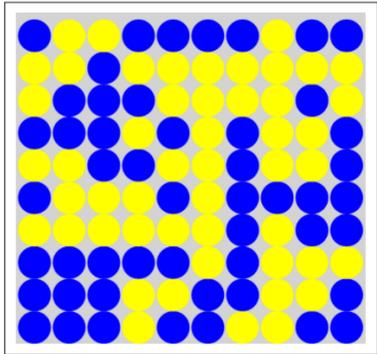


Rappel: Votre couleur gagnante est ●

Urne A : l'Urne contient exactement 50 boules jaunes et 50 boules bleues. Si la boule tirée au sort est jaune alors vous gagnez 20€ et 0€ dans le cas contraire.

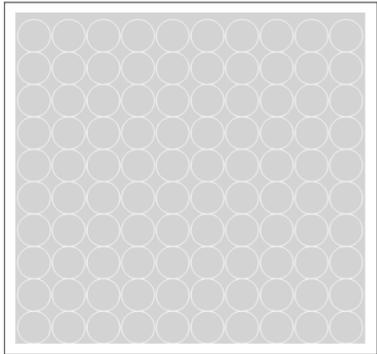
Urne B : l'Urne contient exactement 100 boules dont le nombre de boule(s) jaune(s) et bleue(s) vous est inconnu. Si la boule tirée au sort est jaune alors vous gagnez 20€ et 0€ dans le cas contraire.

Veuillez choisir entre l'Urne A et l'Urne B.



Gain de 20€ si ●
Gain de 0 € si ●

Urne A



Gain de 20€ si ●
Gain de 0 € si ●

Urne B

Cette illustration est une capture d'écran de l'expérience qui sera réalisée en 2022 auprès des propriétaires forestiers privés. Sur cet écran, l'urne A représente une situation risquée car la probabilité est connue (50 boules jaunes, 50 boules bleues) et l'outcome est connu également (20€ si une boule de la couleur gagnante est tirée). L'urne B représente une situation ambiguë où la probabilité n'est pas connue (il y a des boules jaunes et bleues mais les proportions sont inconnues), mais l'outcome oui (20€ si une boule de la couleur gagnante est tirée). En effectuant ces choix de loteries, les individus nous révèlent leurs attitudes face au risque et à l'ambiguïté. D'autres tâches complémentaires seront réalisées durant l'expérience permettant de quantifier les préférences face au risque et à l'ambiguïté des individus et d'estimer la valeur de l'information qui permet de réduire (voire supprimer) l'ambiguïté.

Impact of Information about climate change in Forest

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Work package: : WP4, Economics.

Context — Natural hazards represent the main threat to forests in the world. However, climate change has an impact on the characteristics of natural events, which creates uncertainty in the decision-making of private forest owners, in particular with regard to the frequency of disturbances. There is therefore a lack of clarity on the knowledge and quantification of the characteristics of natural hazards. These risks are often poorly understood by forest owners and their quantification remains uncertain at present. Consequently, forest owners must make their decisions in a context of uncertainty where the dangers are assessed and perceived subjectively, according to their knowledge but also according to the information provided to them. However, new information on the knowledge of these disturbances, improving quantification and reducing uncertainty, can arrive over time and modify the management decisions of forest owners.

Objectives — The project aims to study the role of uncertainty and the arrival of information on the decision-making of forest owners. The main research questions are: what is the impact of uncertainty on the management decisions of forest owners? What is the value of the information to reduce / eliminate this uncertainty?

Approaches — The process is in two stages. The first step is to propose a theoretical model of forest management under uncertainty that will explicitly consider the risk and ambiguity preferences of private forest owners. The current models are in a risky frame and it is therefore a question of providing an extension of them. We will focus on the owner's final harvest decision and the uncertainty about the probability of the natural hazard occurring, commonly referred to as "ambiguity" in decision theory. We will then compare the results in terms of risk and ambiguity and we will be able to deduce from this the effect of uncertainty on optimal management, as well as the value of information that would make it possible to move either from an ambiguous context to a risky context or reduce ambiguity. Secondly, the theoretical results will be tested experimentally. An experiment with a similar theme was carried out in 2021 as part of the FOR_UNCERTAINTY project funded by the University of Lorraine. It will be a question of starting again from this experience by focusing on the risk / ambiguity comparison (the 2021 experience envisaged more comparisons), by deepening the part dedicated to the value of information (which was considered quite briefly), by modifying the sample (private forest owners rather than students) and the mode of implementation (online rather than in an experimental laboratory).

Key results — The work is ongoing so we have no results to report yet. During the first year of the project, our thoughts were as follows:

- For the theoretical part, we think about the type of model (analytical vs numerical resolution), the forest growth model and the integration (or not) of the thinnings as well as the way to integrate the ambiguity from the most common theoretical frameworks in the literature (*Klibanoff, Mukerji, Seo and Stranca (2021) Foundations of ambiguity models under symmetry: α -MEU and smooth ambiguity. Journal of Economic Theory, 105202*). The challenge is to have a simple model to answer the main question (i.e., impact of uncertainty on management) and whose results can then be tested through an experiment.

- For the experimental part, our reflections focus on the contextualization (or not) of the experience, on how to implement it online and on its dissemination, because reaching French private forest owners is not easy. We envision a sample of between 50 and 100 owners. The experiment will be carried out with the help of Kene Boun My, CNRS research engineer at BETA, in charge of the Laboratory of Experimental Economics of Strasbourg (LEES). Contacts have been made and we are currently working on the experimental protocol. The experiment will be carried out during 2022.

Main conclusions including key points of discussion — As mentioned above, our reflections are ongoing and we do not yet have any significant results and main conclusions to provide.

Perspectives — The discussions we are currently having to carry out this project suggest two possible extensions: introduction of the insurance decision (in addition to the one already considered for classical management which relates to the final harvest date) and uncertainty about the amount of the damage (in addition to that already considered on the probability of occurrence of the hazard).

Valorization — We aim to write a scientific article including the theoretical model and its experimental test.

Leveraging effect of the project — This project allows for a collaboration between three researchers: Marielle Brunette, Stéphane Couture and Patrice Loisel. Without any doubt, this project will have a continuation.