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Perception of harms and property rights shapes private forest owners views on wild mushroom picking policies

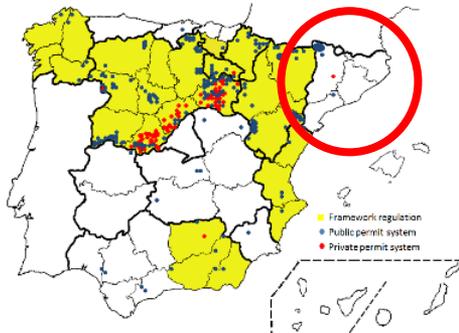
The right of mushroom picking

- Increasing mushroom picking in Europe
- If high pressure + rivalry product → possible conflicts
 - pickers vs pickers (“tragedy of the commons”)
 - pickers vs forest managers
- Permits or licenses = right-based governance mechanism. Right + norms.
- Mushroom value: externality so far for forest owners. Possibilities for “compensation” or “income”?



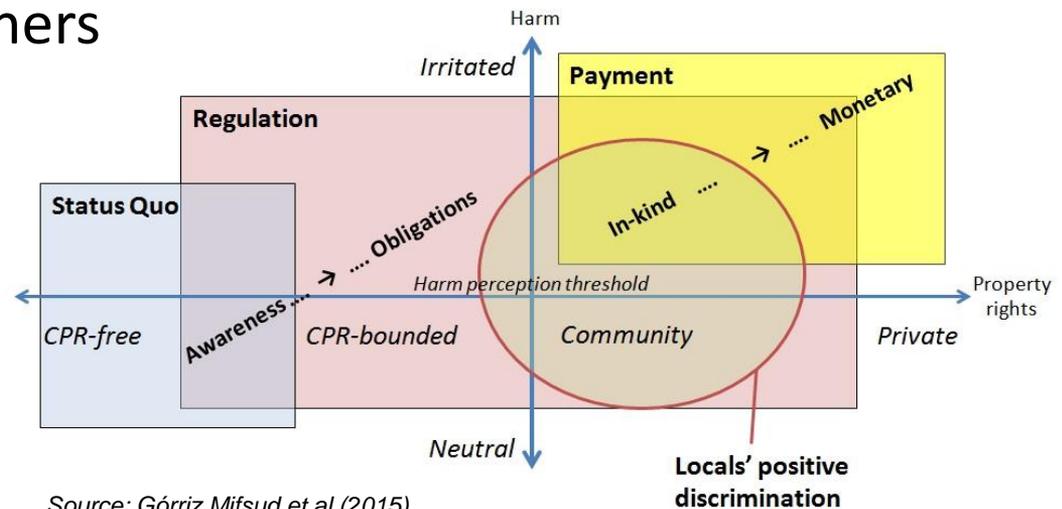
Private forest owners and mushroom policy

- Spain legal framework: mushroom picking is landowner's right
- No specific norm → owners feel less supported



Source: Górriz Mifsud and Bonet (2016)

- Qualitative study: harms and rights determine FO preference for intervention



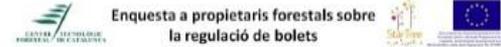
Research Questions

- What factors determine FO's willingness to establish a picking fee?
- What factors determine FO's willingness to participate in a mushroom reserve?
- How can perceived damage and congestion be explained?



Data collection

- Online & paper questionnaire (2015)
- 35 questions
- Sent to 4,390 private FOs. Contacts' problem.
- 10% response rate. 448 replies ≈ 4,5% PFO area



En el marc del projecte europeu StarTree (www.star-tree.eu), l'àrea d'Economia forestal del CTFC estem fent un estudi de les opinions dels propietaris de boscos sobre una possible regulació de la recollida de bolets a Catalunya. Volem recollir les visions dels propietaris i analitzar estadísticament els diferents factors. Ens interessa que tots els perfils de propietaris quedin reflectits, per tant si vostè no rep massa boletaires o és un petit propietari també ens interessa la seva visió! Per això, us agraïm que respongueu el següent qüestionari i ens ho envieu abans del 15 de maig amb el sobre prepagat adjunt. Totes les dades romandran anònimes.
Per qualsevol dubte al respecte, contacteu: elene.gorri@ctfc.es / 637.036.344

Primer, una mica sobre el seu bosc...

