VERNON
RESEARCH GROUP

Indian Creek Watershed

Preliminary Quantitative Report

September 2014

Presentation Outline

- Purpose and Methodology
- Results
  - Intercept Results
  - Resident Results
  - Farmer Results
  - Business Owner Results
  - Group Differences
- Key Findings
- Recommendations

Purpose and Methodology

Purpose and Methodology

- A research study was completed in order to understand awareness, perceptions, attitudes, preferences, usage and practices related to the Indian Creek Watershed
- Anyone who lived or owned property in the Indian, Dry or Squaw Creek Watershed areas was asked to complete an online survey – the county database was used to validate addresses entered by participants
- Specifically, three groups were targeted: those who owned houses in the watershed, those who owned businesses in the watershed and those who owned/managed farmland in the watershed
- Data recruitment efforts were extensive and there was a prize drawing for Residents and Business Owners and individual incentives for Farmers

Purpose and Methodology

- People were invited by a variety of means, including email invitations, Facebook ads, advertising in agricultural newsletters and local papers, linking on popular websites and in-person recruitment efforts
- The Farmer sample was challenging due to the time of year and attitudes/distrust - this was overcome by a second wave of data collection via mail in a Farm Bureau mailing and tying completion to donations to youth groups (FFA or 4-H)
- Surveys were completed between April 26 and August 31, 2014
- There were a total of 349 quality completes – 287 Residents, 12 Business Owners and 50 Farmers/owners of agricultural land

Indian Creek Watershed - Results

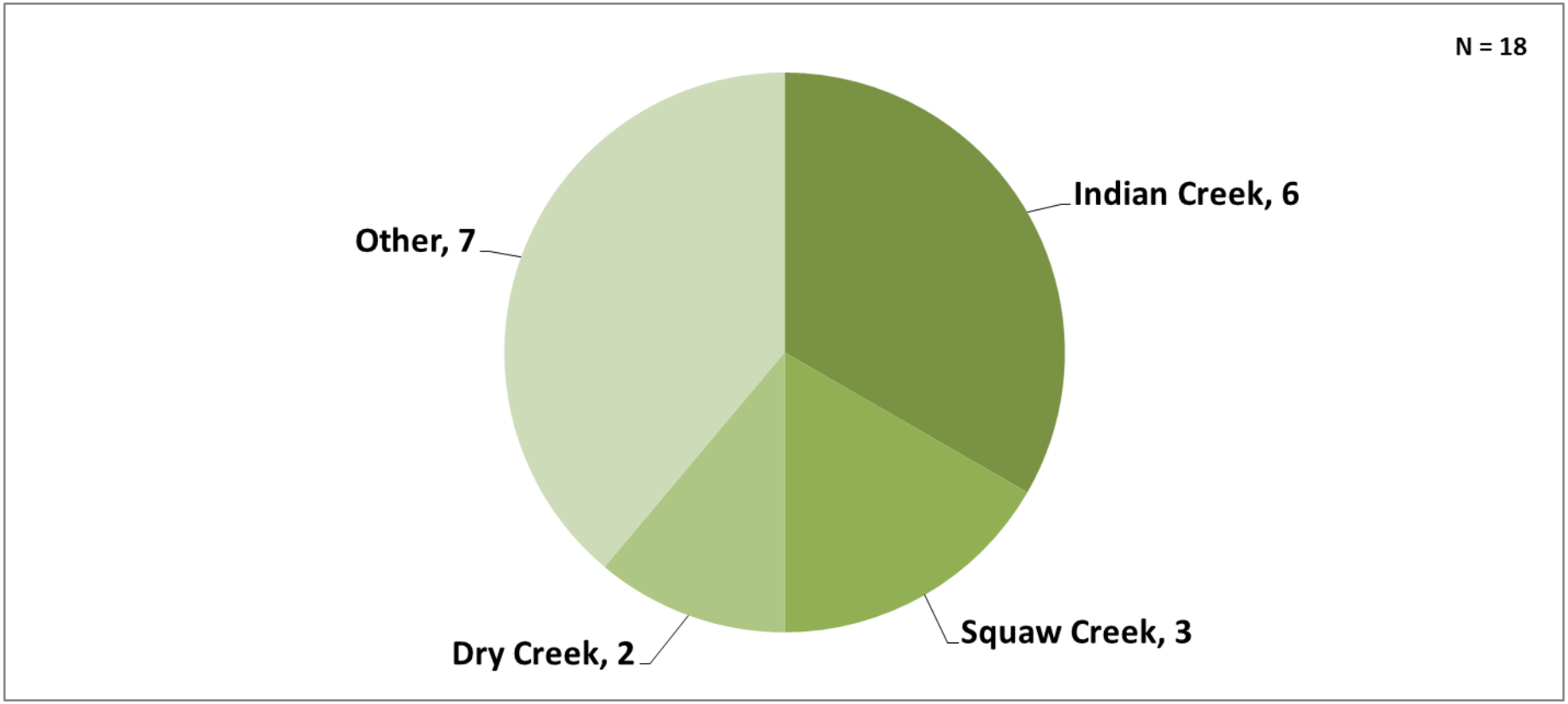
Creek Visitor Intercepts

Intercept – Overview

- Indian Creek Watershed Management Authority worked with Coe College to have students administer an intercept survey with creek visitors
- Surveys were gathered by paper in the fall of 2013, winter of 2014 and spring of 2014
- Results were entered online and analyzed by Vernon Research Group

Intercept – Living in Watersheds

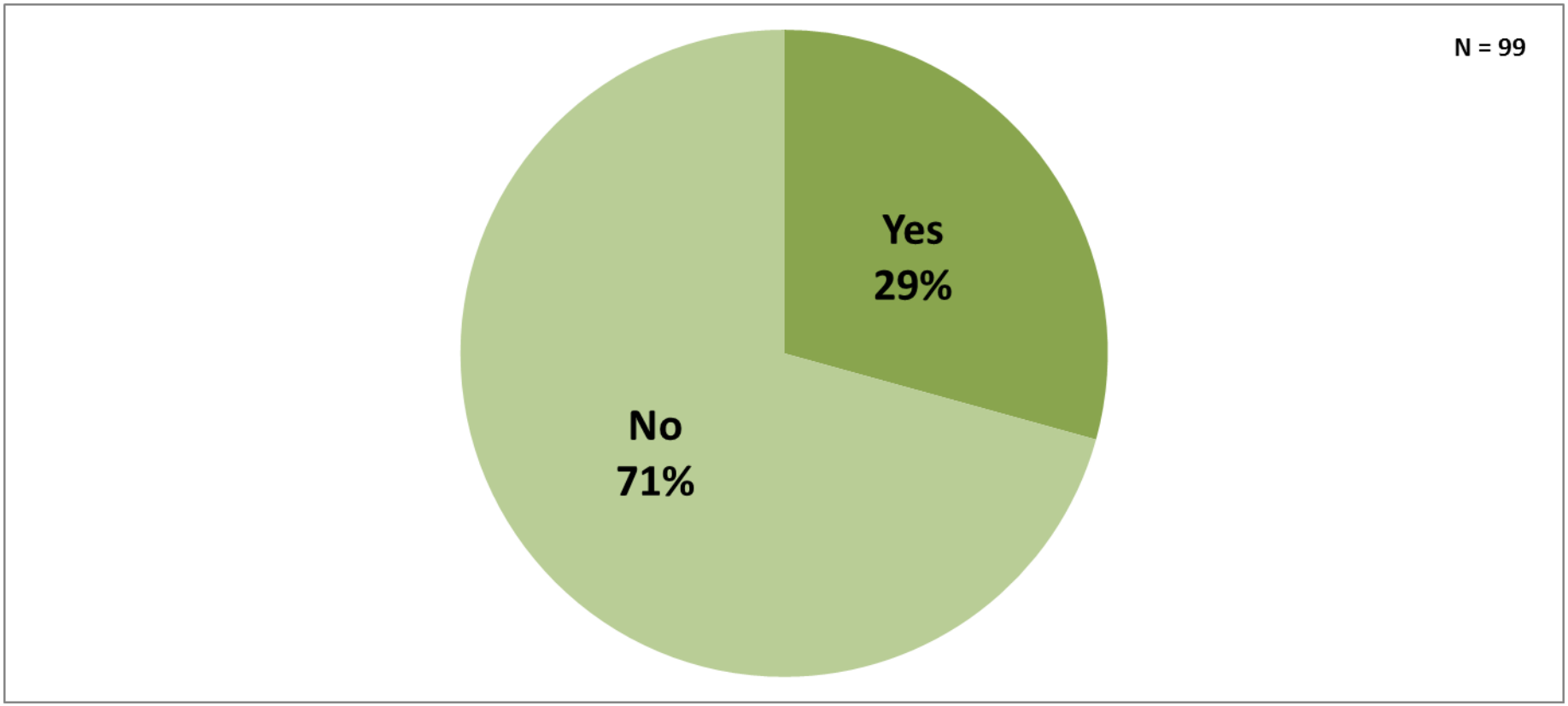
18 of 99 respondents knew they lived in a watershed area.



