



Sowing in a risky climate

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CONTEXT



The experiment took place in the Bagoué region, in the north of Côte d'Ivoire. Agriculture, there, is almost exclusively rain-fed. Currently, a minority of farmers receive weather information. Information is mostly daily and general. Corn is one of the main crops and a staple food in the area (*ANADER experts*). It is particularly affected by dry spells during the rainy season. Climate change tends to increase the frequency and the impact of this phenomena.

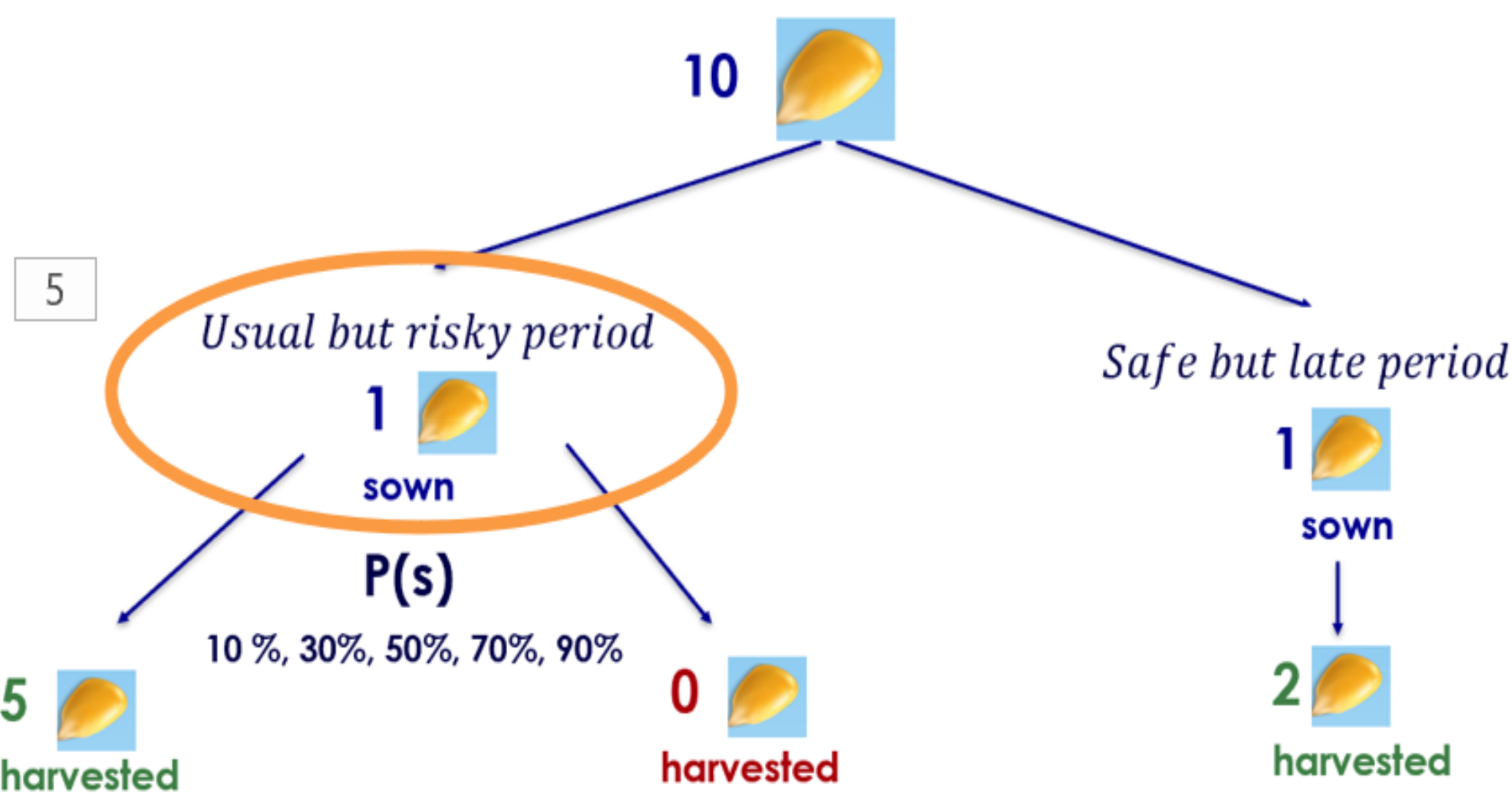
FARMERS' DEMAND FOR WEATHER INFORMATION	INFORMATION NEEDED	KEY RELATED QUESTIONS
Sowing (57%)	- Onset/offset of the rainy season - Rainy days / Dry spells	- When is the sowing window for this rainy season? - Could dry spells that damage my corn sowings occur this season and when ? Do I have to split/delay my sowings ?