1. Quina és la superfície total de bosc de la seva propietat? ____ hectàrees
2. Està en una sola peça (agrupada) / dividit en diferents peces separades: nº: ____ peces
3. En quina comarca està el seu bosc? _____
4. Com de sovint ve al seu bosc? visc a la propietat / cada dia / un cop a la setmana / un cop al mes / 1-5 cops a l'any / només en vacances / només quan hi ha feines a fer / pràcticament mai
5. Quines són les principals espècies d'arbres al seu bosc?
_____/_____/_____/_____
6. Teniu masover a la propietat? Sí / No

Sobre la gestió del seu bosc...

7. Teniu un pla de gestió forestal? Sí / No
8. Heu patit algun incendi forestal a la seva propietat? Sí / No
9. Faci una creu si pertany vostè a: (pot elegir diverses opcions)
 una ADF / Associació o agrupació de Propietaris Forestals / Cooperativa agrària / Associació de Caçadors
10. Hi ha vedat de caça a la seva propietat?
 Sí, vedat privat / Sí, vedat municipal / No, és zona lliure de caça

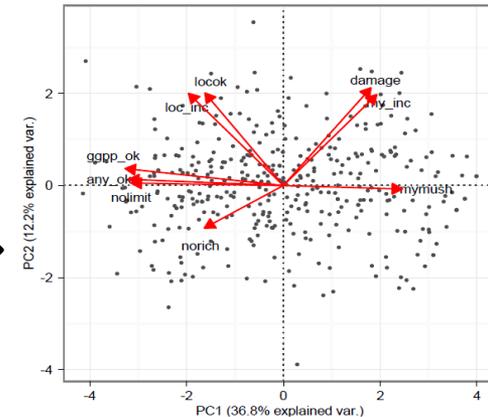
11. Quan pren decisions sobre la gestió del seu bosc, com valora els següents aspectes?

	Molt important	Important	Poc important
Mantenir la herència familiar com a tasca moral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La bellesa del paisatge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La possibilitat d'anar-hi per lleure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La font potencial d'ingressos a partir de la fusta, llenyes o suro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Els animals i plantes que hi viuen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
El risc d'incendis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La possibilitat de proveir-me de llenya	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
La possibilitat de recollir bolets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Data analysis

- R & SPSS
- Models tested
- P.right statements → Property right variable →
- Trees → Mushroom productivity index

