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Designing an effective small farmers scheme in France

Pauline Lecole¹

Raphaële Préget²

Sophie Thoyer³ (corresponding author)

1 – pauline.lecole@supagro.fr, CEE-M, Univ. Montpellier, CNRS, INRAE, Institut Agro, Montpellier
France

2 – raphaele.preget@inrae.fr, CEE-M, Univ. Montpellier, CNRS, INRAE, Institut Agro, Montpellier
France

3. sophie.thoyer@inrae.fr, CEE-M, Univ. Montpellier, CNRS, INRAE, Institut Agro, Montpellier
France

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Abstract

The 2014 CAP introduced the Small Farmers Scheme (SFS), offering small farms the option of an unconditional annual lump-sum payment per farm replacing the standard first pillar direct payments. This paper assesses the acceptability in France of an extended version of the 2014 SFS for the post-2020 CAP: it includes conditions on farmers' environmental efforts and on salaried employment. The results of a discrete choice experiment conducted at the scale of France with 608 farmers receiving less than 15,000€ in first pillar payments show that an SFS with an environmental certification prerequisite is attractive to French small farmers, notably in the market gardening sector. We provide simulated

28 *results of the uptake rate and budgetary impacts of different SFS scenarii on the population of non-*
29 *retired French farmers based on the last agricultural census.*

30

31 Key words: CAP, small farms, Discrete choice experiments

32

33 JEL codes: Q18

34

35 **1. Introduction**

36

37 The post-2020 Common agricultural policy (CAP) is expected to be in place in January 2023. The nine
38 common objectives of the new CAP include environmental care, ensuring a viable income for European
39 farmers, promoting employment and local development in rural areas, and simplifying the CAP by
40 reducing bureaucracy for beneficiaries and administrative services. A new partnership between the EU
41 and its Member States is being proposed: it puts more emphasis on delivering results and less on
42 ensuring compliance with detailed rules set at the EU level. This so-called “new delivery model” is
43 founded on the requirement that each Member State draws up a National Strategic Plan based on a needs
44 assessment, mapping the CAP objectives it wants to address, describing its intervention strategy and
45 quantifying the results and impacts it intends to reach.

46

47 France published its assessment and prioritisation of needs in February 2020 after several months of
48 consultation with stakeholders and regional authorities. Several regions have pointed at the need to
49 rethink the system of per-hectare direct payments in order to increase the financial support provided to
50 farms with a high labour-to-land ratio and to small farms providing environmental services and local
51 food. This echoes a larger movement in France, initially launched by a farm union (Confédération
52 Paysanne, 2016) to defend the interests of a peasant agriculture model, based on small-scale, highly
53 innovative, agro-ecological farms. A number of environmental NGOs, both in France and at the

54 European level, argue that small farms can play a key role in accelerating Europe's agro-ecological
55 transition and must therefore be better taken into account in Europe's agricultural policies.

56
57 Scientific evidence on the small farm sector's contributions to sustainable development is sparse. The
58 literature indicates that small farms provide non-marketed public goods and services. They preserve
59 landscapes and biodiversity because they usually adopt more diversified production systems (Tisenkopfs
60 et al., 2020; Zasada, 2011). They also use less intensive techniques and substitute additional labour for
61 chemical inputs and land (Lecole, 2020; Birol et al., 2006; Schmitzberger et al., 2005; Potter et Lobley,
62 1993), thus displaying higher employment rates per unit of land and lower environmental impacts
63 (European Parliament, 2014). Public opinion has also expressed its growing distrust of intensive farming
64 systems and a desire for higher incomes for peasant farms (Ecorys, 2017).

65
66 The question of whether small farms should be better supported by the CAP (and, if so, how), has
67 hovered over previous reforms. The 2014 CAP marked a turning point by introducing the option for
68 Member States of a redistributive payment (corresponding to a higher per-hectare payment for the first
69 hectares of each farm) and a Small Farmers Scheme (SFS). The SFS was proposed by the Commission
70 as part of the CAP's simplification effort and as a way to facilitate CAP payment access to small farm-
71 holders. The principle was to replace all first pillar direct payments with a lump-sum payment to
72 voluntary farms, independent of their size, production or location. Its objective was mostly to
73 redistribute a small income to farmers (capped at 1,250€/farm/year) without obliging them to deal with
74 all the administrative burden and controls associated with CAP declaration and cross compliance
75 conditions (European Commission, 2016). Farmers join the scheme on a voluntary basis: it is governed
76 by a self-selection process since larger farms will prefer to maintain the more advantageous per-hectare
77 payment system. According to the European Court of Auditors (2016), the SFS has reduced the
78 administrative burden for small farmers in countries where the scheme was offered. The SFS was not
79 chosen by France but was activated by 14 other Member States including Germany, Italy, Portugal and
80 Romania (European Commission, 2017).

81

82 The reasons why France did not activate the SFS in 2014 have not been publicly disclosed but it is clear
83 that the 1,250€ cap on the lump-sum payment would have only allowed enrolment by the smallest of
84 the small farms, mostly part-time or retired farmers, whose contribution to public goods is uncertain
85 (Lécole, 2017; Geniaux et al., 2010; Knowler and Bradshaw, 2007; Schmitzberger et al., 2005).
86 However, the post-2020 framework allows Member States to adjust their strategy and policy instruments
87 in order to attain their stated objectives. The trilogues between the European Parliament, the European
88 Commission and the Council of Agricultural Ministers that took place in the summer of 2021 seem to
89 be moving towards an application of the SFS that is Member-state specific. As of August 2021, the
90 national strategic plans are not finalized. The final choices of Member States in terms of SFS application
91 rules, including those of France, are not known yet.

92

93 An SFS with additional conditions and higher payments (henceforth SFS+) is a policy instrument
94 deserving of attention: if well-designed, it can help to maintain or enhance the income of small-scale
95 farmers and encourage them to engage in an environmental certification and to create wage jobs. This
96 could contribute to the attainment of the French government's agro-ecological objectives.

97

98 The scientific objective of this paper is to measure the willingness of small French farmers to join an
99 SFS+ for the post 2020 CAP and to measure in monetary terms their relative preference or aversion for
100 attached conditions on environment and employment. For this purpose, a Discrete Choice Experiment
101 (DCE) was designed with the policy objective to provide guidance to French policy-makers designing
102 the CAP National Strategic Plan on the feasibility and costs of such a scheme, as well as on the type of
103 small farmers, who would be interested in enrolling.

104

105 We show that an SFS+ should stipulate an environmental practice as a condition of eligibility. Indeed,
106 many farmers indicate that they prefer an SFS+ imposing an environmental condition. Even farmers
107 who do not currently meet the environmental condition presented in our DCE indicate that they would
108 be prepared to meet it. On the contrary, adding an employment condition is not popular, as this could be
109 quite constraining for some farmers, who would require a much higher lump-sum payment to agree to

110 it. Finally, although it would be desirable to prevent farmers from switching from one system to another
111 every year, it could be quite costly to require them to commit to the SFS+ for four years.

112 Section 2 describes the methodology. Section 3 presents the surveyed sample and essential descriptive
113 statistics, Section 4 provides an econometric analysis of the results and Section 5 proposes policy
114 simulations on the population of all non-retired French farmers. In Section 6 we discuss some results
115 and make policy recommendations. Section 7 concludes.

116

117 **2. Methodology: Discrete Choice Experiment**

118

119 A Discrete Choice Experiment (DCE) is a stated-preference method used to assess individuals'
120 preferences in hypothetical situations (Louviere et al., 2000). The DCE approach is a well-established
121 methodology in economics, in line with Lancaster's theory of consumer choice (Lancaster, 1966). Since
122 the seminal work by Ruto and Garrod (2009), this methodology has been widely used to study farmers'
123 preferences regarding agri-environmental contract characteristics. Its interests and limits are not detailed
124 here but can be found for example in Hanley et al, (1998) or Colen et al., (2015). We conduct a DCE to
125 estimate ex-ante the values that farmers place on specific characteristics of different SFS+, henceforth
126 called 'programmes'. Our DCE describes these programmes in terms of a number of characteristics or
127 'attributes'. The extent to which a farmer values a programme is expected to vary as a function of the
128 'levels' of the attributes. The DCE method allows us to explore the relative importance to a farmer of
129 each attribute of the programme, that may influence his decision to switch to an SFS+.

130 Section 2.1 describes the attributes and their associated levels. Section 2.2 presents the experimental
131 design. The econometric modelling of farmers' choices is described in Section 2.3.

132

133 ***2.1 Attributes and levels***

134

135 Our DCE was pre-tested with 10 targeted interviews of farmers from different parts of France and with
136 a face-to-face pilot study of 30 respondents. This process allowed us to adjust and improve the survey,
137 as recommended in Henscher et al., (2015).

