance pays upon the occurrence of a triggering event, with EO data providing measurable indices (e.g. precipitation, vegetation index NDVI, biomass production, relative evapotranspiration, soil moisture) of the event. Given that this eliminates loss verification costs, an index insurance approach has substantial potential for scale up, even if sales and education of sales agents and insurance takers remain critical for effective insurance take-up.

Index insurance is used as a risk management tool in agriculture, food security and disaster risk reduction. Index insurance is important for development because it helps stabilise income for smallholders when yields are affected by weather. It is one of the tools MDBs have to reach their goal of reducing extreme poverty.

A key challenge for delivering relevant EO services to index insurance schemes is to construct indices that closely correlate to farmer's losses (i.e. yields, forage scarcity) and/or key yield reducing hazards like droughts. For such schemes to be effective, indices should account for monitoring the land use of interest, and also for the seasonality of crop production. A common index used for input to insurance schemes is spatially- and temporally-aggregated NDVI, but also agrometeorological input variables like soil moisture, precipitation, solar radiation and temperature can be used as input.



DESCRIPTION

This service provides indices that closely correlate to farmers losses and/or key yield reducing hazards that can be used as input to index insurance schemes

USE

- › Index insurances

INPUTS OF PRODUCTS

- › Precipitation
- › Vegetation index NDVI
- › Biomass production
- › Relative evapotranspiration
- › Air temperature
- › Soil moisture

SPATIAL RESOLUTION AND COVERAGE

Long-term time series with spatial resolution of 10-25km

BENEFITS

The elimination of loss verification costs and the potential for scaling up are the greatest benefits of using a pre-determined index based on EO information for the insurance of crop and livestock losses. Index insurance is one of the tools MDBs have to help stabilise income for smallholders when yields are affected by weather

DELIVERY FORMAT

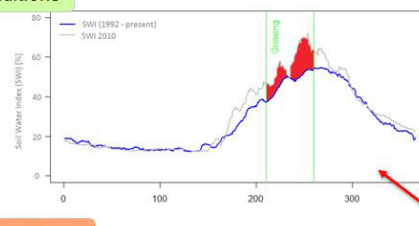
Depending on user needs, e.g.:

- › Vector and raster formats
- › Through a web portal
- › Statistics in tables and/or graphs

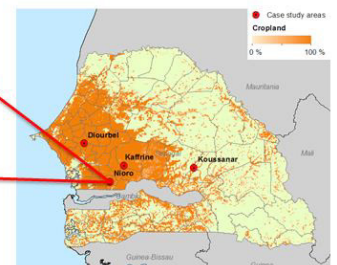
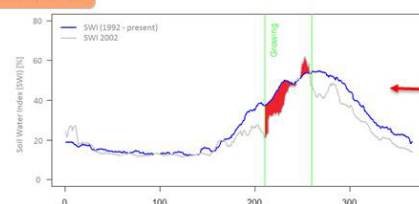
FREQUENCY

- › At end of season for index insurance purposes

Good conditions



Drought conditions



Example of a satellite soil moisture based index insurance indicator that can be related to payouts to farmers in Senegal (Source: GeoVille for IFAD)