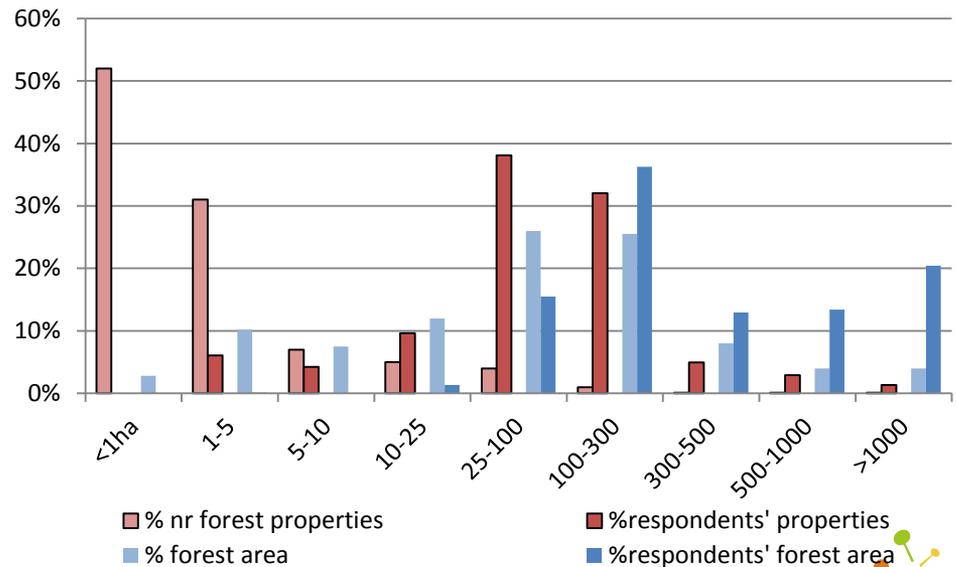


Dependent var.	Independent variables	Model fitted
FEE	ACCESS; DAMAGE; PLAN; PRIMARY; PRIGHT; REGUL; REVENUE; TOURISM Fixed effect: AREA categories.	Binary logit model
RESERVE	ACCESS; AREA; DIST; DISTB; DAMAGE; FEE; FIRETHR; GAMERES; MUSHPROD; SOCCAP; TRUFFLE,	Binary logit model
$\ln(\text{DAMAGE}+2)$	AREA; CONGES; DIST; DISTB; FREQ; PLAN; PRIMARY; TOURISM	Multiple linear regression
CONGES	ACCESS;DIST; DISTB; FREQ; MUSHPROD; POPDENS; PRIMARY	Ordered logit model



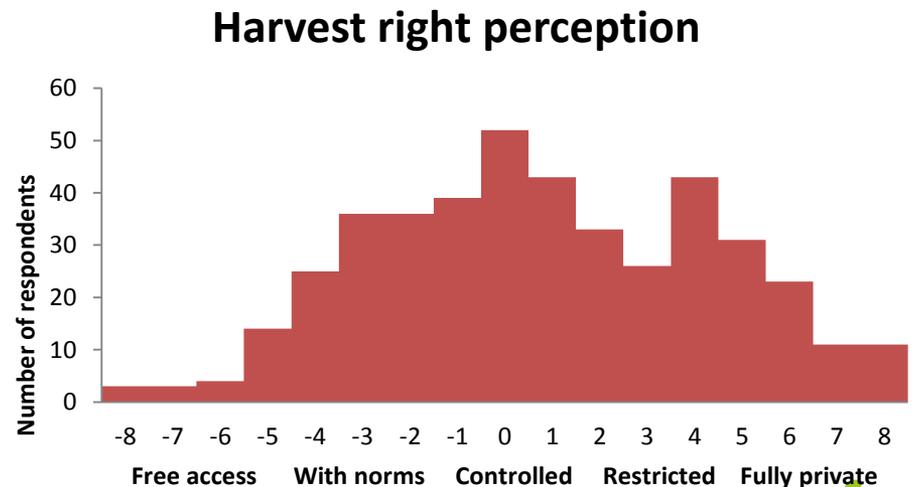
Respondents' description

- Predominantly men, medium-aged, high education (60% univ)
- Medium-large owners: av. 159 ha, in av. 2.2 parcels
- Active: 79% mgmt plan
- 5% forestry-living only
- Main criteria for forestry: fire prevention
- 66% FOAssoc members
- 56% fire volunteers



Mushroom picking rights

- **SELF-PICKING:**
 - 90% pick mushrooms: 2% trade them, 4% rural tourism
 - 39% consider mushrooms as potential income source
- **LEGAL OWNERSHIP:**
 - 69% aware of being legal owners of mushrooms