THE EXPERIMENTAL GAME

How do farmers adjust their maize sowing decisions based on a dry spell probability?

What factors influence their decision-making?

REPRESENTING THE RISK OF DRY SPELLS



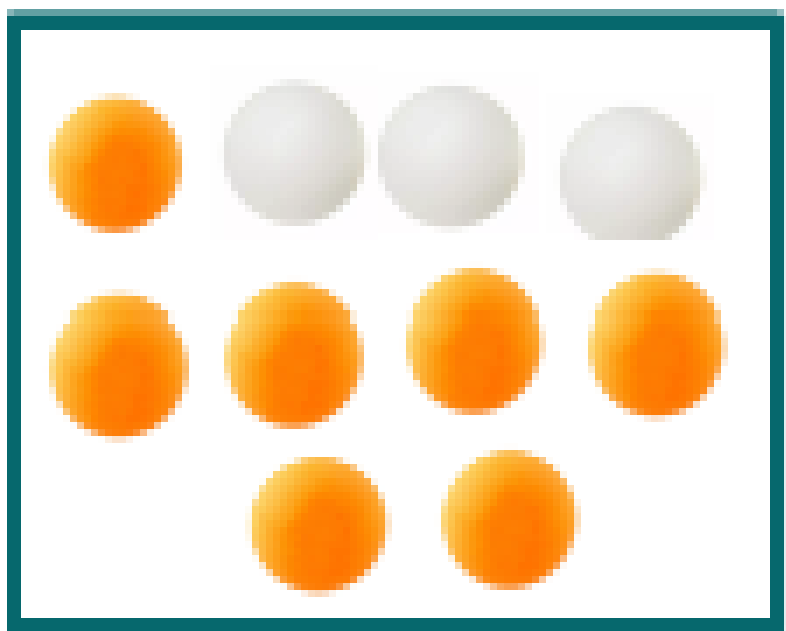
Farmers choose how many maize seeds they want to sow at their usual sowing period giving a dry spell probability $P(s)$ that would destroy the sowing if it occurs.



The rains continued normally



A dry spell occurred

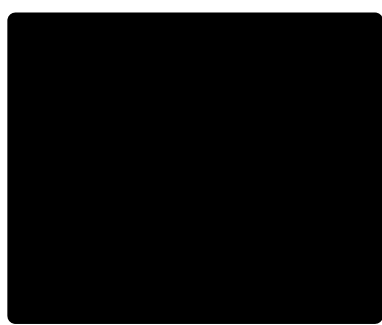


In this illustration, the box contains a 70% risk of dry spells



At your usual maize sowing time, considering the dry spell probability for this season, how many seeds would you choose to sow ?

TESTING FOR DIFFERENT SCENARIOS



No forecast :
The farmer does not know what is the risk level inside the box. It is the reference situation



- In each round, the interviewer randomly picks a dry spell forecast. He announces it to the farmer and puts the correspondent balls inside the transparent box. The farmer can see how many white and yellow balls there are inside the box.
- Each farmer plays randomly the 5 situations once. (round 1 -> 5). Then, each farmer plays randomly the 5 situations a second time. (round 6 -> 10) to see if he/she will react differently.
- Each round is a new season.
- The initial dotation is always 10 seeds at the beginning of each season and represents the all seeds he/she wants to sow this year.

KEY RESULTS

- Farmers adjust their sowing strategies to probabilistic weather information, and it consistently improves farmers' expected harvests in comparison to a situation without information (+13,9 % on average)
- However, even under very low probabilities of dry spells, many farmers remain cautious and do not fully allocate their seeds to the risky option.



Information on dry spell probability accounts for 57% of the variation in risky sowing decisions.

Not the only factor for decision-making...



Past season(s)



Psychological factors



Real life losses



Formal education



Household food security

RECOMMENDATIONS

- Using probability formats to communicate weather information to low-literate farmers
- Relevance of complementary instruments—such as climate insurance—to enhance the uptake and effectiveness of climate services.
 - Especially important for populations that depend heavily on rainfed agriculture for their food security
- Tailoring climate services to farmers' profiles to reach their full potential.

CONTACT

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