Q3: Do you know which watershed you live in?

Intercept – Affected by Flooding

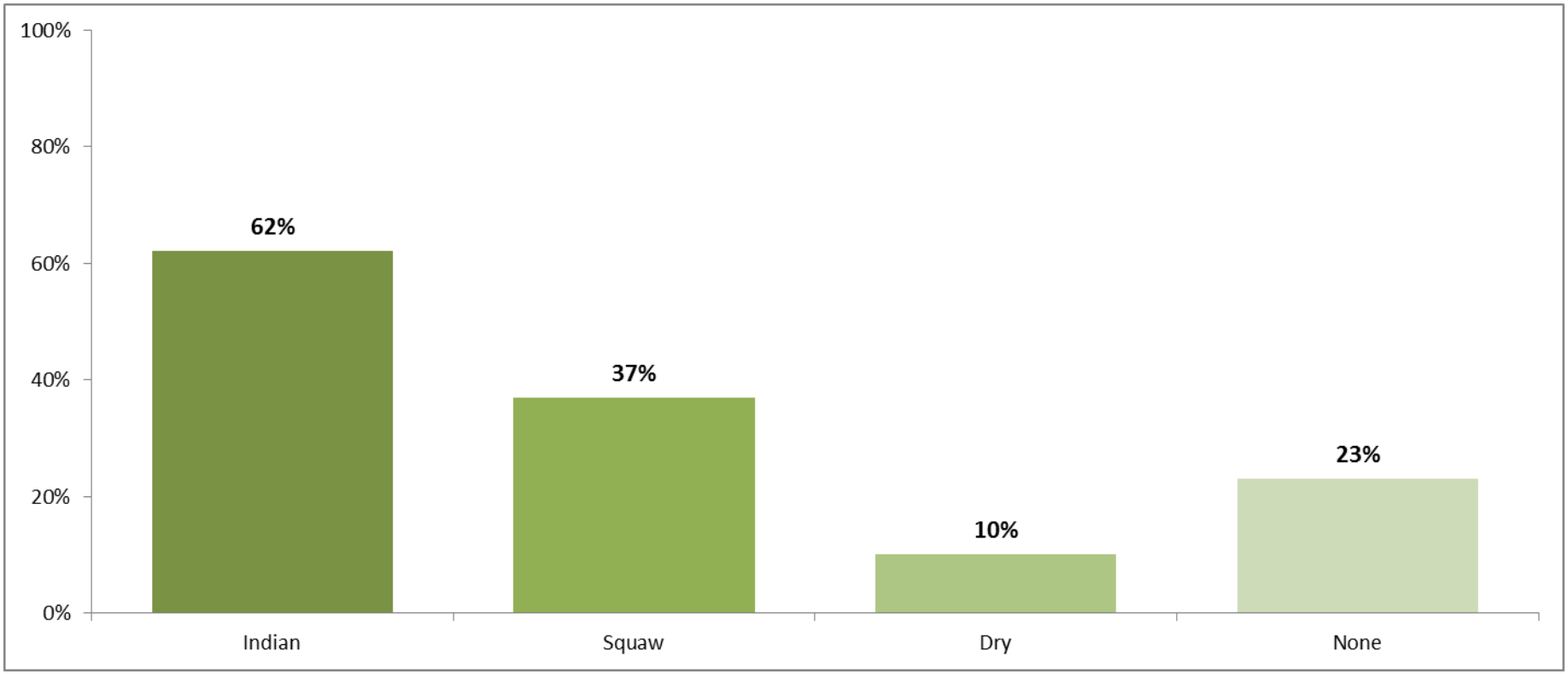
A minority of the respondents had ever been affected by flooding at home or work.



Q4: Has your home or place of work ever been affected by flooding?

Intercept – Creek Popularity – Visits

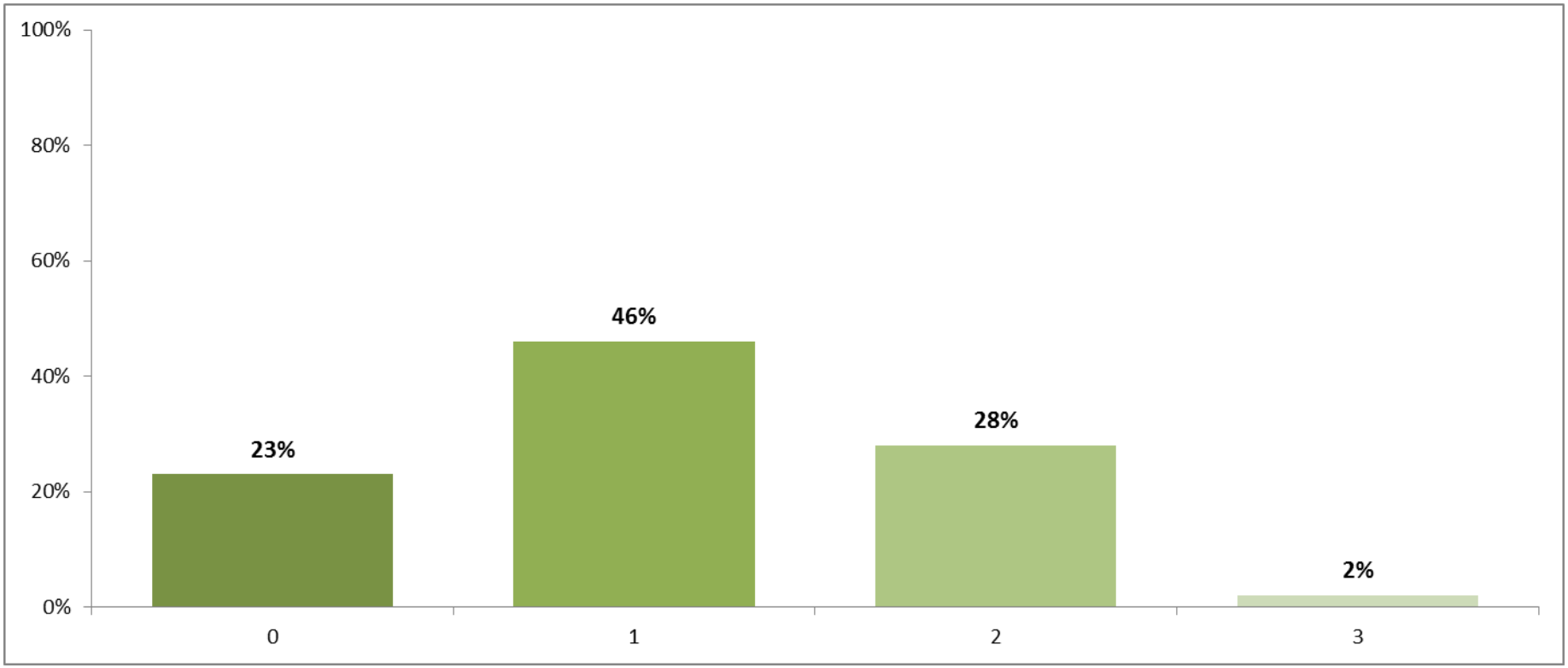
Indian Creek was the most-visited local creek.