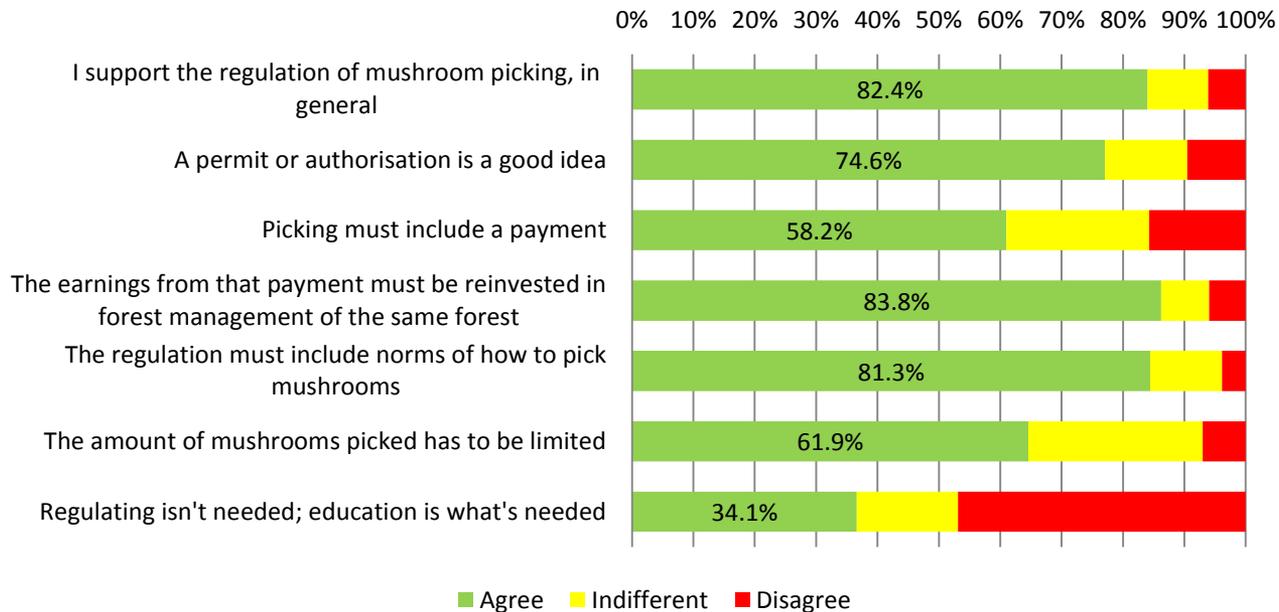
Perception on mushroom pickers

- CONGESTION:
 - 47% receive “too many pickers”, 30% “reasonable amount”
- IMPACTS:
 - 60% consider pickers harness the fungal resource
 - 63% report damages: 53% rubbish. 28% unpoliteness. 22% cattle fence. 15% roads
- RESTRICTION:
 - 41% want to restrict in any case + 22% restrict if no norms. 56% don't want to limit the traditional activity



Policy preferences

- Wide support to a specific regulation, with picking norms
- Majority supporting a picking payment. Proceeds to be reinvested in forestry



Picking fee

- 58% fee supporters
- Factors: regulation-supporters + larger damages + private picking right + active forestry

Independent variable	Estimate	z value	Odds Ratio	95% CI
Intercept	-2.150 ***	-4.518	0.12	0.04; 0.28
DAMAGE	0.297 ***	3.512	1.35	1.15; 1.60
PRIGHTS	0.260 ***	5.823	1.30	1.19; 1.42
PLAN	0.628 *	2.016	1.87	1.02; 3.46
REGUL	1.763 ***	4.125	5.83	2.63;14.17

Starting AIC: 384.2; final AIC: 378.3
Cragg and Uhler's pseudo R²: 0.448'. d.f: 4 and. 378.



Mushroom reserve

- 64% interested in mushroom reserve with neighbouring FOs
- Factors: fee-supporters + larger damages + near urban + access restrictions
- 46% prefer FOA as intermediary

Independent variable	Estimate	z value	Odd Ratio	95% CI
Intercept	-0.051	-0.163	0.95	0.51;1.75
ACCESS	0.143 *	2.138	1.15	1.02;1.32
FEE	0.653 **	2.635	1.92	1.18;3.13
AREA	0.001	1.400	1.00	1.00;1.00
DAMAGE	0.220 **	2.875	1.25	1.08;1.45
DIST	-0.009 *	-2.154	0.99	0.98;1.00
TRUFFLE	0.482	1.600	1.62	0.91;2.97

Starting AIC:455.5; final AIC 446.4

Cragg and Uhler's pseudo R²: 0.168; *d.f.*: 6 and 364.

