**Supplementary materials**

* S1: Difference in number of activities in the ‘no barrier’ scenario as compared to the ‘business as usual’ scenario
* S2: Estimation results of the number of nature related activities on dairy farms in the Netherlands, following a Poisson regression
* S3: Average number of self-initiated activities for those farmers who can apply for agri-environmental schemes (AES)
* S4: Incidence-rate ratios of the number of nature related activities on dairy farms in the Netherlands
* S5: Questionnaire

*S1: Difference in number of activities in the ‘no barrier’ scenario as compared to the ‘business as usual’ scenario*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Mean | Standard deviation | Maximum | Minimum |
| Dairy farming | 1.10 | 0.47 | 8 | -8 |
| Arable farming | 0.71 | 2.57 | 13 | -9 |

Note: A positive value indicates more activities in the ‘no barrier’ scenario among dairy farmers (n= 812) and arable farmers (n = 335).

*S2: Estimation results of the number of nature related activities on dairy farms in the Netherlands, following a Poisson regression*

|  |  |  |
| --- | --- | --- |
| Variable | Dairy farming | Arable farming |
| Intensity (GVE/ha or intensity of cropping) | -0.12\*\*\* | -0.37\* |
| Area (ha) | 0.00\*\*\* | 0.00\*\*\* |
| Organic (yes/no) | 0.38\*\*\* | 0.36\*\* |
| On-farm side activities (yes/no) | 0.12\*\* | -0.01 |
| Job outside farm (yes/no) | 0.09 | -0.13 |
| Landscape and natural values | 0.21\*\*\* | 0.20\*\* |
| External constraints (difference in number of activities in the ‘no barrier’ scenario relative to the ‘business as usual’ scenario) | 0.03\*\*\* | 0.04\*\*\* |
| Constant | 0.85\*\*\* | 0.33\*\* |
| Log-likelihood value | -1435.21 | -469.69 |
| R-squared | 0.06 | 0.03 |

Notes: \*\*\*significant at 1% level, \*\* significant at 5% level, \* significant at 10% level. Dairy farmers: n=812 and arable farmers: n=335.

*S3: Average number of self-initiated activities for those farmers who can apply for agri-environmental schemes (AES)*

|  |  |  |
| --- | --- | --- |
|  | Agri-environmental scheme |  |
| Variable | Yes | No | Difference |
| Dairy farming | 3.13 | 2.68 | 0.46\* |
| Arable farming | 2.12 | 1.80 | 0.33 |

Note: The sample consisted of dairy farmers (n= 233) and arable farmers (n = 83) who are located in an area where they can apply for AES. \* significant at 10% level.

*S4: Incidence-rate ratios of the number of nature related activities on dairy farms in the Netherlands*

|  |  |  |
| --- | --- | --- |
| Variable | Dairy | Arable farming |
| Area (ha) | 1.00 | 1.00 |
| Intensity (GVE/ha) | 0.89 | 0.69 |
| Organic (yes/no) | 1.46 | 1.44 |
| On-farm side activities (yes/no) | 1.13 | 0.97 |
| Job outside farm (yes/no) | 1.10 | 0.88 |
| Landscape and natural values | 1.23 | 1.21 |
| External constraints (difference in number of activities in the ‘no barrier’ scenario relative to the ‘business as usual’ scenario) | 1.03 | 1.04 |
| Constant | 2.33 | 1.39 |

Note: dairy arming: n=812; arable farming: n=335.

*S5: Questionnaire*

**Dairy farming**

Introductory text in email

Over the last few years there has been a lot of attention for nature and landscape quality in dairy farming. Many people and NGOs have their ideas about what the countryside should look like in the future. But we know less about what dairy farmers think. Which (im)possibilities do they see for more or different types of nature on their fields?

