

### Appendix 3

Supplemental information for: **Fostering creativity to design biodiversity-based cropping systems that consider the long term: a participation framework**

**Table A3:** Details of the characteristics given by participants as rationale for their crop choice during workshop.

Crop species	Raw characteristics given by participants during the crop choice	Knowledge origin	Ecosystem service targeted
Spring oats	Food	T	Food provision
Spring oats	Food	T	Food provision
Spring oats	Good association with lentils*	T	Supply of nutrients for agroecosystem functioning
Spring oats	Good association with lentils*	T	Supply of nutrients for agroecosystem functioning
Spring oats	Good association with lentils*	T	Supply of nutrients for agroecosystem functioning
Winter oats	Food supply	T	Food provision
Fodder beet	Forage potential	T	Food provision
Fodder beet	Forage potential	T	Food provision
Spring wheat	Food	T	Food provision
Winter wheat	Food	T	Food provision
Winter wheat	Food	T	Food provision
Winter wheat	Food	T	Food provision
Winter wheat	Food	T	Food provision
Winter wheat	Good association with faba bean*	E	Supply of nutrients for agroecosystem functioning
Winter wheat	Good association with faba bean*	E	Pest control
Winter wheat	Good association with faba bean*	E	Weed control
Carrot	Food supply	T	Food provision
Carrot	Organoleptic quality - vitamins	Sp	Food provision
Hemp	Limitation of GHG emissions	E	Regulation of greenhouse gases
Hemp	Pollination	Sp	Maintenance of associated biodiversity
Hemp	Food	T	Food provision
Rapeseed	Weed control	T	Weed control
Rapeseed	Soil fertility maintenance	T	Supply of nutrients for agroecosystem functioning
Rapeseed	Soil fertility maintenance	T	Supply of nutrients for agroecosystem functioning
Rapeseed	Soil structuring	E	Supply of nutrients for agroecosystem functioning
Rapeseed	Soil structuring	E	Regulation of water balance for crop development
Rapeseed	Soil structuring	E	Erosion control

Rapeseed	Food	T	Food provision
Rapeseed	Food	T	Food provision
Rapeseed	Low sensitivity to bioaggressors	Sp	Regulation of greenhouse gases
Rapeseed	Forage potential	E	Food provision
Cocksfoot	Drought resistance	E	Regulation of water balance for crop development
Cocksfoot	Forage supply	T	Food provision
Spelt	Disease resistance	T	Pest control
Spelt	Disease resistance	T	Pest control
Spelt	Drought resistance	E	Regulation of water balance for crop development
Spelt	Food	T	Supply of nutrients for agroecosystem functioning
Spelt	Food	T	Supply of nutrients for agroecosystem functioning
Spinach	Food supply	T	Food provision
Spinach	Valorization of nitrogen residues	Sp	Supply of nutrients for agroecosystem functioning
Fescue	Deep root system	T	Regulation of water balance for crop development
Fescue	Deep root system	T	Supply of nutrients for agroecosystem functioning
Fescue	Forage supply	T	Food provision
Winter faba bean	Forage potential	T	Food provision
Winter faba bean	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Spring faba bean	Forage potential	E	Food provision
Spring faba bean	Forage potential	E	Food provision
Spring faba bean	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Spring faba bean	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Timothy	Forage supply	T	Food provision
Lentil	Food	T	Food provision
Lentil	Food	T	Food provision
Lentil	Forage potential	E	Food provision
Lentil	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Lentil	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Lentil	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Bird's-foot trefoil	Nitrogen supply	T	Supply of nutrients for agroecosystem functioning
Alfalfa	Soil structuring	E	Erosion control
Alfalfa	Soil structuring	E	Supply of nutrients for agroecosystem functioning
Alfalfa	Soil structuring	E	Regulation of water balance for crop development
Alfalfa	Deep nutrient capture	E	Supply of nutrients for agroecosystem functioning
Alfalfa	Deep water capture	T	Regulation of water balance for crop development
Alfalfa	Weed control	Sp	Weed control
Alfalfa	Forage potential	E	Food provision

Alfalfa	Forage potential	E	Food provision
Maize	Food	T	Food provision
White mustard	Pollination	T	Maintenance of associated biodiversity
White mustard	Frost sensitive	E	Weed control
White mustard	Pest control	T	Pest control
White mustard	Pest control	E	Pest control
White mustard	Pest control	E	Pest control
White mustard	Soil structuring	T	Supply of nutrients for agroecosystem functioning
White mustard	Soil structuring	T	Erosion control
White mustard	Soil structuring	T	Regulation of water balance for crop development
White mustard	Weed control	T	Weed control
White mustard	Weed control	T	Weed control
White mustard	Soil fertility maintenance	T	Supply of nutrients for agroecosystem functioning
White mustard	Biomass	T	Supply of nutrients for agroecosystem functioning
Onion	Pollination	T	Maintenance of associated biodiversity
Onion	Organoleptic quality	E	Food provision
Onion	Pest control	Sp	Pest control
Onion	Easy to clean	E	Regulation of greenhouse gases
Spring barley	Biomass	T	Supply of nutrients for agroecosystem functioning
Phacelia	Beauty	E	Cultural
Phacelia	Soil structuring	T	Supply of nutrients for agroecosystem functioning
Phacelia	Soil structuring	T	Erosion control
Phacelia	Soil structuring	T	Regulation of water balance for crop development
Phacelia	Ground cover	T	Supply of nutrients for agroecosystem functioning
Phacelia	Pest control	T	Pest control
Phacelia	Pollination	T	Maintenance of associated biodiversity
Phacelia	Pollination	T	Maintenance of associated biodiversity
Phacelia	Pollination	T	Maintenance of associated biodiversity
Phacelia	Biomass	T	Supply of nutrients for agroecosystem functioning
Phacelia	Biomass	T	Supply of nutrients for agroecosystem functioning
Leek	Food supply	T	Food provision
Leek	Allelopathy	Sp	Weed control
Leek	Allelopathy	Sp	Pest control
Pea	Food	E	Food provision
Pea	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Pea	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Pea	Forage potential	T	Food provision