138
139 There are different versions/programmes of the SFS+, which we want to test. Each programme is
140 characterised by four attributes summarised in Table 1. The first three attributes describe conditions to
141 qualify for the SFS+: an environmental condition, an employment condition and a commitment
142 condition. The fourth attribute is the monetary attribute of our DCE. This is an annual lump-sum
143 payment independent of the size of the farm, its type of production or its location. It replaces all first
144 pillar direct payments that the farmer could get. However, the farmer can still get the second pillar
145 payments in addition to the lump-sum payment of the chosen programme.

146
147 The objective of the environmental condition is to guarantee that only farmers making a certified effort
148 toward more environmentally-friendly agricultural practices are eligible for the programme. There are
149 only two levels for this attribute. Level 0 indicates that the programme does not include any
150 environmental condition, just like the CAP 2014 SFS. For Level 1, only farmers who have an
151 environmental certification recognised by the French Ministry of Agriculture are eligible. Eligible
152 environmental certifications include Organic Farming and High Natural Value certifications as well as
153 other regional certifications (officially recognised by the French Ministry of Agriculture) covering
154 different types of production systems. These certifications are quite heterogeneous in terms of their
155 environmental requirements, with the organic farming label by far the most demanding one. It may be
156 considered unfair to equally reward labels that do not require similar levels of environmental effort.
157 Indeed, the purpose of imposing an environmental condition is to create a dynamic in favour of more
158 agro-ecological practices, not to reward environmental benefits per se. We want to encourage farmers
159 to engage in a process of certified environmental improvement, even if it is not very demanding. We
160 have chosen to include only certificates recognised by the French Ministry of Agriculture in order to
161 reduce red tape and because they are easy to control, since farmers will only need to present their
162 certificate to prove that they meet the environmental condition (Level 1). As meeting this condition

163 presents an additional constraint, we expect a negative impact of the environmental condition (Level 1)
164 on the probability of a farmer choosing the programme.

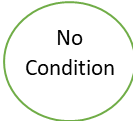






165

166 The objective of the employment attribute is to guarantee that only farmers who create or maintain paid
167 jobs (even if only part-time) on their farm are eligible for the programme. There are three levels of this
168 employment attribute. The “no employment” condition is Level 0 and corresponds to the 2014 SFS.
169 Level 1 corresponds to a “low” level employment condition requiring that farmers employ at least the
170 equivalent of two full months per year of either permanent or temporary staff. The two full month
171 minimum can be reached by adding up several short-term contracts of different workers. The objective
172 is to encourage farmers who need a labour force on a seasonal basis to recruit instead of overworking
173 themselves and/or their spouse or other family members. Level 2 carries a “high” level employment
174 condition, which requires that permanent employment on the farm reach at least the annual equivalent
175 of 30% of a full-time position. This is a way to encourage permanent hiring, including of family-based
176 labour. We expect a negative sign for both the low and high employment condition parameters (Levels
177 1 and 2) since they represent constraints. Of course, we expect the high employment condition (Level
178 2) to have a stronger negative impact than the low employment condition (Level 1).

179

180

Table 1 : Description of the attributes and their levels

Attributes	Levels	
Environmental condition (<i>envir</i>)	 No Condition	<u>Level 0:</u> No environmental condition attached No control
		<u>Level 1:</u> Farmers must be certified with a sustainable farming label registered by the Ministry of Agriculture: several exist, by far the most demanding and well-known of which is the organic farming label
Employment condition (<i>empllo</i>) (<i>emplhi</i>)	 No Condition	<u>Level 0:</u> No employment condition No control
	 ≥ 2 months cumulated	<u>Level 1 (low):</u> Salaried employment on the farm must be the equivalent of at least 2 full-months per year (on a temporary or permanent basis)
	 Permanent ≥ One-third of time	<u>Level 2 (high):</u> Salaried permanent employment must reach at least the equivalent of one third of a full-time position
Commitment condition (<i>4years</i>)	 Annual commitment	<u>Level 0:</u> The enrolment is annual. The farmer can return to the usual CAP support system the following year
	4 years 	<u>Level 1:</u> The enrolment in the programme is for a minimum of 4 years
Lump-sum payment	€/year	1,250; 3,000; 5,000; 7,000

181

182

183 The commitment attribute has two levels. Level 0 corresponds to the standard annual commitment as it
184 existed in the CAP 2014 SFS. At the end of each payment year, the farmer can return to the usual CAP
185 support system and receive first pillar direct payments. In Level 1, enrolment in the SFS+ is for 4 years
186 and the farmer cannot return to the usual CAP support system before the end of the 4-year commitment.
187 The advantage of requiring a 4-year commitment from the viewpoint of the administration is that it
188 prevents farmers from making opportunistic changes from one system to another, which creates an
189 administrative burden and additional costs. Thus, it might be beneficial for CAP payment agencies to
190 impose this condition. Yet farmers could see such a condition either as a constraint or as an advantage.
191 Indeed, such a condition entails a two-way commitment: European authorities also commit to
192 maintaining the programme (and providing the lump-sum payment) for 4 years. The advantage for a
193 farmer of being registered for 4 years is that he will receive a guaranteed known payment for 4 years
194 (provided he/she meets the other condition of the programme). However, farmers may be reluctant to
195 commit to a programme for 4 years, especially if they plan to increase their eligible area and/or livestock,
196 and thus, to be eligible for higher first pillar direct payments in the coming years. We are therefore
197 uncertain as to the sign of the parameter of this attribute. Some farmers may be willing to forego part of
198 their lump-sum payment in order to participate in a guaranteed 4-year programme, whereas others may
199 require a higher lump-sum payment to commit to such a programme.

200

201 Regardless of the commitment (annual or 4-year), if a farmer does not meet the conditions of the
202 programme in a given year, he is warned that he will only receive a base payment set at 1,000€ for that
203 year. If the farmer meets the programme conditions during the following year, then he will again be
204 eligible to receive the programme's full lump-sum payment.

205

206 In accordance with feedback received in the preliminary interviews, we set 4 different levels of annual
207 lump-sum payments for the monetary attribute (€/year): 1,250€; 3,000€; 5,000€; 7,000€. The lowest
208 level (1,250€/year) corresponds to the 2014 SFS lump-sum payment. In our DCE, this amount is only
209 associated with programmes that impose no environmental or employment condition on eligibility.
210 Thanks to this monetary attribute, it is possible to determine a farmer's willingness to accept (WTA) for

211 a given programme. The marginal WTA for a given attribute is defined here as the minimum monetary
212 value that would be required to compensate for a unit change in the level of that attribute.

213

214 *2.2 Experimental design*

215

216 The different combinations of the attribute levels make up the set of possible programmes (called
217 alternatives). The 2014 SFS corresponds to the alternative with no environmental condition (Level 0),
218 no employment condition (Level 0), an annual enrolment (Level 0) and a lump-sum payment of
219 1,250€/year. We call this special alternative “programme 0”.

220

221 The different alternatives are grouped into choice cards, and different choice cards are successively
222 presented to the farmers. Farmers are invited to choose their preferred programme from the alternatives
223 proposed on the choice card. If none of the programmes is suitable for them, they can choose the status
224 quo, i.e., their current situation (which corresponds to the first pillar direct payments, if they receive
225 them). As shown in Figure 1, our choice cards include four options: first the 2014 SFS alternative
226 (programme 0), then two different SFS+ alternatives that vary on each choice card in terms of attribute
227 levels (programme A and programme B), and finally the farmer’s status quo option, shown on the right
228 hand side and identified by the sentence, “I prefer to remain in my current situation”.

229

230 Note that in this DCE, the status quo option varies from one respondent to another. Indeed, each farmer
231 in our sample gets a first pillar payment which varies from 0 € (for those who do not get any payments)
232 to 15,000€ (see justifications in Section 3.1). In addition, we take into account the fact that some farmers
233 may already meet one or both of the programme conditions (environmental and/or employment), when
234 coding the status quo.










235

236 There are two reasons why we included programme 0 on each choice card. Firstly, we were particularly
237 interested in this special programme corresponding to the 2014 SFS since it is open in some European
238 countries but not in France. Secondly, programme 0 is present on all choice cards for a strategic reason.

239 If it was not proposed on each choice card, a respondent interested in an SFS+ but who knows that he
240 or she will not respect the conditions could be led to choose programme A or B to receive at least 1,000€
241 without meeting any condition (except perhaps the commitment condition). Our data would then be of
242 a lesser quality.
243

244

Figure 1: Example of a choice card

	Program 0	Program A	Program B	
Environmental condition				I prefer to remain in my current situation
Employment condition				
Commitment condition				
Lump sum payment	1250€/year	5000€/year	7000€/year	3600€/year

245

246

247 We used ©NGene to build an efficient fractional design (by selecting priors on the signs of attribute
 248 parameters, based on our pilot study with 30 respondents). Our design minimizing the D-error is
 249 composed of three blocks of eight choice cards. The respondents were assigned randomly to one of the
 250 three blocks and had to fill out eight choice cards. The order of the choice cards presented to each
 251 respondent was randomized.

