
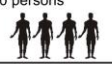

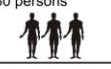

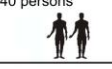




















58 **Appendix B: Details of scenario benefit calculations**

59

| 1/6 | Measure A | 1/6 | Measure B | | Present situation |
|---|--|---|--|---|--|
| Risks by climate change  | Carbon sequestration 720 persons  | Risks by climate change  | Carbon sequestration 630 persons  | Risks by climate change  | Carbon sequestration 540 persons  |
| Risks by non native plants  | Removal of non-native plants in large areas if harmful or not | Risks by non native plants  | Removal of harmful non-native plants in particular cases | Risks by non native plants  | Removal of harmful non-native plants in particular cases |
| Risks by insect pests and storms  | High resistibility  | Risks by insect pests and storms  | Low resistibility  | Risks by insect pests and storms  | Middle resistibility  |
| Threats by unknown risks  | High resistibility  | Threats by unknown risks  | Middle resistibility  | Threats by unknown risks  | Middle resistibility  |
| Extra duty per year  | + 60 euro per year | Extra duty per year  | + 35 euro per year | Extra duty per year  | + 0 euro per year |

60

- 61 I would chose Measure A
 62 I would chose Measure B
 63 I would chose “the present situation” (no change)
 64

65 Figure B1. Example of a choice set presented to respondents (translated from the German original version).

66

67 **Econometric analysis**

68 We assume an additive utility function linear in parameters with respect to the attribute levels.
 69 The utility function can be separated into an *observable* component V_{in} and *unobservable*
 70 (error) component ϵ_{in} :

71

$$U_{in} = V_{in} + \epsilon_{in} \tag{1}$$

72

73 where U_{in} is the total utility of alternative i for individual n . The probability that individual n
 74 will choose option i over option j within the complete choice set C is given by:

75

$$\Pr_{in} = \Pr (V_{in} + \epsilon_{in} > V_{jn} + \epsilon_{jn}, \text{ all } j \in C) \tag{2}$$

76

77 If a deterministic utility component V_1 is hypothesized to be a linear function of attribute Z_1
 78 itself, plus an interaction term of the attribute Z_1 with an individually varying socio-
 79 demographic variable A , V_1 can be expressed as

80

$$V_1 (Z_1, A) = c_A * Z_1 * A + c_1 * Z_1 \tag{3}$$

81

82 with c_A : utility coefficient of the interaction term. In the econometrically estimated utility
 83 models, a positive sign of the coefficients c indicate a positive influence of the respective term
 84
 85
 86

87 on choices, and thus on utility. To reduce collinearity between the interaction term and the
88 non-interacted attribute term, the socio-demographic variable A can be standardized before
89 multiplied with Z_1 . The vector of utility coefficients is usually estimated with maximum
90 likelihood estimation techniques. Usually the estimated choice models include an alternative
91 specific constant (ASC) that picks up systematic difference in choice patterns between the
92 three choice cards. The ASC was coded 'zero' for cards A and B, and '1' for the Status Quo
93 option (*Status Quo*-ASC).

94 Preliminary analyses unveiled a risk of violation of the independence from irrelevant
95 alternatives (IIA) assumption necessary for the application of the (simple) Conditional Logit
96 model. Thus, Nested Logit models (NL) were used that partially relax the IIA assumption
97 (Train 1998, Hensher et al. 2005:518). Suitable NL model structures were identified, and the
98 corresponding models estimated with NLOGIT 3.0. The inclusive value was set to 1.0 for the
99 degenerated branch, and the model initiated with starting values obtained from a non-nested
100 NL model (Hensher et al. 2005:530). All scale parameters were normalized at the lowest level
101 (RU1).