Potato	Gastronomy/Heritage	E	Cultural
Potato	Pest control	Sp	Pest control
Potato	Organic matter return	Sp	Supply of nutrients for agroecosystem functioning
Potato	Energy source	T	Food provision
Potato	Energy source	T	Food provision
Potato	Energy source	T	Food provision
Potato	Energy source	T	Food provision
Quinoa	Soil restitution	Sp	Supply of nutrients for agroecosystem functioning
Quinoa	Weed control	Sp	Weed control
Chinese radish	Aeration	E	Supply of nutrients for agroecosystem functioning
Chinese radish	Aeration	E	Regulation of water balance for crop development
Chinese radish	Aeration	E	Erosion control
Chinese radish	Minimal soil work	E	Regulation of greenhouse gases
Chinese radish	Minimal soil work	E	Erosion control
Chinese radish	Strong rooting	T	Regulation of water balance for crop development
Forage radish	Ground cover	E	Erosion control
Forage radish	Ground cover	E	Pest control
Forage radish	Ground cover	E	Maintenance of water quality
Forage radish	Soil restitution	E	Supply of nutrients for agroecosystem functioning
Forage radish	Allelopathy	E	Weed control
English ryegrass	Ground cover	T	Supply of nutrients for agroecosystem functioning
English ryegrass	Ground cover	T	Pest control
English ryegrass	Ground cover	T	Maintenance of water quality
English ryegrass	Ground cover	T	Erosion control
English ryegrass	Root biomass	T	Supply of nutrients for agroecosystem functioning
Sainfoin	Pollination	T	Maintenance of associated biodiversity
Sainfoin	Drought-adapted	E	Regulation of water balance for crop development
Sainfoin	Forage potential	Sp	Food provision
Sainfoin	Weed control	Sp	Weed control
Sainfoin	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Buckwheat	Food	T	Food provision
Buckwheat	Weed control	T	Weed control
Buckwheat	Weed control	T	Weed control
Buckwheat	Weed control	T	Weed control
Buckwheat	Gastronomy/Heritage	E	Cultural
Buckwheat	Low input consumption	E	Maintenance of water quality
Buckwheat	Low input consumption	E	Regulation of greenhouse gases

Buckwheat	Low soil work requirement	Sp	Regulation of greenhouse gases
Rye	Deep root system	T	Supply of nutrients for agroecosystem functioning
Rye	Deep root system	T	Regulation of water balance for crop development
Rye	Ground cover	T	Supply of nutrients for agroecosystem functioning
Rye	Ground cover	T	Weed control
Rye	Ground cover	T	Maintenance of water quality
Rye	Ground cover	T	Erosion control
Forage sorghum	Leaching attenuation	E	Supply of nutrients for agroecosystem functioning
Forage sorghum	Leaching attenuation	E	Maintenance of water quality
Forage sorghum	Forage potential	E	Food provision
Sunflower	Pollination	T	Maintenance of associated biodiversity
Sunflower	Pollination	T	Maintenance of associated biodiversity
Sunflower	Food	T	Food provision
Sunflower	Food	T	Food provision
White clover	Perennial - cover	T	Supply of nutrients for agroecosystem functioning
White clover	Perennial - cover	T	Maintenance of water quality
White clover	Perennial - cover	T	Weed control
White clover	Perennial - cover	T	Erosion control
White clover	Perennial - cover	T	Supply of nutrients for agroecosystem functioning
White clover	Perennial - cover	T	Maintenance of water quality
White clover	Perennial - cover	T	Weed control
White clover	Perennial - cover	T	Erosion control
White clover	Surface roots	T	Supply of nutrients for agroecosystem functioning
White clover	Association with rapeseed	E	Supply of nutrients for agroecosystem functioning
Egyptian clover	Forage potential	E	Food provision
Egyptian clover	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Crimson clover	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Crimson clover	Forage potential	E	Food provision
Red clover	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Red clover	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning
Red clover	Forage potential	E	Food provision
Triticale	Forage potential	E	Food provision
Triticale	Biomass	T	Supply of nutrients for agroecosystem functioning
Vetch	Forage potential	E	Food provision
Vetch	Nitrogen supply to the soil	T	Supply of nutrients for agroecosystem functioning