252

253 **2.3 Model specification**

254

255 The random utility theory provides the microeconomic basis for discrete choice experiments. The
 256 indirect utility (U_{nit}) a farmer n obtains from choosing an alternative i in choice card t , is made of an
 257 observed component (V_{nit}), the deterministic part of the utility, and a random (unobserved) component
 258 (ε_{nit}), a stochastic error term, such that:

259

$$U_{nit} = V_{nit} + \varepsilon_{nit}$$

260

261 Farmers choose the alternative providing the highest expected utility for them. Thus, the probability that
 262 farmer n will choose alternative i over all other alternatives j on choice card t can be expressed as:

263

$$P_{nit} = \text{Prob}(V_{nit} + \varepsilon_{nit} > V_{njt} + \varepsilon_{njt}) \forall j \neq i$$

264

265 The conditional logit model is widely used to estimate parameters from the DCE. However, this model
 266 assumes the independence of irrelevant alternatives (IIA) and the homogeneity of all the attribute
 267 coefficients across the respondents. To relax this assumption and allow for preference heterogeneity
 268 across farmers, we use the mixed logit (ML) model (McFadden et al., 2000).¹ The ML model allows us
 269 to estimate an individual-specific β -coefficient. The utility that farmer n obtains from choosing
 270 alternative i in choice card t can be written as:

271

$$U_{nit} = \beta_n \mathbf{X}_{nit} + \varepsilon_{nit}$$

¹ The conditional logit estimation and the Hausman test conducted on our data justify the choice of the mixed logit model. Results are available upon request.

272
 273 where \mathbf{X}_{nit} refers to the vector of the attribute levels and β_n represents their associated marginal utility
 274 for each farmer n . The error term ε_{nit} is assumed to follow an extreme value type 1 distribution
 275 (Gumbell-distribution) and observed choices are analyzed to estimate the coefficients. Vector \mathbf{X}_{nit} can
 276 also include different alternative specific constants (ASCs). For example, in the following estimations
 277 we consider the ASC dummy variable ASC_{prog0} , which takes the value “1” in the programme 0
 278 alternative, and “0” otherwise, but also the ASC dummy variable ASC_{AB} , which takes the value “1” in
 279 the programme A and B alternatives, and “0” otherwise. A statistically significant positive coefficient
 280 associated with one of these ASC dummy variables indicates a preference for the designed alternative(s).

281
 282 In our DCE, the monetary attribute is the amount of the lump-sum payment given to the farmer for
 283 enrolling in the programme, so the farmers’ average marginal willingness to accept (WTA) for attribute
 284 x is given by:

$$WTA_x = \frac{-\beta_x}{\beta_{payment}}$$

285
 286 where β_x and $\beta_{payment}$ are the mean parameters associated with attribute x and the lump-sum payment
 287 attribute, respectively.

288

289 **3. Survey and data**

290

291 *3.1 Questionnaire structure and survey dissemination*

292

293 We designed an online questionnaire (with the software ©LimeSurvey) targeting farmers receiving
 294 payments between 0€ and 15,000€ from the first pillar. The questionnaire was divided into three parts.
 295 The first part gathered information on CAP direct payments received by respondents and on their current
 296 situation regarding environmental certification and employment statistics. Farmers declaring first pillar
 297 direct payments above 15,000€ were invited to quit the survey. Indeed, we made the assumption that no
 298 farmer getting more than 15,000€ would be willing to trade his current situation for an extended small

299 farmers scheme offering a maximum lump-sum payment of 7,000€, even with promises of less
300 administrative work and no conditionality.

301
302 The second part of the survey was dedicated to the choice experiment questionnaire, which consisted of
303 eight choice cards presented to respondents. The presentation of attributes to respondents was done step-
304 by-step and also included questions on their present situation regarding their compliance or non-
305 compliance with the conditions presented in the environmental and employment attributes. The last part
306 of the survey included follow-up questions to identify protest answers, as well as questions on the social
307 and economic status of respondents. The socioeconomic questions (age, education level and department)
308 are mostly used to test the representativity of our sample, in relation to the entire French population of
309 farmers receiving less than 15,000€ in first pillar direct payments. These variables are also useful to
310 check whether certain contract preferences are linked to farmers' individual characteristics.

311
312 The first part of the questionnaire is essential in order to properly define the status quo. Indeed, we need
313 to know how much each respondent receives from the first pillar to calibrate his status quo situation.
314 For those declaring no CAP direct payments whatsoever, the monetary attribute value of their status quo
315 was set to zero. For those who declared that they received CAP direct payments but were not able to
316 state the exact amount received from the first pillar², we proposed that they identify the value range
317 within which they believed their first pillar CAP direct payments to be. For respondents who were unable
318 to state the range of payments, we included in the survey a series of questions on land use, types of
319 production, herd size, and young farmer status and used an integrated algorithm to roughly estimate the
320 corresponding first pillar direct payment. This information was then returned to respondents, "We've
321 estimated your first pillar direct payment amounts to be approximately "X€". All choice cards were
322 customized so as to clearly indicate the amount received by the respondent in the status quo situation.

² From our preliminary interviews, it has become clear that many small farmers have only a rough idea of the difference between first pillar and second pillar payments and, since payments are made in two annual installments, they are not fully aware of the amounts they've received.

323
324 The survey was distributed to French farmers by e-mail between March and July 2020, through various
325 channels: we contacted farmers' associations (such as the AMAP network³, mainly dedicated to the
326 small farm sector) and two national farm unions (*Confédération Paysanne*, member of Via Campesina,
327 and *Jeunes Agriculteurs*), with a short explanatory text to present the survey and indicate that it was
328 aimed at farmers receiving less than 15,000€ in first pillar direct payments. The survey was also
329 advertised in specialised journals for farmers such as "*La France Agricole*".

330

331 *3.2 Characteristics of the sample*

332

333 More than 1,000 farmers began responding to our online questionnaire and 617 respondents completed
334 the eight choice cards. 80 respondents always chose the status quo. Out of those 80 respondents, we
335 eliminated four of them because they indicated that they had not understood the proposed choices, and
336 five of them as "protest no's", since they justified their choices in the follow-up question by indicating
337 that they did not wish to get payments from the CAP, whatever the amount proposed, or because they
338 rejected the principle of a small farmers scheme. Our final sample consists therefore of 608 respondents
339 from all regions of France, of which only 2% are retired farmers. The socio-economic and production
340 characteristics of our sample are different in proportion to what can be inferred of the population of
341 French farms receiving less than 15,000€ of direct payments (excluding retired farmers). The
342 comparison is made difficult by the absence of up-to-date data on small farms in French statistics. The
343 latest agricultural census dates back to 2010 and the annual FADN survey does not include farms with
344 a standard output that is less than 25,000€ per year. As

³ <http://www.reseau-amap.org/amap.php>

345 Table 2 indicates, the most flagrant bias is an over-representation in our sample of organic farms, young
346 farmers, and market gardeners.
347

348 *Table 2 : Descriptive statistics of French farms with first pillar direct payments of less than 15,000€*

French farms with first pillar direct payments < 15,000€	Our sample: 608 farmers	2010 agricultural census*: 222,398 farmers
Total utilised area /farm	17 ha (26.8)	19 ha (17.9)
Direct aid /farm	2,700€ (3,932)	4,600€ (4,715)
Organic farms	81%	9%
Market gardeners	39%	6%
Fruit orchards and vineyards	20%	30%
Breeders	35%	45%
Crop farms	6%	20%
Age < 40 years	41%	20%
% of farmers with higher education	75%	29%
% of farmers working full time	79%	53%

349 **Figures and percentages are calculated on the basis of the 2010 census, excluding retired farmers. Direct*
350 *payments are estimated with the algorithm used in our survey (2014 CAP rules for direct payment calculation)*
351 *but with 2010 production and surface data. Standard deviations are in brackets.*

352

353 Intuitively, we expect that respondents' choices can be explained for the most part by their status quo
354 situation: the amount of direct payments received in their current situation, and whether or not they
355 already meet the environmental and employment conditions stipulated. Table 3 summarises the number
356 (and %) of respondents fulfilling the conditions for various ranges of status quo direct payments. We
357 consider four subsamples regarding this variable: farmers who do not receive any first pillar payments
358 (35% of our respondents), farmers who receive less than 1,250€ in first pillar direct payments (24%),
359 farmers who receive between 1,250€ and 7,000€ (25%) and finally farmers who receive more than
360 7,000€ in first pillar direct payments (16%). We have excluded farmers who receive more than 15,000€
361 in first pillar direct payments. The first threshold of 1,250€ corresponds to the programme 0's lump-
362 sum payment, and the second threshold corresponds to the highest lump-sum payment proposed in our
363 DCE.

364

365 Table 3 can be compared to

366 Table 4 showing the percentage for the overall population of French farms receiving less than 15,000€
367 in first pillar direct support (excluding retired farmers). The 2010 French agricultural census does not
368 include information on CAP payments, so we estimated the first pillar direct payment of each farmer
369 using the same algorithm as in our survey.