Q5: Do you spend time around any of these creeks? (check all that apply)

Intercept – Creek Popularity – Number Visited

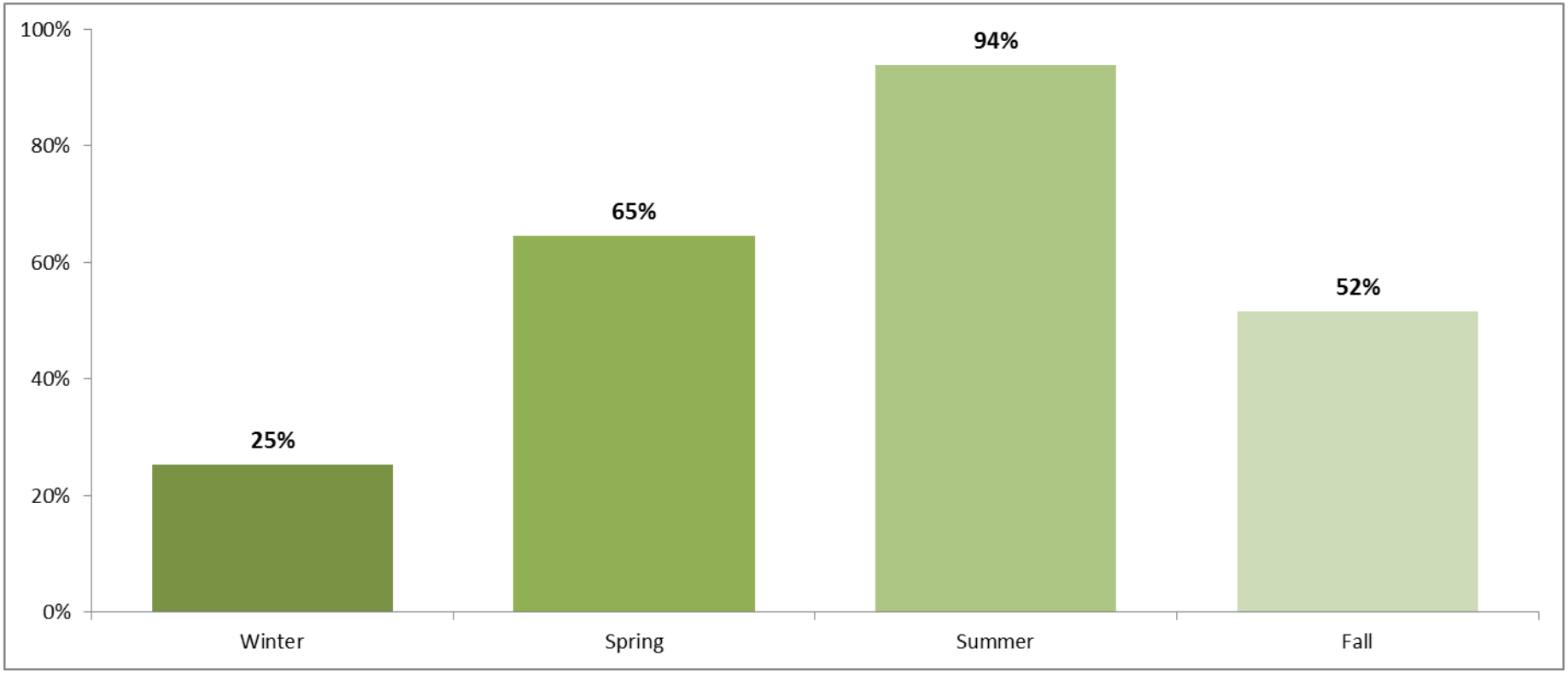
Of those who visited local creeks, most preferred a single creek, and very few visited all three.



Q5: Do you spend time around any of these creeks? (check all that apply)

Intercept – Creek Popularity – Season Visited

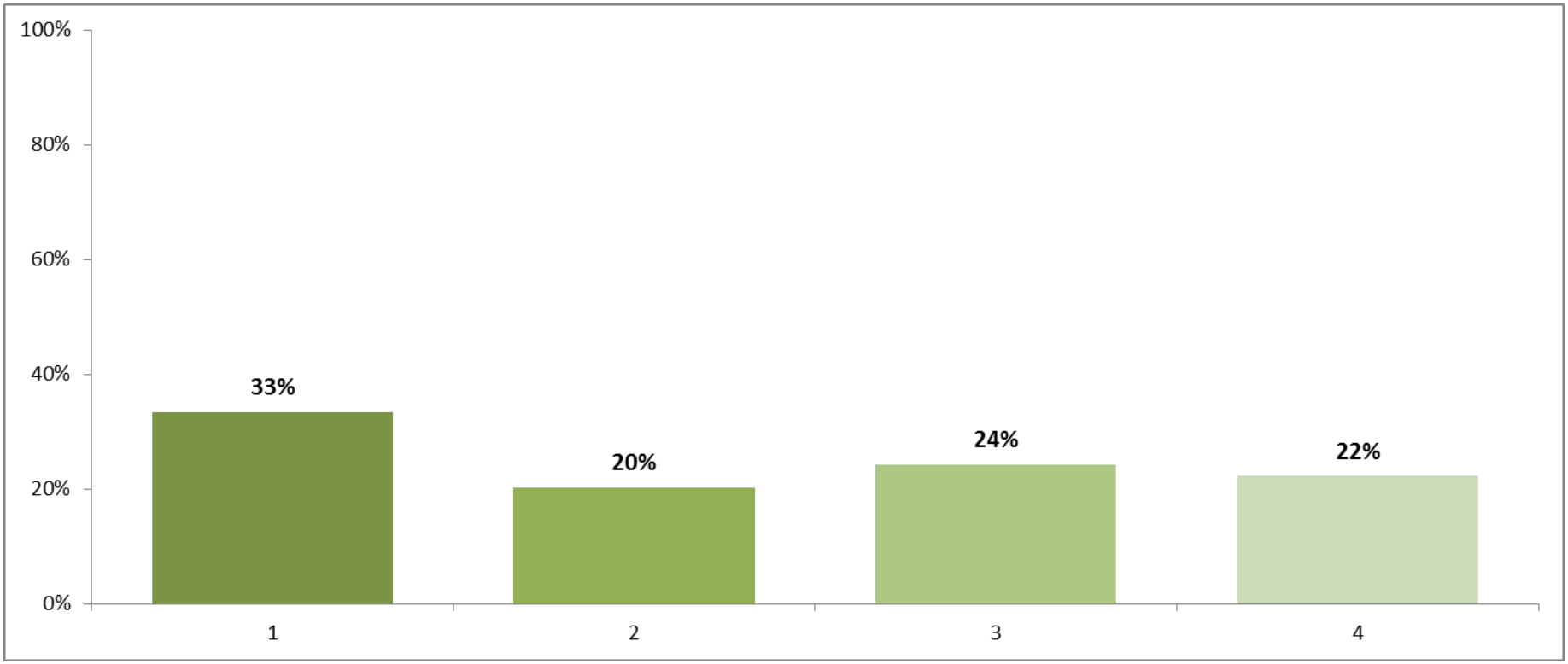
Summer was the most popular season for creek visits, followed by spring, then autumn.