Wageningen University and Research, in collaboration with Agrio, has developed a short questionnaire to answer the above questions. With the results we want to contribute to the societal debate about agriculture, nature and landscape quality by providing insight into what farmers think about the issue. The questionnaire is available on [www.xxxxx.nl](http://www.xxxxx.nl). Would you be so kind as to complete it? We hope you will cooperate! We will present the results in this newspaper. You also may win a 50,- voucher if you give us your email address (3 vouchers will be raffled).

Thank you in advance,

Hens Runhaar, Nico Polman, Marijke Dijkshoorn, Wageningen University and Research; Robert Ellenkamp, Agrio.

Questions

*1. Background questions*

1a. How many livestock units per hectare do you have?

* Equal or lower than 1
* 1-2
* 2-3
* 3-4
* 4-5
* 5-6
* 6 or more

1b. How many hectares of grassland do you have in use?

* Less than 25 hectares
* 25-50 hectares
* 50-100 hectare
* 100-150 hectares
* Over 150 hectare

1c. You participate in the grazing regime (i.e. have your cows graze for a minimum number of days a year)?

* Yes
* No

1d. Do you have maize fields and/or other cattle feed crops on your farm? If yes, how much?

* Less than 5 hectares
* 5-10 hectares
* 10-20 hectares
* Over 20 hectares

1e. Are you involved in one or more of the following side activities? (multiple answers are possible)

|  |
| --- |
| * Tourism, accommodation or recreation
 |
| * Farm shop
 |
| * Child care
 |
| * Job outside the farm
* Other, namely…
 |

1f. Are you an organic dairy farmer (or in transition)?

* Yes
* No

*2. Conservation of meadow birds*

2a. Is your farm located in an area where AES applies?

* Yes
* No
* Don’t know

2b. Do you have a contract for AES?

* Yes, for meadow bird conservation
* Yes, for other measures
* No

*3. Nature on your farmland and farmyard*

3a. Are you voluntarily engaged in meadow bird conservation (so next to participation in AES or other subsidies)?

* Yes
* No

3b. Do you actively provide space for nature on your farm? (multiple answers possible)

* Yes, help birds on farmyard and buildings (e.g. swallows or barn owls)
* Yes, herb-rich grasslands
* Yes, extensive grazing
* Yes, leave pieces of land unutilised for wild plants and flowers
* Yes, nature friendly banks along ditches
* Yes, water hole
* Yes, search for calves of roe deer, young hares etc. before mowing
* Other, namely …

*4. Your company in the next 5 years*

4a. The following questions are about the space you will or can provide to nature in the next 5 years. We have two scenarios: one in which policy and legislation remain largely unchanged and one in which you have all freedom to choose whatever you want. Please indicate what you expect to do in both scenarios.

**Scenario 1: “Business as usual”**: imagine (EU) agricultural policy will not substantially change. At this moment it is not clear what the new cabinet will do or how the EU Common Agricultural Policy will look like after 2020.

**Scenario 2: “If I could say”**:what would you do if you could decide? We mean: if there are no constraining rules, high costs or practical problems associated with more or other forms of nature on your farm?

|  |  |  |
| --- | --- | --- |
|  | In the **‘business as usual’** scenario | In the **‘if I could say’** scenario |
| More space for nature (larger area) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More herb-rich grassland | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More birds on farmyard (e.g. swallow or barn owl) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Less disturbance of meadow birds (postpone mowing) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Mowing in periods (not one large piece of grassland in one go) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Cart manure with hay instead of inject it into the soil | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More use of manure with hay instead of fertilizer | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Higher water table | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More intense protection of wild animals (e.g. hare, rabbit or roe deer) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |

**Arable farming**

Introductory text in email

Over the last few years there has been a lot of attention for nature and landscape quality in dairy farming. Many people and NGOs have their ideas about what the countryside should look like in the future. But we know less about what dairy farmers think. Which (im)possibilities do they see for more or different types of nature on their fields?

Wageningen University and Research, in collaboration with Agrio, has developed a short questionnaire to answer the above questions. With the results we want to contribute to the societal debate about agriculture, nature and landscape quality by providing insight into what farmers think about the issue. The questionnaire is available on [www.xxxxx.nl](http://www.xxxxx.nl). Would you be so kind as to complete it? We hope you will cooperate! We will present the results in this newspaper. You also may win a 50,- voucher if you give us your email address (3 vouchers will be raffled).