370

371 *Table 3: Number (and %) of respondents fulfilling the conditions according to status quo first pillar payments*

Range of first pillar direct payments in euros (status quo)	0	]0; 1,250]	]1,250; 7,000]	]7,000; 15,000]	Total
No condition fulfilled	31	11	13	17	72 (12%)
Environmental condition fulfilled (only)	132	85	81	33	331 (54 %)
Low employment condition fulfilled (only)	4	1	5	4	14 (2 %)
Low and high employment conditions fulfilled (only)	4	1	2	4	11 (2 %)
Environmental and low employment conditions fulfilled (only)	20	23	24	17	84 (14 %)
Environmental condition and both employment conditions (low and high) fulfilled	22	27	25	22	96 (16 %)
TOTAL	213 (35 %)	148 (24%)	150 (25%)	97 (16%)	608

372

373 The comparison shows that the proportion of French farms that do not fulfil any conditions is very high
374 compared to our sample (70% against 12%). However, note that the proportion of 70% is overestimated,
375 due to the fact that only the organic label certification is registered in the census. We cannot identify the
376 number of French farmers having other environmental certifications. Consequently, the proportion of
377 farms complying with the environmental condition is much higher in our sample (54%) than in the
378 overall population (6%). The comparison also shows that employment conditions are proportionally
379 more frequently met in the overall farm population (8% and 12%) than in our sample (2% and 2%).
380

381 *Table 4: Estimation of the number (and %) of non-retired farmers fulfilling the conditions according to first pillar payments*
 382 *(data from the 2010 agricultural census, first payment calculations made with 2014 CAP rules)*

Range of first pillar direct payments in euros (status quo)	0	]0; 1,250]	]1,250; 7,000]	]7,000; 15,000]	Total
No condition fulfilled	17,022	34,813	54,320	50,339	156,494 (70%)
Environmental condition fulfilled (only)*	1,120	3,081	4,696	3,979	12,876 (6%)
Low employment condition fulfilled (only)	4,396	3,840	5,026	4,770	18,032 (8%)
Low and High employment condition fulfilled (only)	7,706	6,278	6,956	6,007	26,947 (12%)
Environmental and low employment conditions fulfilled (only)	516	822	1,038	661	3,037 (1%)
Environmental condition and both employment conditions (low and high) fulfilled	1,361	1,270	1,468	913	5,012 (2%)
TOTAL	32,121 (14%)	50,104 (23%)	73,504 (33%)	66,669 (30%)	222,398

383 **The environmental condition concerns organic farming only. Other environmental certifications are not*
 384 *available in the agricultural census.*

385

386 **4. Results**

387

388 *4.1 Mixed logit results*

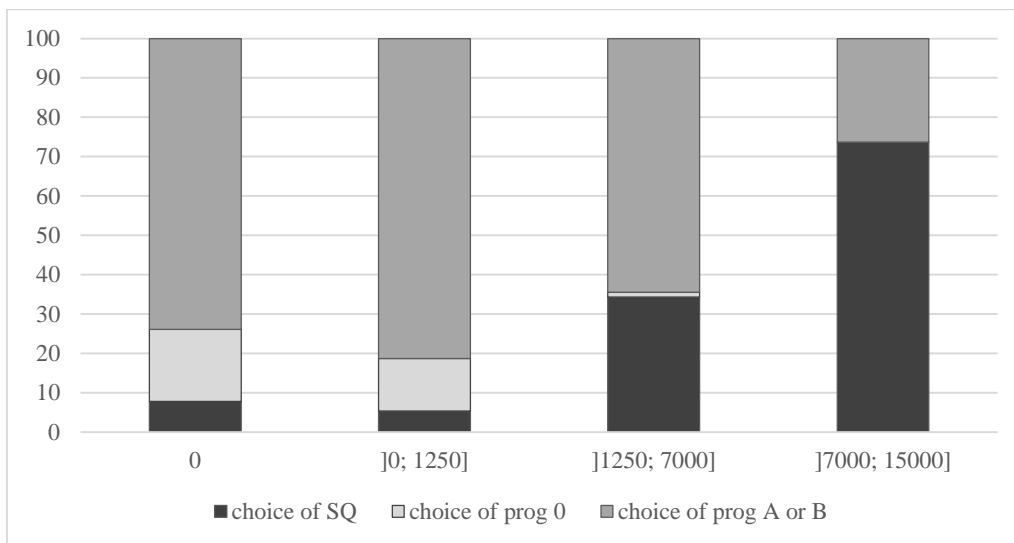
389

390 We expect that, when asked to choose between 2014 SFS option (programme 0), SFS+ options
391 (programmes A or B) and their status quo situation (SQ), respondents will first compare the amount of
392 CAP support they receive currently, with the amounts proposed in the experiment. Figure 2 shows
393 respondents' choices according to their status quo first pillar direct payments.

394

395

Figure 2: Respondents' choices according to first-pillar payments



396

397

398 What we observe in Figure 2 is logical and reassuring. Programme 0 is almost exclusively chosen by
399 farmers who receive less than 1,250€ in their status quo situation. We also see that the proportion of
400 respondents who choose to remain in the status quo increases as their status quo payments increase. It
401 should be noted that even farmers who currently receive more than 7,000€ sometimes choose (25% of
402 the responses on average) one of the two SFS+ (programme A or B). This shows that at least some
403 farmers would be willing to enrol in a simplified payment system with lower payments than their status
404 quo payments. This is a first indication of farmers' preferences for a simplified lump-sum system.

405
406 As explained in Section 2.3, we use a mixed logit model to take into account farmers' heterogeneity of
407 preferences. In Table 5, we present the mixed logit estimations for three specifications, each estimated
408 on the whole sample: 608 farmers who have responded to eight choice cards with four alternatives
409 resulted in 19,456 observations ($608 \times 8 \times 4$). The first specification (ML) includes no alternative specific
410 constant (ASC). However, it is preferable to include an ASC to capture potential characteristics of the
411 proposed programmes (0, A and B) which are not included in the attributes of the DCE but which may
412 also weigh in the decisions to choose those alternatives rather than the status quo option. We add such
413 a dummy (*ASC_0AB*) in the second model (ML_0AB). This ASC is equal to 1 for the three alternatives
414 corresponding to programmes 0, A or B, and is equal to 0 for the status quo option. As we can see from
415 Table 5, the coefficient associated to the dummy *ASC_0AB* is positive and highly significant, which
416 means that on average farmers have a preference for the lump-sum payment programmes (0, A or B).

417
418 The ML_0AB specification is not entirely satisfying since programme 0 is a special programme in this
419 choice experiment. First, it corresponds to the 2014 SFS with no conditions attached and with a relatively
420 low lump-sum payment (1,250€). Second, programme 0 is a fixed alternative presented on each choice
421 card. Therefore, in the last specification we choose to keep the reference to the status quo, but the ASC
422 referring to the programmes is broken down by distinguishing an ASC for programme 0 (*ASC_prog0*)
423 and an ASC for the SFS+, i.e., for programmes A and B (*ASC_AB*). *ASC_prog0* is equal to 1 for the
424 programme 0 alternative and 0 in all other cases. *ASC_AB* is equal to 1 for programmes A and B, and 0
425 both for programme 0 and for the status quo option. With this specification, we show that on average,

426 farmers prefer their status quo to programme 0: the coefficient associated to *ASC_prog0* is negative and
427 significant at 5%. However, we will show later in our analysis by sub samples that this result is not
428 robust. There is strong heterogeneity on this dummy across the respondents. The positive impact of the
429 *ASC_0AB* in the ML_0AB estimation is mainly due to a strong positive preference for programmes A
430 and B: the coefficient associated to *ASC_AB* in ML_0_AB is positive and significant at 1%. In the rest
431 of the paper, we will keep this last model (ML_0_AB) as our best specification for this DCE.

432
433 Regarding the results on attribute levels, Table 5 shows stable qualitative results across the different
434 specifications. All the coefficients are significant at 1%. As expected, the sign associated to the lump-
435 sum payment is positive. To obtain a bigger coefficient we have converted the variable payment in k€
436 (*kpayment*). The probability of a farmer choosing an alternative increases as payment increases.

437
438 The most striking result is the positive sign of the coefficient associated to the environmental attribute
439 (*envir*). Programmes which include the environmental condition are preferred on average to
440 programmes with no environmental condition. This somehow surprising result is essentially due to our
441 particular sample. Indeed, as seen in Section 3, 81% of the respondents are organic farmers and 84%
442 already fulfil the environmental condition. We could have expected farmers who already fulfil the
443 environmental condition to choose to overlook this attribute (this would have led to a coefficient not
444 significantly different from zero) but they actually do take it into consideration and their choices indicate
445 their strong preference for programmes which impose the environmental condition to all farmers
446 entering an SFS+.

447 For the employment attribute, the coefficients associated with the low and high employment conditions,
448 *empllo* and *emplhi*, respectively, are both negative, and the coefficient for the low level condition is
449 lower than the coefficient for the high level condition (the most demanding level), the reference level
450 having no employment condition. This is in line with what we expected.