Q6: In what seasons do you visit the creek(s)? (check all that apply)

Intercept – Creek Popularity – No. of Seasons Visited

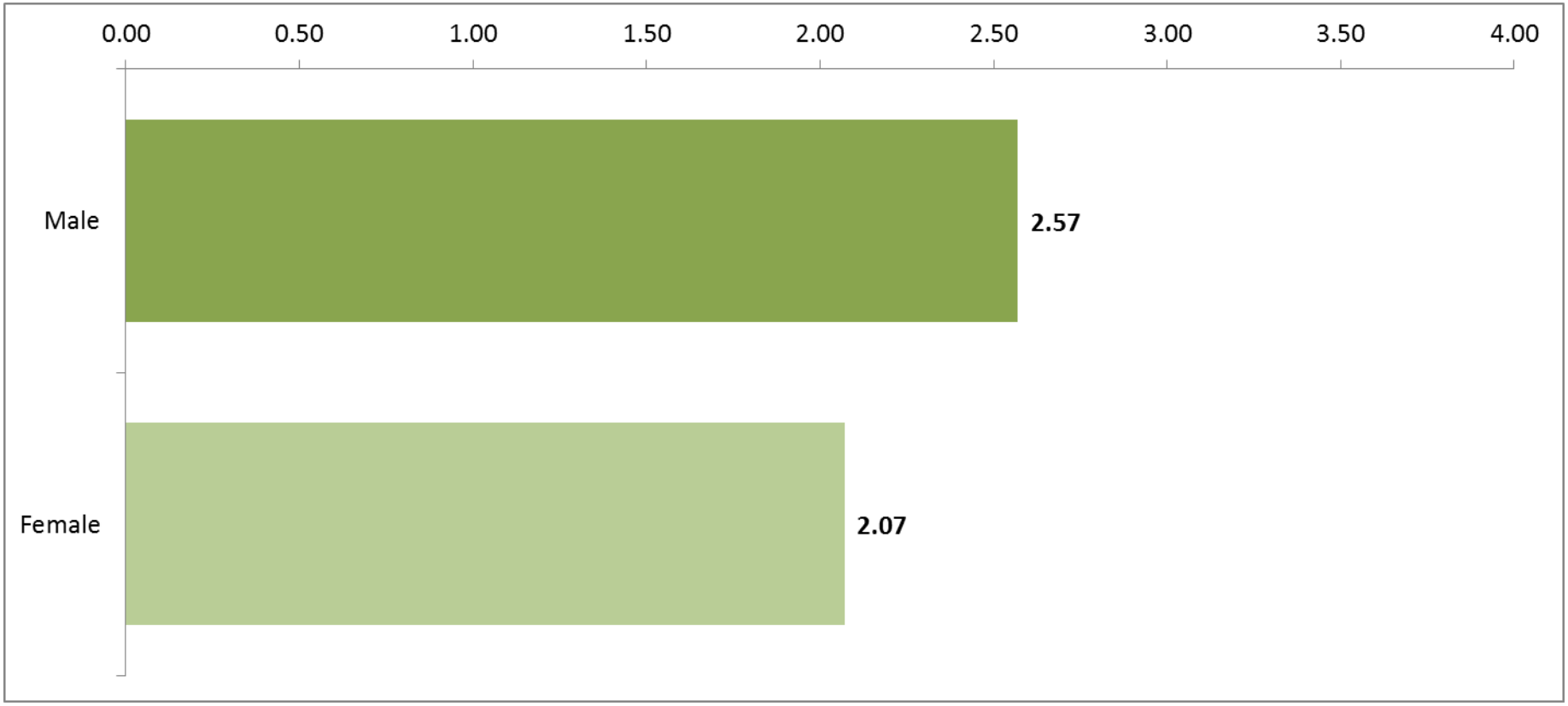
A third of respondents visited local creeks during just one season,
and 22% visited local creeks year-round.



Q6: In what seasons do you visit the creek(s)? (check all that apply)

Intercept – Creek Popularity – Seasons by Gender

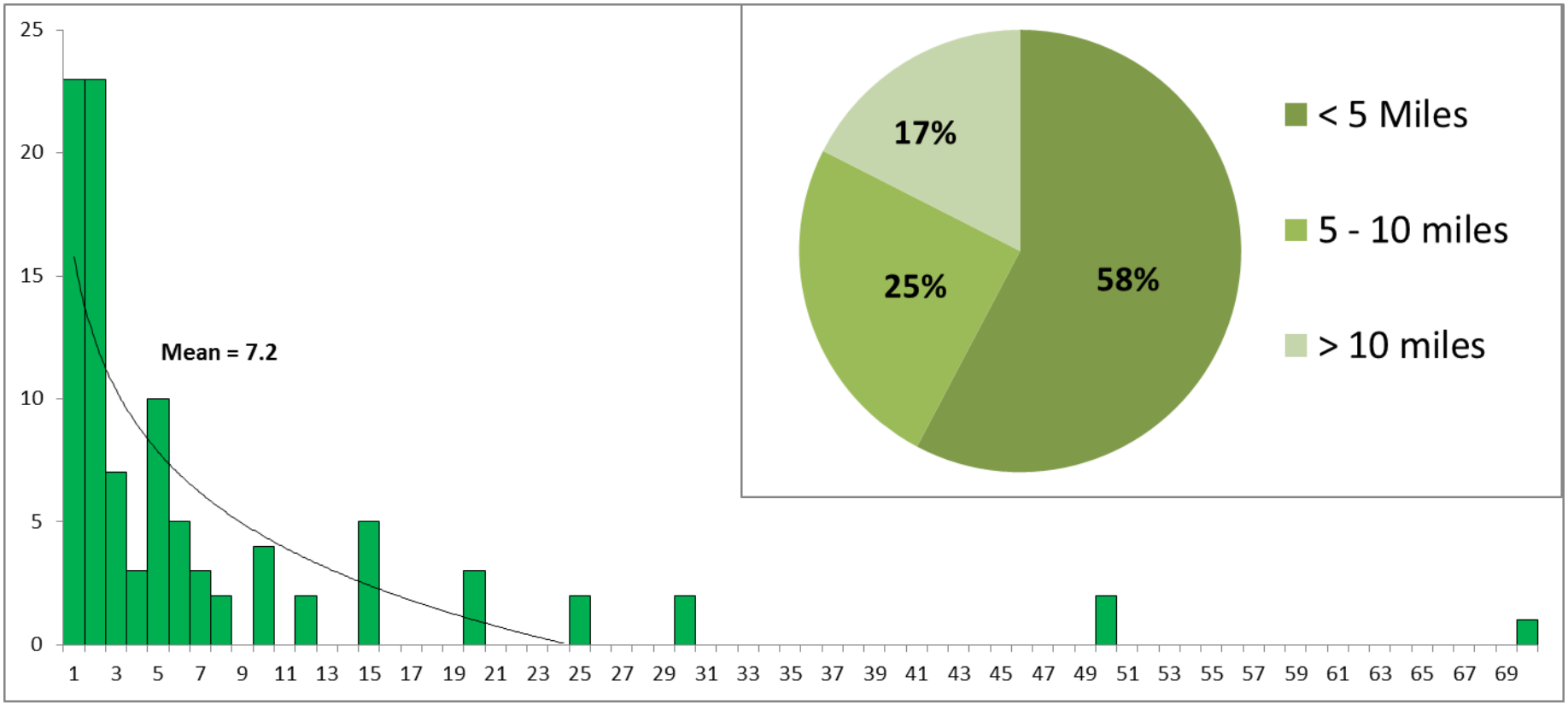
Males visited local creeks more seasons (statistically significant) than females in this sample.