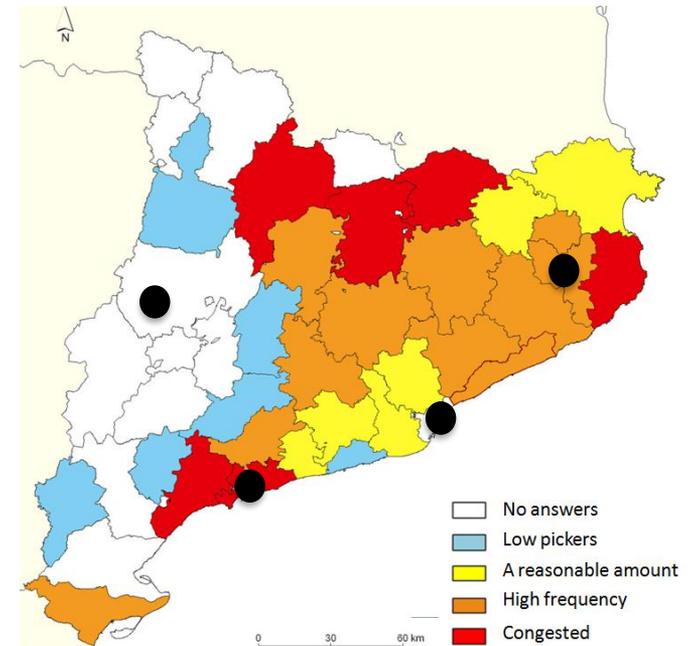


Damage and congestion perception

- Damage:
only explained by congestion levels
- Congestion:
mushroom productivity + access restrictions + primary sector

Independent var	Estimate	t value	Odd Ratio	95% CI
Cut1	-0.825 ***	-4.806	-	-
Cut2	0.609 ***	3.650	-	-
MUSHPROD	0.008 ***	3.692	1.01	1.00;1.01
ACCESS	0.104 ***	2.054	1.11	1.01;1.23
PRIMARY	0.428 ***	2.206	1.53	1.05;2.25

Starting AIC:819.3; final AIC 812.9
Cragg and Uhler's pseudo R²: 0.073



Discussion

- Despite the biased towards medium-large FO, area doesn't explain policy preferences
- Large own usage of FO mushrooms is a novelty (larger than average Catalans)
- Confirmation of nuisances & rights as drivers of FO positionings
- Regulation support: synergies with Catalan population opinions regarding good practices
- Payment: partial support. Mainly devoted to forest tending



Policy recommendations (1)

- FO claim for a specific regulation, clarifying:
 - pickers' and FO' rights and duties (harvest norms). Government role.
 - legal figure for mushroom reserves: protocol
 - enforcement competences (forest guards?)
 - Infractions & sanctions
- Heterogeneity rights' perceptions & policy preferences implies complex solution
 - portfolio of options accommodating FO preferences
- Special attention to most productive areas & close to capitals (congestion = conflicts)



Policy recommendations (2)



- Portfolio accommodating right perceptions:
 - FO happy with status quo: nothing → public right
 - FO pro-free access but with norms → picking norms valid everywhere → ↓ nuisances
 - FO pro-payment but not with reserve → cession of picking right to Forest Service + revert as direct forestry works
 - FO pro-payment & reserve → facilitation → income-generation right
 - Spatial cohesion (efficiency & understanding) → support FOA as catalysers, obligation to join? min. area?
 - If preferential treatment to locals → possibility → common right
 - FO against pickers → reserve without permits → exclusivity right





Comments? Suggestions?

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