451 Finally, Table 5 shows that, on average, farmers dislike the 4-year commitment (*4years*).

452 The lower part of Table 5 shows that the standard deviation of the mean coefficients are all significant,
453 which means there is a large heterogeneity across respondents for all the attributes.

Table 5: Mixed logit results

	(1)	(2)	(3)
	ML	ML_0AB	ML_0_AB
Mean coefficients			
<i>kpayment</i>	0.676*** (0.0191)	0.737*** (0.0255)	0.641*** (0.0250)
<i>envir</i>	1.345*** (0.125)	2.004*** (0.151)	1.793*** (0.129)
<i>empllo</i>	-1.091*** (0.159)	-1.455*** (0.173)	-1.489*** (0.155)
<i>emplhi</i>	-2.381*** (0.168)	-2.797*** (0.188)	-2.629*** (0.166)
<i>4years</i>	-0.382*** (0.0868)	-0.783*** (0.0938)	-0.732*** (0.0816)
<i>ASC_prog0</i>			-0.621** (0.287)
<i>ASC_AB</i>			1.976*** (0.191)
<i>ASC_0AB</i>		2.756*** (0.241)	
S.D. of mean coefficients			
<i>envir</i>	2.434*** (0.133)	2.739*** (0.155)	2.096*** (0.140)
<i>empllo</i>	3.190*** (0.185)	2.957*** (0.187)	2.624*** (0.227)
<i>emplhi</i>	2.873*** (0.190)	3.074*** (0.195)	2.467*** (0.163)
<i>4years</i>	1.361*** (0.113)	1.229*** (0.120)	0.844*** (0.129)
<i>ASC_prog0</i>			3.210*** (0.295)
<i>ASC_AB</i>			2.965*** (0.174)
<i>ASC_0AB</i>		4.081*** (0.259)	
Observations	19,456	19,456	19,456
Nb. of farmers	608	608	608

*** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses

457 ***4.2 Analysis of willingness to accept (WTA)***

458

459 As explained in Section 2, we use the estimated coefficient of the monetary attribute to compute the

460 average marginal WTA for the different attribute levels. The mean and the 95% confidence of the WTA

461 shown in

462 Table 6 are calculated from the ML_0_AB results of Table 5.

463

464 *Table 6: Average marginal willingness to accept (WTA) of the 608 farmers in our sample*

	<i>envir</i>	<i>empllo</i>	<i>emplhi</i>	<i>4years</i>
Mean WTA (€)	-2,799	2,323	4,103	1,142
Lower confidence limit	-3,193	1,852	3,628	901
Upper confidence limit	-2,404	2,794	4,578	1,383

465

466

467 All the WTA amounts in Table 6 are significantly different from zero at a 95% confidence level. Across
468 the whole sample, we find that, on average, respondents would be willing to pay 2,799€ (or equivalently
469 willing to forgo 2,799€ per farm, per year) to join a programme that imposes the environmental
470 condition, rather than an equivalent programme without the environmental condition. Remember that
471 this counter-intuitive result mainly comes from the large proportion of respondents who already fulfil
472 the environmental condition. On the contrary, farmers require 2,323€ (resp. 4,103€) to agree to enrol in
473 a programme with a low-level (resp. high-level) employment condition. As seen previously, farmers do
474 not like the commitment condition. They want to receive an extra 1,142€, on average, to commit to a 4-
475 year programme instead of a programme based on a standard annual commitment.

476

477 *4.3 Analysis of the heterogeneity*

478

479 Many socio demographic variables may explain some of the heterogeneity of farmers' preferences for
480 a simplified lump-sum payment system: age, education, type of production, location, etc. We have
481 conducted several estimations to test the impact of these variables. As it is not easy to interpret
482 interaction term parameters in mixed logit models (Ai and Norton, 2003), we conduct estimations on
483 more homogenous subsamples. Our analysis shows that the most important factors explaining farmers'
484 preferences are status quo payments and whether or not farmers already fulfil the environmental and/or
485 employment conditions. Thus, in the remainder of the paper, we conduct estimations on subsamples
486 based on these criteria⁴. Another reason for focusing on status quo payments and compliance is that
487 these criteria seem more relevant from a public policy perspective than any socio-demographic variable.
488 Indeed, the backbone of the 2014 SFS is simplification and self-selection since it is intended to be open
489 to all farms on a voluntary basis, regardless of their type of production, size, or farmer characteristics.

490

491 We conduct mixed logit estimations on four subsamples, splitting our 608 respondents into four classes
492 of first pillar payments (see Table 7). Most results on attribute levels stay qualitatively the same across

⁴ Results from sub-sample estimations (based on criteria such as types of production) are available upon request.

493 the four subsample estimations (*envir*, *emplhi*, *4years*). Only *empllo* is no longer significant for the
494 subsample of farmers receiving more than 7,000€ from the first pillar. Contrary to the three other
495 subsamples, on average these farmers are not sensitive to this attribute level. As expected, the strongest
496 impacts concern the signs and values of ASC parameters. Farmers who receive less than 1,250€ in first
497 pillar payments have a significant preference for both programme 0 and the SFS+, compared to their
498 status quo situation. On the contrary, farmers receiving more than 1,250€ do not like programme 0 and
499 farmers who receive more than 7,000€ have a strong preference for their current situation (the coefficient
500 for the *ASC_AB* is negative and significant at 5% confidence level). However, since farmers who receive
501 more than 7,000€ from the first pillar almost never choose programme 0 and very often choose the status
502 quo, this specification with the two ASCs is not satisfactory for this sub-sample.

503

504 The positive sign of the *ASC-prog0* estimates for respondents who receive less than 1,250€ in their status
505 quo situation indicates that they have a strong preference for the 2014 SFS. The average WTA for
506 respondents who do not get any first pillar CAP payments is 2,300€ (1.1556/0.4893). This can be
507 interpreted as the amount that the standard CAP system would have to offer to get them to renounce the
508 2014 SFS. The difference between 2,300€ and the 1,250€ associated with programme 0 is the monetary
509 equivalent of their preference for the unconditional 2014 SFS compared to the standard per hectare
510 payment of the existing CAP.

511

512 As already mentioned, the positive sign of the coefficient associated to the environmental attribute is
513 related to the fulfilment of the environmental condition. Yet farmers who do not fulfil the environmental
514 condition do not display any strong preference regarding this attribute (the coefficient is not significantly
515 different from zero, see the first estimation of Table 8 and the first graph of Figure 3). This important
516 result reveals that farmers are not discouraged by this condition, which provides strong arguments in
517 favour of the overall acceptability of an SFS+ with an environmental condition attached to it.

518

519 Results are different for the employment condition (see the last four estimations of Table 8 and the last
520 two graphs of Figure 3). Farmers who already fulfil the employment conditions (low or high) are

521 indifferent. They are not particularly favourable to adding an employment condition, and those who do
522 not fulfil employment conditions strongly reject it. This result indicates that imposing employment
523 conditions on an SFS+ would be a risky policy option, susceptible to enrolling very few farmers.
524

525 Table 7: Mixed logit results on subsamples according to first pillar payments

	(1)	(2)	(3)	(4)
	0	]0; 1250]	]1250; 7000]	]7000; 15000]
Mean coefficients				
<i>kpayment</i>	0.489*** (0.0425)	0.620*** (0.0630)	0.731*** (0.0552)	0.455*** (0.0800)
<i>envir</i>	1.515*** (0.197)	1.969*** (0.269)	2.053*** (0.270)	2.223*** (0.411)
<i>empllo</i>	-2.038*** (0.255)	-1.668*** (0.391)	-1.609*** (0.258)	-0.546 (0.353)
<i>emplhi</i>	-3.384*** (0.338)	-2.917*** (0.378)	-2.285*** (0.292)	-0.774** (0.345)
<i>4years</i>	-0.889*** (0.131)	-0.819*** (0.190)	-0.338** (0.152)	-0.640** (0.294)
<i>ASC_prog0</i>	1.156*** (0.347)	1.815*** (0.528)	-3.353*** (0.751)	-22.97 (18,022)
<i>ASC_AB</i>	3.687*** (0.419)	4.368*** (0.539)	0.499** (0.232)	-1.718** (0.834)
S.D. of mean coefficients				
<i>envir</i>	2.169*** (0.229)	2.543*** (0.334)	2.122*** (0.302)	1.865*** (0.433)
<i>empllo</i>	2.550*** (0.291)	3.135*** (0.437)	2.074*** (0.308)	0.885 (0.837)
<i>emplhi</i>	2.801*** (0.338)	3.198*** (0.419)	2.132*** (0.295)	-1.164** (0.484)
<i>4years</i>	0.813*** (0.194)	1.340*** (0.283)	0.749*** (0.219)	1.007** (0.405)
<i>ASC_prog0</i>	2.709*** (0.311)	2.949*** (0.483)	2.642*** (0.630)	0.0572 (18,217)
<i>ASC_AB</i>	3.009*** (0.309)	2.872*** (0.427)	1.868*** (0.269)	6.506*** (1.117)
Observations	6,816	4,736	4,800	3,104
Nb. of farmers	213	148	150	97

*** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses

526

527

528 Table 8: Mixed logit results on subsamples according to whether or not environmental and employment conditions are
 529 fulfilled

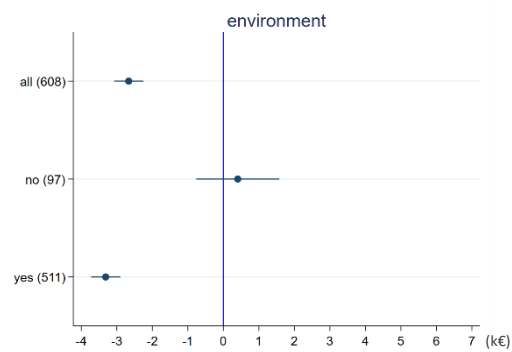
	(1)	(2)	(3)	(4)	(5)	(6)
	envir_no	envir_yes	empllo_no	empllo_yes	emplhi_no	emplhi_yes
Mean coefficients						
<i>kpayment</i>	0.616*** (0.0675)	0.651*** (0.0278)	0.652*** (0.0322)	0.659*** (0.0431)	0.635*** (0.0276)	0.656*** (0.0617)
<i>envir</i>	-0.249 (0.372)	2.157*** (0.137)	2.005*** (0.164)	1.638*** (0.203)	1.806*** (0.150)	1.906*** (0.294)
<i>empllo</i>	-1.832*** (0.429)	-1.564*** (0.167)	-2.633*** (0.229)	0.0634 (0.213)	-1.924*** (0.191)	-0.152 (0.308)
<i>emplhi</i>	-3.346*** (0.560)	-2.619*** (0.179)	-4.403*** (0.303)	-0.650*** (0.178)	-3.503*** (0.225)	-0.121 (0.233)
<i>4years</i>	-0.893*** (0.222)	-0.709*** (0.0883)	-1.111*** (0.118)	-0.238** (0.117)	-0.878*** (0.0943)	-0.159 (0.171)
<i>ASC_prog0</i>	-0.893 (0.618)	-0.121 (0.334)	0.756*** (0.271)	-0.998* (0.568)	0.0246 (0.284)	-1.476 (1.179)
<i>ASC_AB</i>	0.873 (0.545)	2.267*** (0.194)	2.622*** (0.221)	2.984*** (0.451)	2.246*** (0.197)	2.784*** (0.671)
S.D. of mean coefficients						
<i>envir</i>	2.751*** (0.471)	1.935*** (0.142)	2.291*** (0.176)	2.002*** (0.232)	2.292*** (0.173)	2.029*** (0.310)
<i>empllo</i>	2.513*** (0.459)	2.456*** (0.196)	2.976*** (0.270)	1.369*** (0.249)	2.816*** (0.262)	1.564*** (0.373)
<i>emplhi</i>	3.128*** (0.609)	2.687*** (0.202)	3.273*** (0.322)	1.531*** (0.206)	2.960*** (0.232)	1.245*** (0.242)
<i>4years</i>	0.652* (0.365)	0.863*** (0.121)	1.000*** (0.158)	0.741*** (0.175)	0.879*** (0.137)	0.851*** (0.270)
<i>ASC_prog0</i>	4.236*** (0.804)	2.908*** (0.322)	2.616*** (0.311)	2.031*** (0.601)	2.769*** (0.302)	-3.125*** (0.987)
<i>ASC_AB</i>	3.456*** (0.592)	2.826*** (0.207)	3.044*** (0.216)	4.110*** (0.401)	2.964*** (0.181)	4.179*** (0.757)
Observations	3,104	16,352	12,896	6,560	16,032	3,424
Nb. of farmers	97	511	403	205	501	107

*** p<0.01, ** p<0.05, * p<0.1; Standard errors in parentheses

530

531

532 *Figure 3 : Graphs of WTA of environmental and employment conditions*



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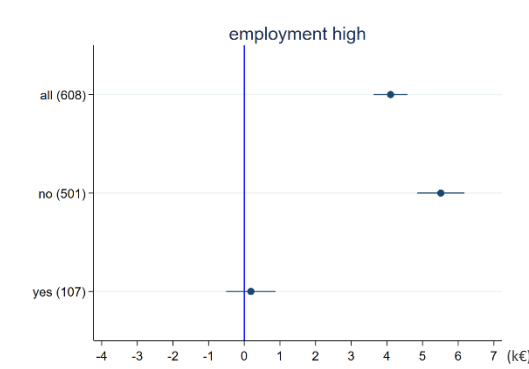
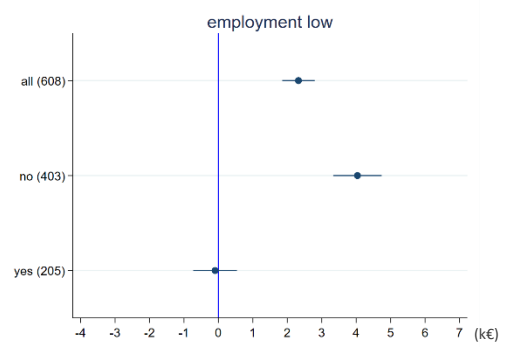
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543 **5. Policy simulations on the French population of non-retired farmers**

544

545 The objective in this section is to provide simulations of the uptake rate and associated public spending
546 of different SFS scenario at the French scale. To do this, we first simulate enrolment decisions made by
547 each respondent in our sample, and we then transpose our results, correcting for our sample bias, to the
548 whole population of French farmers (excluding retired farmers)⁵ using the 2010 agricultural census
549 figures. We first present the results on enrolment rate and the additional cost of the 2014 SFS (Section
550 5.1). Next, we present comparable results on three selected hypothetical SFS+ (Section 5.2) and we
551 make a proposal to finance the additional cost of an SFS+ (Section 5.3). Finally, we analyse the incentive
552 effects of those three specific hypothetical programmes (Section 5.4).

553

554 ***5.1 Simulated enrolment in the 2014 SFS (programme 0)***

555

556 We showed in Section 4 that farmers who do not receive any CAP payments have a strong preference
557 for programme 0. We confirm this result with our policy simulations. The simulation of the enrolment
558 in the 2014 SFS (programme 0) at the national scale is done in several steps from the results of our
559 choice experiment.

560 First, to calculate the rate of enrolment, we compare the status quo's utility to the utility of programme
561 0 for each respondent using individual estimated parameters from the mixed logit (3) ML_0_AB of Table
562 5. Indeed, even if the 2014 SFS does not imply any condition, we do not just compare the amounts
563 received by a farmer, but the *utility* he derives from each scenario. 2.

564 The second step consists in correcting the sampling bias in order to extend our results to the estimated
565 population of 222,398 French non-retired farmers (see Table 4) receiving less than 15,000 € in first pillar
566 direct payments. In doing so, we assume that no farmer getting more than 15,000€ from the first pillar

⁵ Given the very low proportion of retired farmers among our respondents, we had insufficient information on the choices of retired farmers. We therefore chose to estimate the rate of enrolment of French farmers excluding the retired farmers (408 000 farmers)

567 would enrol into the 2014 SFS. As explained in section 4.2, the main factors explaining farmers' choices
568 to enrol into the 2014 SFS (programme 0) or any SFS+ programme are their status quo payments and
569 whether or not they already fulfil the environmental and/or employment conditions. Other potential
570 explanatory variables, like respondents' socio-economic characteristics or respondents' farming systems
571 are not significant in our models estimating the decision to enrol (see section 4.2). For each cell of Table
572 3, grouping respondents with the same characteristics in terms of status quo payments and conditions
573 fulfilled, we calculate the rate of respondents who would choose to enrol in the 2014 SFS (see Table A1
574 in Appendix). We assume that this proportion is a reasonable approximation of the proportion of non-
575 retired French farmers with equivalent characteristics who would enrol. Therefore, we estimate for each
576 cell of Table 4 the number of French farmers who would enrol in the 2014 SFS, by transposing the cell-
577 specific simulated rates of enrolment.

578 According to that calculation, nearly 55,000⁶ farmers (13% of the overall population of non-retired
579 French farmers in 2010- 408 000 farmers) would choose the 2014 SFS, were it proposed.
580 Unsurprisingly, 89% of them are farmers who already receive less than 1,250€ in first-pillar payments,
581 but the remaining 11% receive an average of 3,620€ that they are willing to forego in return for a lower
582 payment of 1,250€ associated with less administrative constraints, no conditionality and no control.