Q6: In what seasons do you visit the creek(s)? (check all that apply)

Intercept – Distance to Creeks

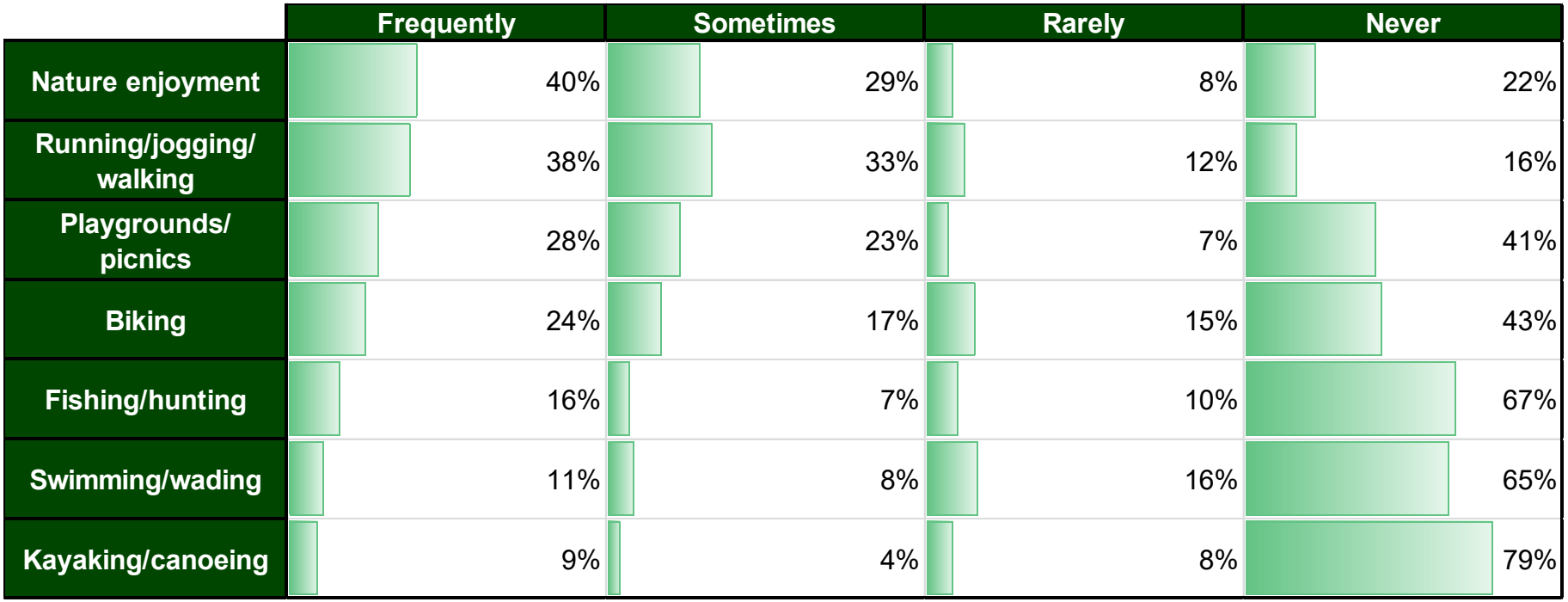
The mean distance respondents drove to creeks was 7.2 miles, though the majority of respondents drove less than 5 miles and 83% drove less than 10 miles to go to creeks.



Q7. How many miles do you drive to go to the creek(s)?

Intercept – Activities

Nature enjoyment and *Running/jogging/walking* were the most frequent activities at local creeks. *Fishing/hunting*, *Swimming/wading* and *Kayaking/canoeing* were all infrequent activities.

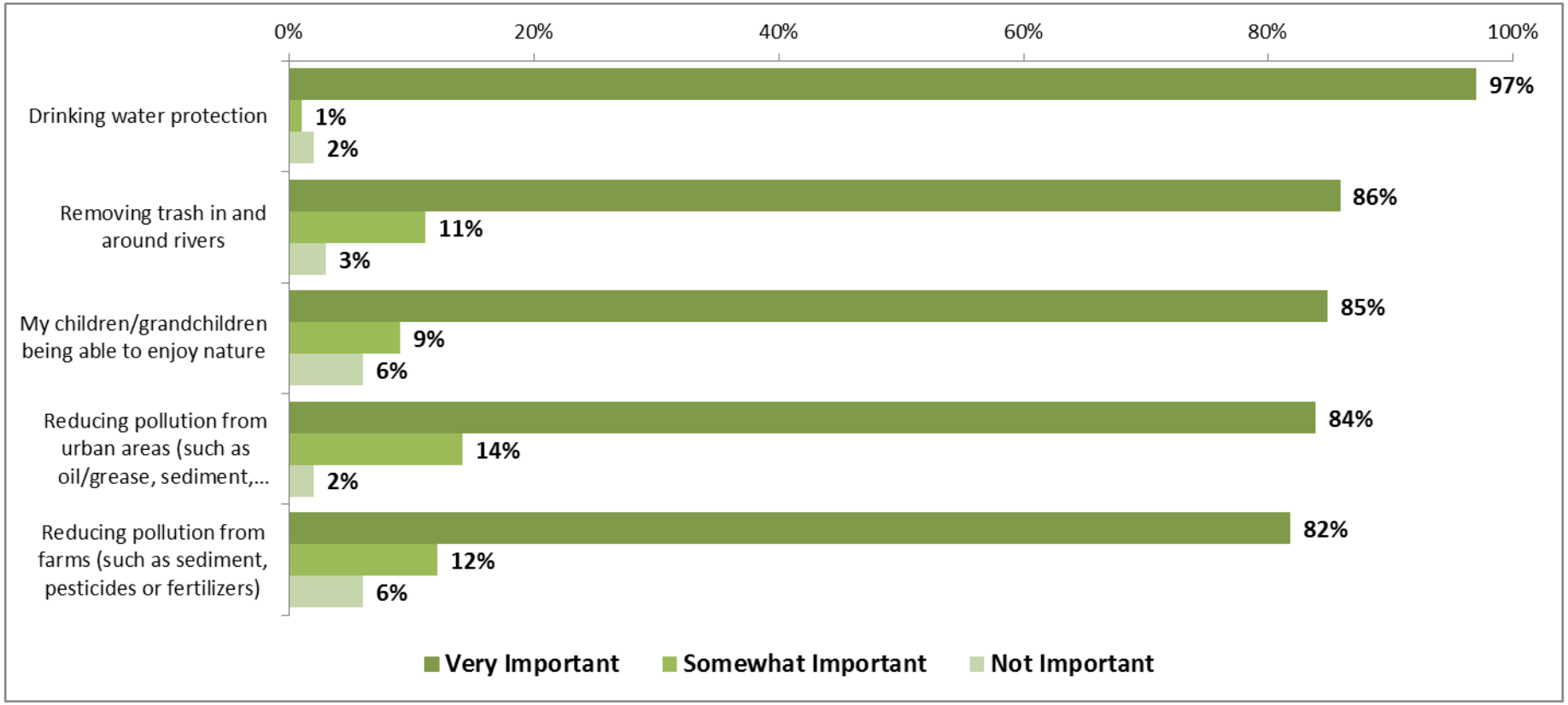


	Frequently	Sometimes	Rarely	Never
Nature enjoyment	40%	29%	8%	22%
Running/jogging/ walking	38%	33%	12%	16%
Playgrounds/ picnics	28%	23%	7%	41%
Biking	24%	17%	15%	43%
Fishing/hunting	16%	7%	10%	67%
Swimming/wading	11%	8%	16%	65%
Kayaking/canoeing	9%	4%	8%	79%

Q8: Which of the following types of activities do you do around the creeks and how often?

