



## **Comparative assessment of smallholder sustainability using an agricultural sustainability framework and a yield based index insurance: A case study**

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The concept of sustainability is central to smallholder agriculture as subsistence farming is constantly impacted by livelihood insecurity and is constrained by access to capital, water technology and alternative employment opportunities. This study compares two approaches which aim at quantifying smallholder sustainability but differ in their underlying principles, methodologies for assessment and reporting, and applications.

The yield index based insurance can protect the smallholder agriculture and help it to more economic sustainability because the income of smallholder depends on selling crops and this insurance scheme is based on crop yields. In this research, the trigger of this insurance sets on the basis of yields in previous years. The crop yields are calculated every year through socio-hydrology modeling and smallholder can get indemnity when crop yields are lower than average of previous five years (a crop failure).

The FAO Sustainability Assessment of Food and Agriculture (SAFA) is an inclusive and comprehensive framework for sustainability assessment in the food and agricultural sector. It follows the UN definition of the 4 dimensions of sustainability (good governance, environmental integrity, economic resilience and social well-being) and includes 21 themes and 58 sub-themes with a multi-indicator approach.

The direct sustainability corresponding to the FAO SAFA economic resilience dimension is compared with the indirect notion of sustainability derived from the yield based index insurance. A semi-synthetic comparison is conducted to understand the differences in the underlying principles, methodologies and application of the two approaches. Both approaches are applied to data from smallholder regions of Marathwada in Maharashtra (India) which experienced a severe rise in farmer suicides in the 2000s which has been attributed to a combination of socio-hydrological factors.