583 In a third step, we can calculate the resulting total cost of the 2014 SFS had it been proposed to French
584 farmers, which is just 1250€ times the number of enrolled farmers. To estimate the net additional cost,
585 we subtract from the total cost the saved first pillar payments (as they are no longer paid to farmers who
586 enrol in the programme). Since, we do not know exactly which farmers would enrol in each cell of Table
587 4, we consider that every farmer receives the average of the first pillar direct payments of that cell (i.e.
588 for that specific population of farmers). We estimate the net additional cost of the 2014 SFS

⁶ This estimation is based on 2010 agricultural census figures but it matches quite well a rough estimation that can be done based on the 2019 EC figures, by assuming that all farmers receiving less than 2,000€ in direct aid will switch to the 2014 SFS. The 2019 EC figures for first pillar direct aids indicate that more than 54,000 farmers received less than 2,000€ and among them 39,370 received less than 1,250€.

589 implementation at the scale of France at 129 million €, which represents an increase of 1.86% of the
590 total first pillar direct aid budget (estimated at 6,933 million in 2019 by the European Commission⁷).

591

592 *5.2 Comparison of three simulated SFS+*

593

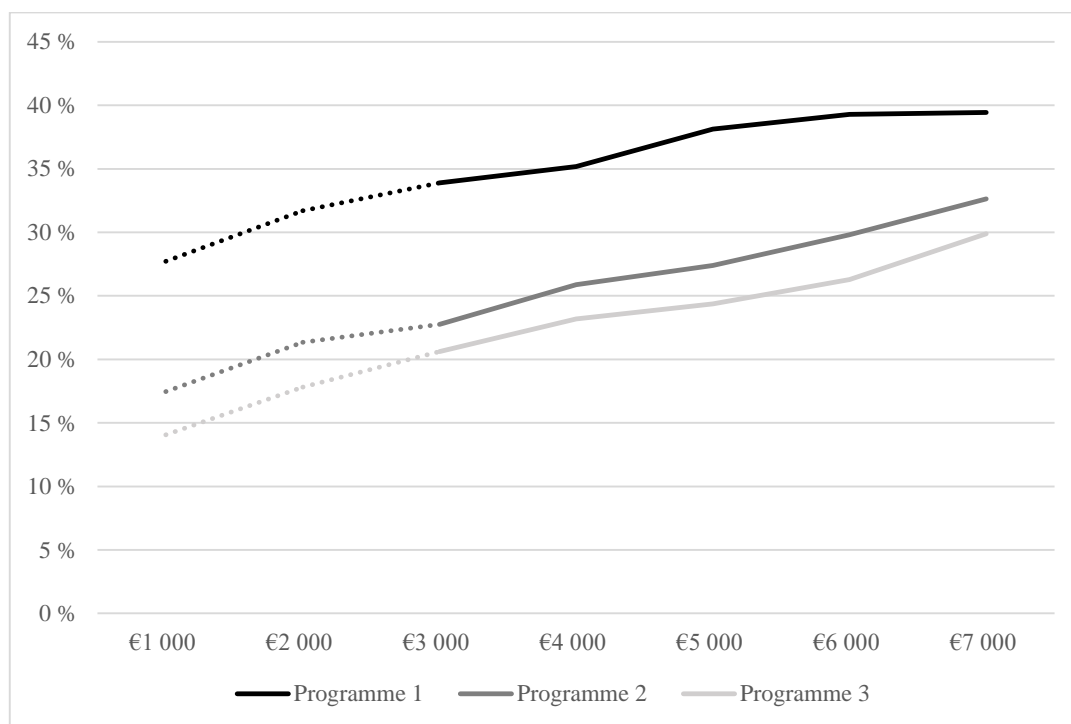
594 We conduct the simulations for three hypothetical programmes that are created by combining different
595 levels of our condition attributes. We do not report the results for other combinations of the attributes
596 because those other hypothetical programmes are of lesser interest. Indeed, given the results of our
597 choice experiment, it is not advisable to waive the environmental condition. On the other hand, the
598 commitment condition is mostly rejected by respondents, so it is preferable not to introduce it. The
599 different levels of the employment condition have important impact in respondent choices, so we
600 propose to simulate three SFS+:

- 601 - Programme 1 has no employment constraint, it includes only the environmental condition, it is
602 the favourite programme of our sample;
- 603 - Programme 2 combines the environmental condition with the low employment condition;
- 604 - Programme 3 combines the environmental condition with the high employment condition.

605 To conduct the simulations on these three SFS+, we follow the same steps as for programme 0 (see
606 section 5.1). We first compute the rate of enrolment in each programme using the individual estimated
607 parameters from the mixed logit (3) ML_0_AB of Table 5 for each cell of Table 3. To observe the impact
608 of the lump-sum payment on enrolment, we vary the payment from 1000€ to 7000€. Next, we extend
609 our results to the whole French population of non-retired farmers using Table 4. Here again, we assume
610 that farmers receiving more than 15,000€ from the first pillar will never enrol into an SFS+. In Figure
611 4, the simulations of the enrolment rates for payments less than 3,000€ are shown in dotted line because
612 3,000€ is the lowest payment proposed for a SFS+ in our choice experiment.

613

⁷ https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/direct-aid-indicative-figures-2019_en.pdf

614 *Figure 4 : Simulated enrolment rates in SFS+ on all non-retired French farmers (408,154 farmers)*

615

616

617 For a lump-sum payment of 3,000€, 34% of all non-retired French farmers would sign up for programme
618 1 (environmental condition only). As they include an employment condition, the estimated enrolment
619 rates of programmes 2 and 3 are lower than those of programme 1 with a 3,000€ payment, but they
620 increase significantly and more rapidly than for programme 1 as the lump-sum payment increases.
621 The estimated net additional costs of programmes depend on the enrolment rate of farmers and their first
622 pillar payments. Those who decide to enrol, even though their first pillar payments are higher than the
623 proposed lump-sum payment, contribute to reduce the net additional budgetary cost by foregoing part
624 of their payments. They are particularly numerous to do so in the programme 1. This explains its
625 relatively lower net additional cost compared to the other two programmes, even though it has the
626 highest enrolment rate (see Table 9).
627

628 *Table 9: Simulated enrolment rate and net additional cost of the 2014 SFS and of three hypothetical programmes*

Simulations on the non-retired French farmer population		
Programmes	Enrolment rate (on the total population of non- retired farmers)	Additional cost (% of the total cost of status quo situation which is 6,933 million €)
<u>Programme 0</u> (2014 SFS): 1,250 € no condition	13%	129 million € (+1,86%)
<u>Programme 1</u> : 3,000 € and environmental condition only	34%	42 million € (+0,61%)
<u>Programme 2</u> : 3,000 € and environmental and low employment conditions	23%	93 million € (+1,34%)
<u>Programme 3</u> : 3,000 € and environmental and high employment conditions	21%	46 million € (+0,67%)

629

630

631 *5.3 A proposal to finance the additional cost of a SFS+*

632

633 It has to be underlined that the programmes' net additional costs remain modest when compared to the
634 overall first pillar direct aid budget (6,933 million €). The net additional cost of programme 3 represents
635 an increase of 0,67% of the total cost of the status quo situation whereas the implementation of
636 programme 1 would represent only +0,61%.

637 As a check, we conduct a sensitivity analysis to account for the fact that some cells of Table 3 are not
638 well populated: in particular, we had very few respondents who fulfil the (low or high) employment
639 condition only. Thus, to assess a maximum additional cost of an SFS+ with a lump-sum payment of
640 3,000€, we assume that all the 114,291 farmers getting less than 3,000€ (and only them) enrol into any
641 SFS+ (whatever the conditions attached), all the other farmers keep their first pillar direct payments.
642 Under this naive and extreme assumption, the net additional cost of a SFS+ would be 251 million €,
643 which represents a budget increase of 3.6% maximum.

644

645 With the objective of a constant CAP budget, we propose to finance the additional cost of our proposed
646 SFS+, by reducing the amount of direct aids paid to the largest beneficiaries of the first pillar direct
647 payments. We simulate different burden-sharing scenarios, in which only farmers receiving more than
648 €20,000 as direct payments from the first pillar contribute by having their payments reduced. To finance
649 the additional cost of 42 million € corresponding to the enrolment of 34% of the non-retired French
650 farmers in programme 1, we could set a reduction of an average rate of 0.7% on all the farmers receiving
651 more than 20,000€. To take into account the heterogeneity of the average amounts received per farm
652 among these largest beneficiaries, we test a progressive contribution rate. We apply a contribution rate
653 ranging from 0.6% for those getting less than 100,000 €, up to 2.3% for the largest beneficiaries. As
654 shown in Table 10, the corresponding average individual contributions are rather negligible for each
655 contributing farmer compared to their current first pillar payments. This scenario seems quite acceptable
656 for those who would face a reduction in their first pillar direct payments.

