

# Combining participating insurance and financial policies: A new risk management instrument against natural disasters in agriculture

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## Purpose

The purpose of this paper is to examine a new insurance policy against natural disasters.

## Design/methodology/approach

The authors propose an optimisation model, which involves both the insurer and the farmer. The farmer decides to insure his farm if and only if insurance improves the utility he is expecting over a given year. Therefore, the paper takes the perspective of an insurer who wants to maximise the farmer's wealth, so that he will be more likely to subscribe the policy. The choice and combination of the policies are then determined and designed by the insurer to reach that aim.

## Findings

The paper proves that the market for insurance could grow with a combination of participating contracts and market-based instruments. The first cover individual risks while the second cover systematic risks.

## Practical implications

The new policy leads both the insurer to manage small and large risks and the insured to be financially interested. It also provides an optimal coverage against natural events for insured farmers.

## Originality/value

The paper offers many perspectives for the renewal of the crop insurance market using new instruments.

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**Keywords:** [United States of America](#), [Agriculture](#), [Crops](#), [Insurance](#), [Risk management](#), [Catastrophes](#), [Securitisation](#), [Crop insurance](#), [Participating policies](#), [Optimal hedging](#)

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