Intercept – Environmental Issues

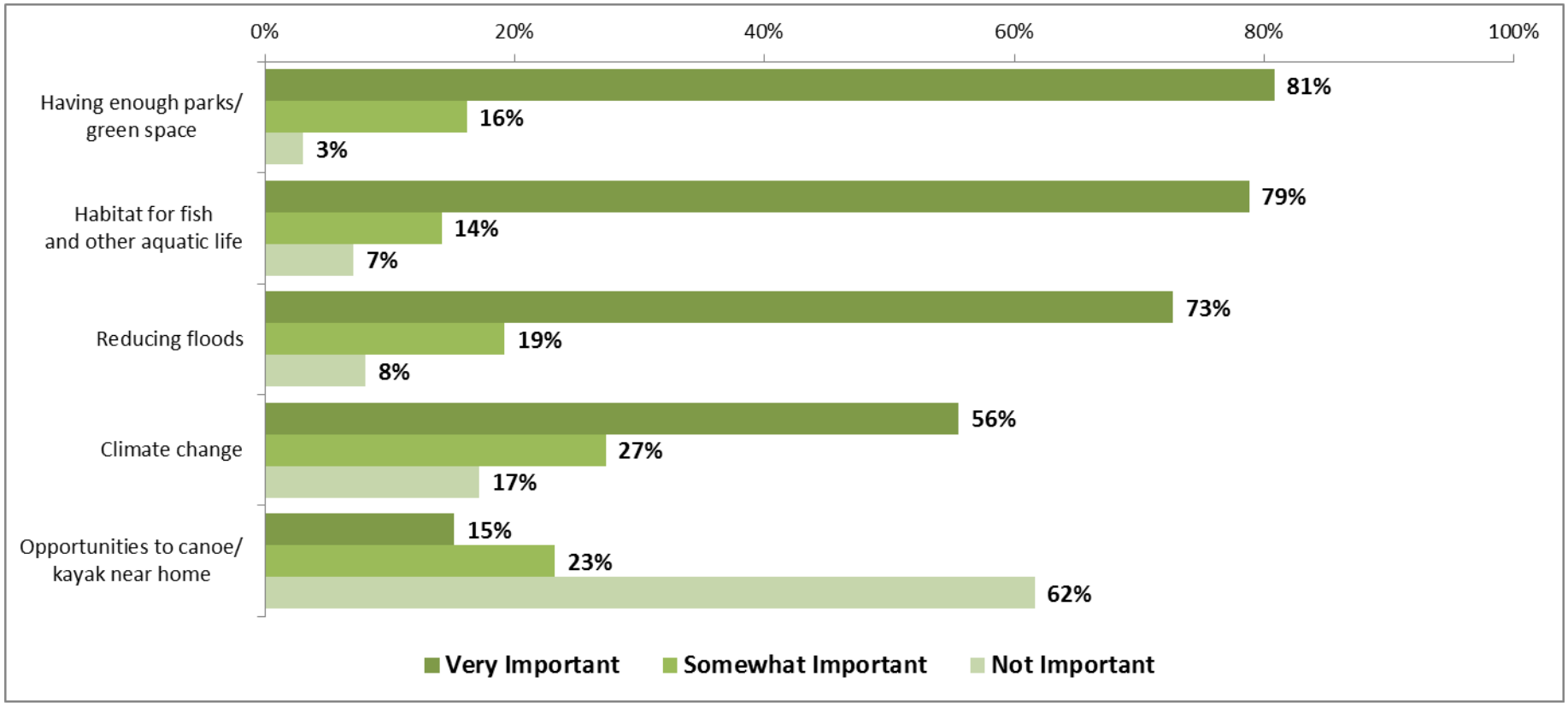
These five issues were rated the most important by respondents.
Drinking water protection was unmistakably the most important issue to the overall group.



Q9: How important are the following issues to you?

Intercept – Environmental Issues (cont.)

These five issues were rated the least important by respondents. Notably, *Opportunities to canoe/kayak near home* was the only issue a majority of respondents rated "Not Important."



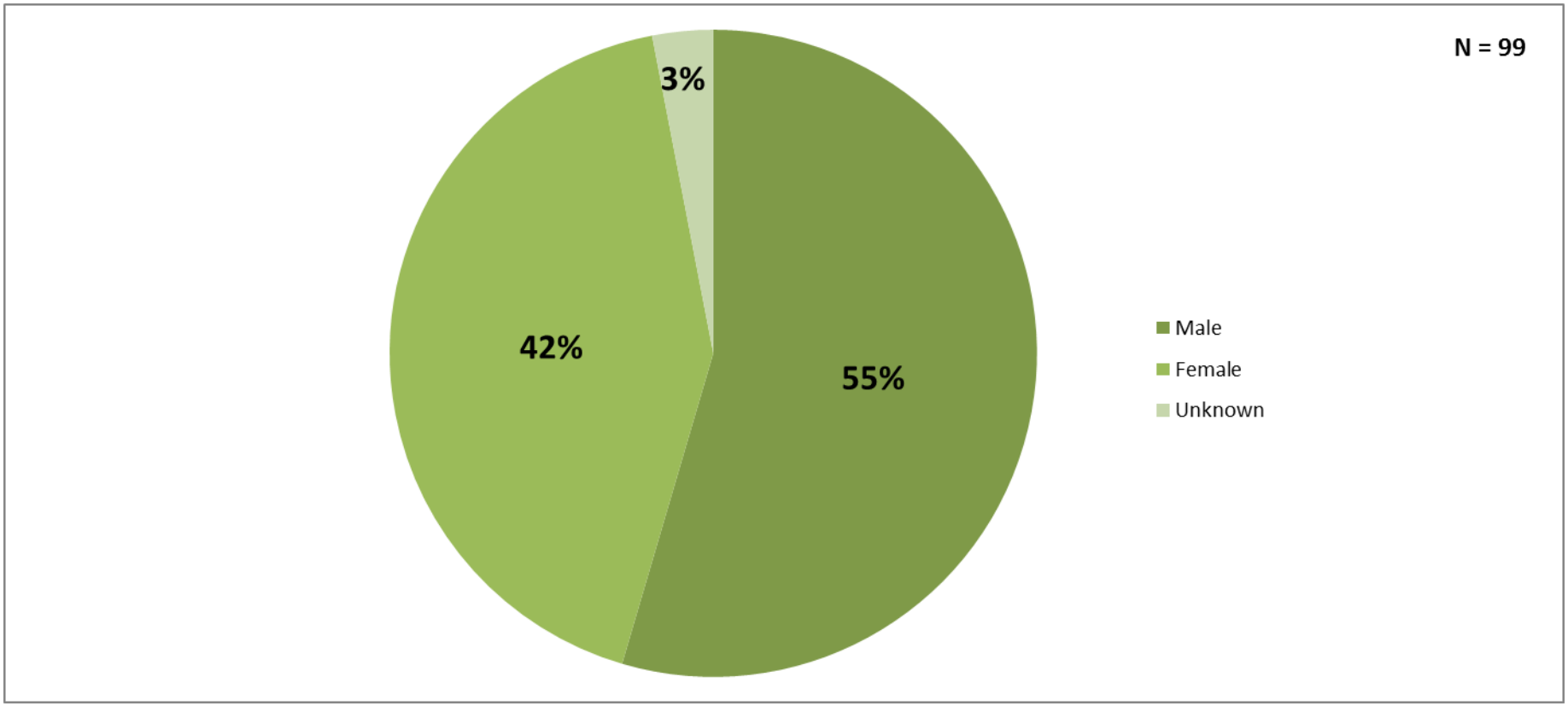
Q9: How important are the following issues to you?