657

658 *Table 10: Proposal to finance programme 1 with a progressive contribution rate*

First pillar payments in k€	Current average first pillar payments	Average individual contribution	Chosen contribution rate
Less than 20 k€	7,074€	0 €	0 %
[20; 50[	31,680 €	206 €	0.6 %
[50; 100[	65,104 €	422 €	
[100; 150[	116,912 €	1,896 €	1.6 %
[150; 200[	169,110 €	2,743 €	
[200; 250[	222,023 €	4,321 €	1.9 %
[250; 300[	271,114 €	5,276 €	
[300; 500[	389,688 €	8,848 €	2.3 %
More than 500 k€	1,230,625 €	27,940 €	

659

660

661 *5.4 Incentive effect of simulated SFS+*

662

663 To measure the efficiency of the SFS+ proposed, we need to complete our analysis on participation rates
664 and additional costs with an evaluation of the incentive effect of programme conditions. In other words,
665 do proposed programmes just enrol those who already comply with conditions? Or do they motivate
666 farmers to change their employment and/or environmental practices in order to become eligible for the
667 programmes? Thus, we need to estimate the proportion of farmers who would choose the programmes
668 although they do not currently comply with the conditions.

669

670 For a 3,000€ lump-sum payment, 34% of non-retired French farmers would enrol in programme 1,
671 according to our simulations. Out of these potentially enrolling farmers, 11% already meet the
672 environmental condition, whereas 89% choose to join programme 1, although they do not comply with
673 the environmental condition yet (see the first pie chart of Figure 5). This conclusion is based on organic
674 certification only because the agricultural census does not provide information on other –less
675 demanding- environmental certifications. 89% is therefore the upper bound of the percentage of farmers
676 who would have to get an environmental certification in order to be eligible. These 89% are the farmers
677 who would create an additional environmental benefit by joining programme 1 compared to the status
678 quo situation. The net impact of programme 1, beyond the financial support provided to all farmers
679 already complying, lies with this quite high proportion of new certification that could be attained.

680 For programmes 2 and 3 with a 3,000€ lump-sum payment, respectively 77% and 79% of non-retired
681 French farmers would not enrol. Nevertheless, the second and third pie charts of Figure 5 show that
682 among the farmers who would enrol, only few already meet all conditions attached (3% for programme
683 2 and 5% of programme 3). The others would have to comply with at least one of the conditions. The
684 proportions of farmers who would seek to meet both the environmental and the employment conditions
685 (low or high levels) are high for these programmes (75% for the programme 2 and 66% for the
686 programme 3). These programmes create incentives for non-compliant farmers to change their
687 environmental and employment practices.

688

689 *Figure 5: Incentive effects of SFS+ on enrolled farmers (based on our simulations on non-retired French farmer population)*



690

691 *All compliant means that respondents already comply with all the conditions attached to the programme (ie for*

692 *programme 1, all-compliant farmers are those who already have an environmental certification). Non-compliant*

693 *means that respondents comply with none of the conditions attached to the programme.*

694

695 **6. Discussion and policy recommendations**

696

697 ***6.1 Respondents' attitudes with respect to CAP support***

698

699 An indirect lesson drawn from our survey is the confirmation that a large number of respondents do not
700 know the amount of CAP support they receive annually. Out of the 1,002 respondents who answered at
701 least the first part of our questionnaire, 65% declared that they get payments from CAP and all but five
702 were able to state whether the overall amount received was lower than 2,000€, between 2,000 and
703 8,000€, between 8,000€ and 20,000€, or above. Yet when asked to indicate the approximate amount
704 received from the first pillar⁸, 45% replied that they were unable to answer. The same proportion is
705 found in our final sample of 608 respondents: 41% of our respondents receiving CAP payments were
706 unable to indicate how much they get from the first pillar. This result is interesting because it indicates
707 that the CAP is seen as a black box by many small farmers who cannot distinguish why they get different
708 types of support or how much they receive.

709 Respondents who declare that they do not receive any CAP payments at all (346 farmers of the initial
710 1,002 respondents) explain that they are not eligible for CAP payments (48%) and that they are
711 discouraged by the administrative complexity of CAP procedures (38%): "The amount of aid would be
712 too small in relation to the time needed for the administrative procedure". 22% state that they prefer not
713 to be dependent on CAP payments: "I want to remain in control of my economic and strategic choices".
714 Only 5% respond that they do not want to be controlled⁹.

715

716 ***6.2 Respondents' attitudes with respect to the SFS+***

717

⁸ Farmers were reminded of the structure of first pillar payments: basic payment scheme, plus the green payment and the redistributive payment, as well as coupled payments associated to certain types of production and herds.

⁹ Multiple responses were allowed.

718 It is interesting to note that the preferences we estimated with the discrete choice experiment are also
719 shared broadly by the 71 respondents¹⁰ who have always chosen the status quo option. They justified
720 their choice by indicating that the status quo is the most favourable option to them (91%) and/or that
721 none of the proposed programmes suited them (81%). Yet they also responded that they were not
722 opposed to an SFS+ and declared that it is a relevant policy option for small farmers. When asked what
723 the best design for an SFS+ would be, 42% choose an SFS+ with environmental and employment
724 conditions, 40% of them choose the SFS+ with an environmental condition only, and 16% choose the
725 2014 SFS¹¹.

726

727 *6.3 Is the simplification objective attained?*

728

729 An SFS+ would alleviate the paperwork related to CAP declaration procedures as it would no longer be
730 necessary to calculate eligible hectares, basic payment rights or greening payments or to check
731 compliance with the required agricultural and environmental conditions stipulated. Only the conditions
732 attached to the SFS+ would have to be controlled at the end of each year and this could easily be coupled
733 with the database of environmental certification agencies and social and employment services.

734 Of course, the simplification advantages of an SFS+ would be partly wasted if small farmers chose to
735 switch back and forth between the regular CAP payment system and the SFS+ due to uncertainties or
736 changes in strategy. This is why we tested farmers' responses to a 4-year commitment. We find that
737 respondents would require on average an extra 1,000€ per year to commit to a programme for four years
738 instead of just 1 year (see Section 4.2). Interestingly enough, a majority of respondents (54%) declare
739 that they are in favour of this commitment condition. To justify this response, 59% indicate that they
740 appreciate the guarantee of a fixed payment over 4 years and 33% like the alleviation of the
741 administrative burden on farmers. Only 8% mention the fact that this would simplify the tasks of the

¹⁰ We have excluded the nine protest-no respondents.

¹¹ Only 57 respondents of 71 gave an answer to this non-compulsory question.

742 payment agency. 24% of respondents declare that they are against the 4-year commitment condition: for
743 them it imposes too much rigidity and 4 years is too long of a period to commit to.

744

745 **7. Conclusion**

746

747 The proposal for an extended small farmers scheme (SFS+) with environmental and employment
748 conditions appears on paper to respond both to the objective of CAP payment simplification and to better
749 support the small farm sector. Imposing environmental and employment eligibility conditions is a way
750 to improve the targeting of this financial support on farmers who are trying to start or want to consolidate
751 their transition towards more environmentally-friendly practices by rewarding their efforts and by
752 contributing to alleviating the costs of wage labour. Including a conditionality regime in a renewed
753 version of the 2014 SFS would also increase the legitimacy of a small farmers scheme offering more
754 significant amounts, since payments could be tied to environmental and social services.

755

756 Our results indicate that an SFS+ with an environmental condition is an acceptable policy option for
757 many small farmers: it would enrol farmers who already fulfil the condition (notably organic market
758 gardeners) but also farmers who do not meet the condition yet. Such an SFS+ could serve as a lever to
759 accelerate the small farm sector's transition towards more sustainable certified practices. It could also
760 contribute to changing the social norm, by signalling that engaging in a certified agro-ecological
761 transition is rewarded by society. The willingness to meet conditions on employment is lower. Small
762 farmers face many uncertainties that prevent them from hiring permanent labour and, although they
763 complain of an excessive workload, they remain reluctant to use paid labour unless they are guaranteed
764 large support payments. Thanks to our simulations, we estimate that 21% of non-retired French farmers
765 would enrol in an SFS+ combining the environmental condition with the high level employment
766 condition for a lump-sum payment of 3,000€. This rate would increase to 30% if payments increased to
767 7,000€ per farm. -

768

769 This paper is the first contribution evaluating farmers' preferences for a lump-sum payment as a
770 substitute to the usual CAP per-hectare income-support system. It opens up new ideas on what could be
771 proposed by France in the context of the post-2020 CAP reform, since the new delivery system should
772 give Member States more flexibility to design their own policy instruments. This study is particularly
773 useful for French policy-makers because it helps estimating environment rates for various SFS+ as well
774 as associated additional budgetary costs. It also shows that financing an SFS+ would not be too costly
775 for the largest beneficiaries in the context of redistribution of CAP support.

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835 **Appendix**

836

837 *Table A1 : Simulated enrolment rate in the 2014 SFS (programme 0) from the individual parameters of the respondents*

Range of first pillar direct payments in euros (status quo)	0	]0; 1,250]	]1,250; 7,000]	]7,000; 15,000]
No condition fulfilled	74%	55%	0%	0%
Environmental condition fulfilled (only)	42%	34%	4%	0%
Low employment condition fulfilled (only)	0%	0%	40%	0%
Low and High employment condition fulfilled (only)	100%	100%	50%	0%
Environmental and low employment conditions fulfilled (only)	30%	43%	8%	0%
Environmental condition and both employment conditions (low and high) fulfilled	50%	41%	20%	0%

838

839