Thank you in advance,

Hens Runhaar, Nico Polman, Marijke Dijkshoorn, Wageningen University and Research; Robert Ellenkamp, Agrio.

Questions

1a. How large is the area used for which crops?

* Root crops (potatoes, sugar beets) \_\_\_\_\_\_ ha
* Grains, oil seeds or legumes \_\_\_\_\_\_ ha
* Other crops \_\_\_\_\_\_ ha
* Grassland \_\_\_\_\_\_ ha
* Field scale vegetables \_\_\_\_\_\_ ha
* Glasshouse horticulture \_\_\_\_\_\_ m²
* Flowering bulbs \_\_\_\_\_\_ ha
* Fruit cultivation \_\_\_\_\_\_ ha
* Other, namely …. \_\_\_\_\_\_ ha

*We calculated intensity based on the answers to this question. As we mention in the paper: we calculated the percentage of rotational crops for arable farming (potatoes, sugar beets, onions, vegetables and cereals) for this purpose. See also Table 3.b.*

1b. Do you have a mixed farm (e.g. arable and dairy farming or arable and poultry farming)?

* Yes
* No

1c. Are you involved in one or more of the following side activities? (multiple answers are possible)

* Tourism, accommodation or recreation
* Farm shop
* Child care
* Job outside the farm
* Other, namely …

1d. Are you an organic dairy farmer (or in transition)?

* Yes
* No

1e.Do you plough (tillage)?

* Yes
* No

*2. AES*

2a. Is your farm located in an area where AES applies?

* Yes
* No
* Don’t know

2b. Do you have a contract for AES?

* Yes
* No

*3. Nature on your farmland and farmyard*

3a. Are you voluntarily engaged in nature conservation (so next to participation in AES or other subsidies)?

* Yes
* No

3b. Do you actively provide space for nature on your farm? (multiple answers possible)

* Yes, help birds on farmyard and buildings (e.g. swallows or barn owls)
* Yes, leave pieces of land unutilised for wild plants and flowers
* Yes, nature friendly banks along ditches
* Yes, search for calves of roe deer, young hares etc. before mowing
* Other, namely …

*4. Your company in the next 5 years*

4a. The following questions are about the space you will or can provide to nature in the next 5 years. We have two scenarios: one in which policy and legislation remain largely unchanged and one in which you have all freedom to choose whatever you want. Please indicate what you expect to do in both scenarios.

**Scenario 1: “Business as usual”**: imagine (EU) agricultural policy will not substantially change. At this moment it is not clear what the new cabinet will do or how the EU Common Agricultural Policy will look like after 2020.

**Scenario 2: “If I could say”**:what would you do if you could decide? We mean: if there are no constraining rules, high costs or practical problems associated with more or other forms of nature on your farm?

|  | In the **‘business as usual’** scenario | In the **‘if I could say’** scenario |
| --- | --- | --- |
| More space for nature (larger area) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Less ploughing in order to promote soil fauna | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Reduce use of pesticides and herbicides | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Leave corn stubble/other remainder of crops for birds during winter | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Leave corners and other pieces of land undisturbed | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Harvest in multiple rounds (not in one go) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Cart manure with hay instead of inject it into the soil | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More farmland birds | ○ Yes, probably | ○ Yes, probably |
| More small game in my fields (e.g. hare and rabbit) | ○ No, probably not | ○ No, probably not |
| More big game in my fields (e.g. roe deer) | ○ I really do not know yet | ○ I really do not know yet |
| More birds on farmyard (e.g. swallow or barn owl) | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More flower-rich field strips | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| More nature friendly banks along ditches | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |
| Other, namely … | ○ Yes, probably○ No, probably not○ I really do not know yet | ○ Yes, probably○ No, probably not○ I really do not know yet |