Intercept

Demographics

Intercept – Gender

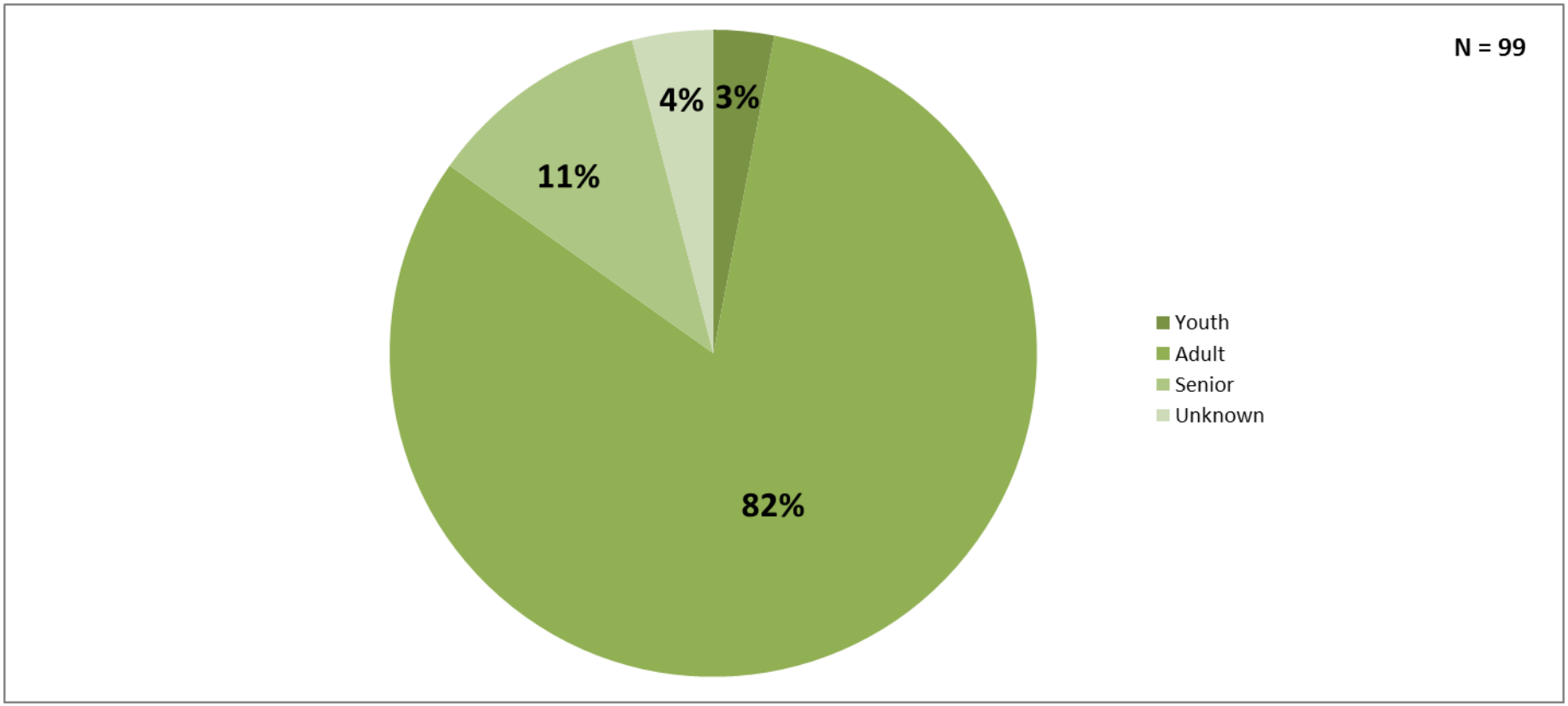
The sample included more males than females.



S3: Respondent Gender

Intercept – Age

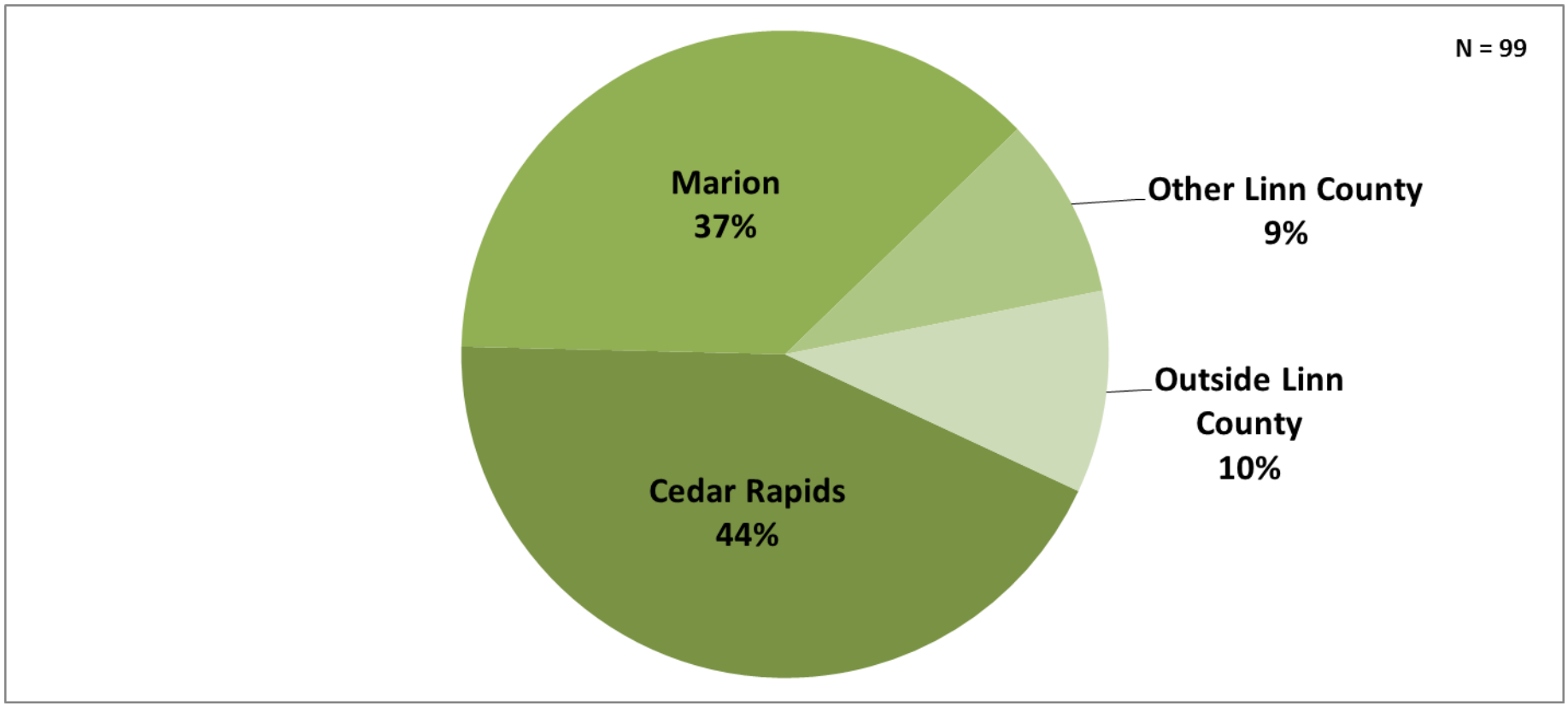
A large majority of the respondents were adults, with some seniors and very few youths.



S4: Respondent Age (assessed by interviewer)

Intercept – Location

A large majority of the respondents were from Linn County.



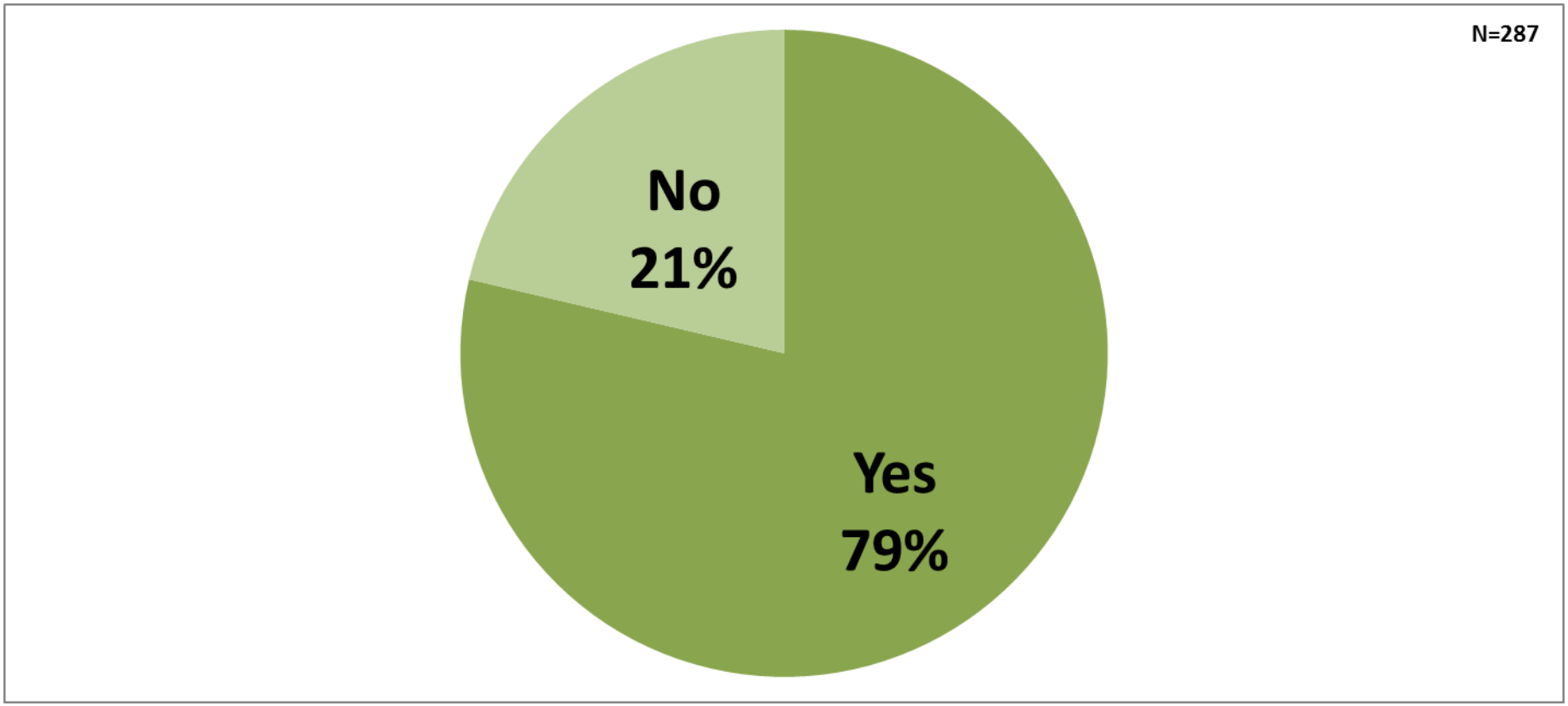
Q2: What city/town do you live in?

Indian Creek Watershed - Results

Residents

Residents – Rainwater Knowledge

A majority of Residents indicated that they do
know where rainwater goes when it runs off their properties.



Q21. Do you know where rainwater goes when it runs off your property?

Residents – Rainwater Knowledge (cont.)

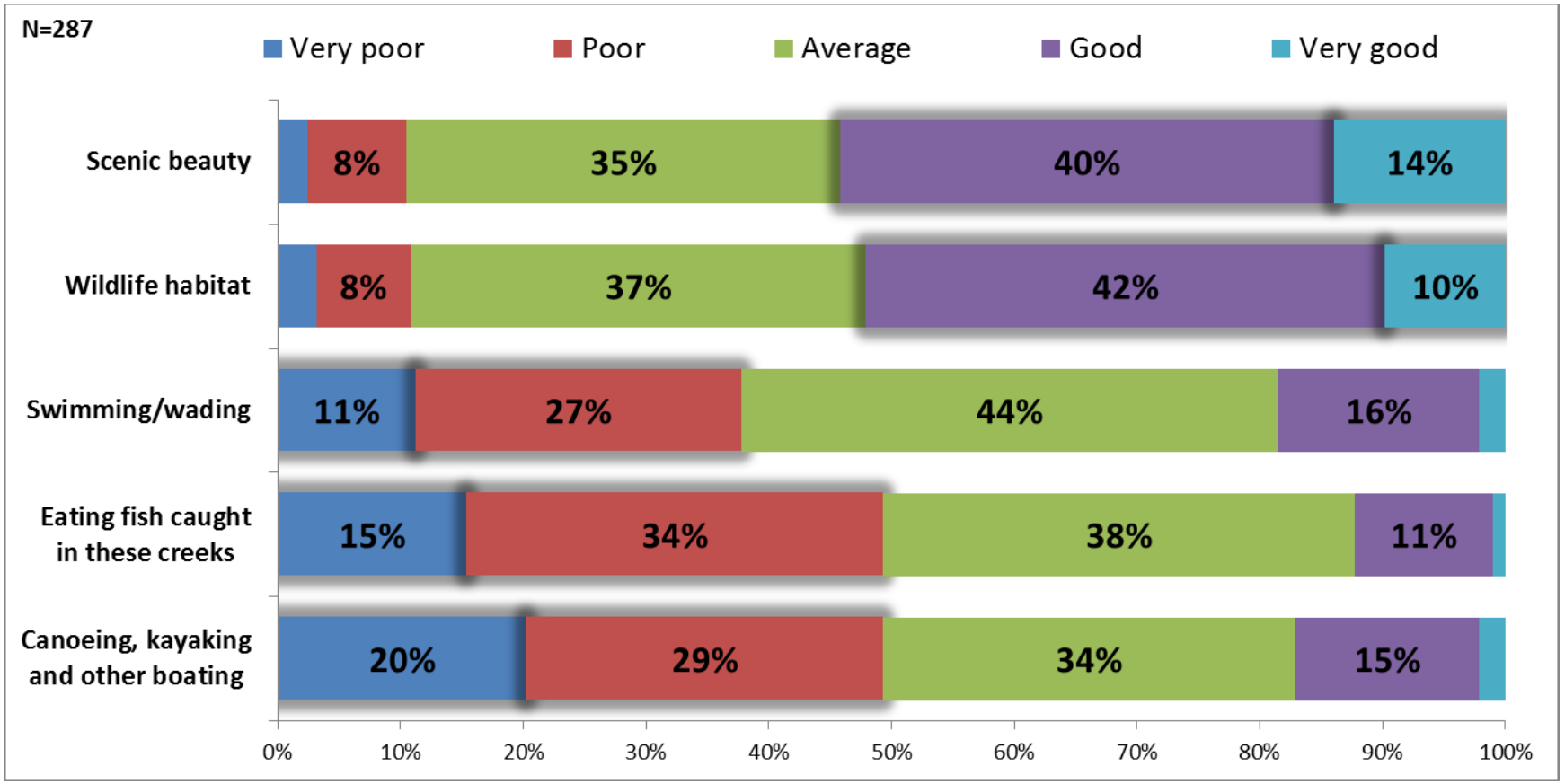
The two most common responses for where rainwater goes were ***Indian Creek*** and ***storm sewer/gutter***.

Characteristic	Frequency
Indian Creek	85
Storm sewer/gutter	78
City sewer	27
Dry Creek	20
Unnamed/other creek	18
Ditch/pond/other	14
Squaw Creek	11

Q21. Do you know where rainwater goes when it runs off your property?

Residents – Water Quality

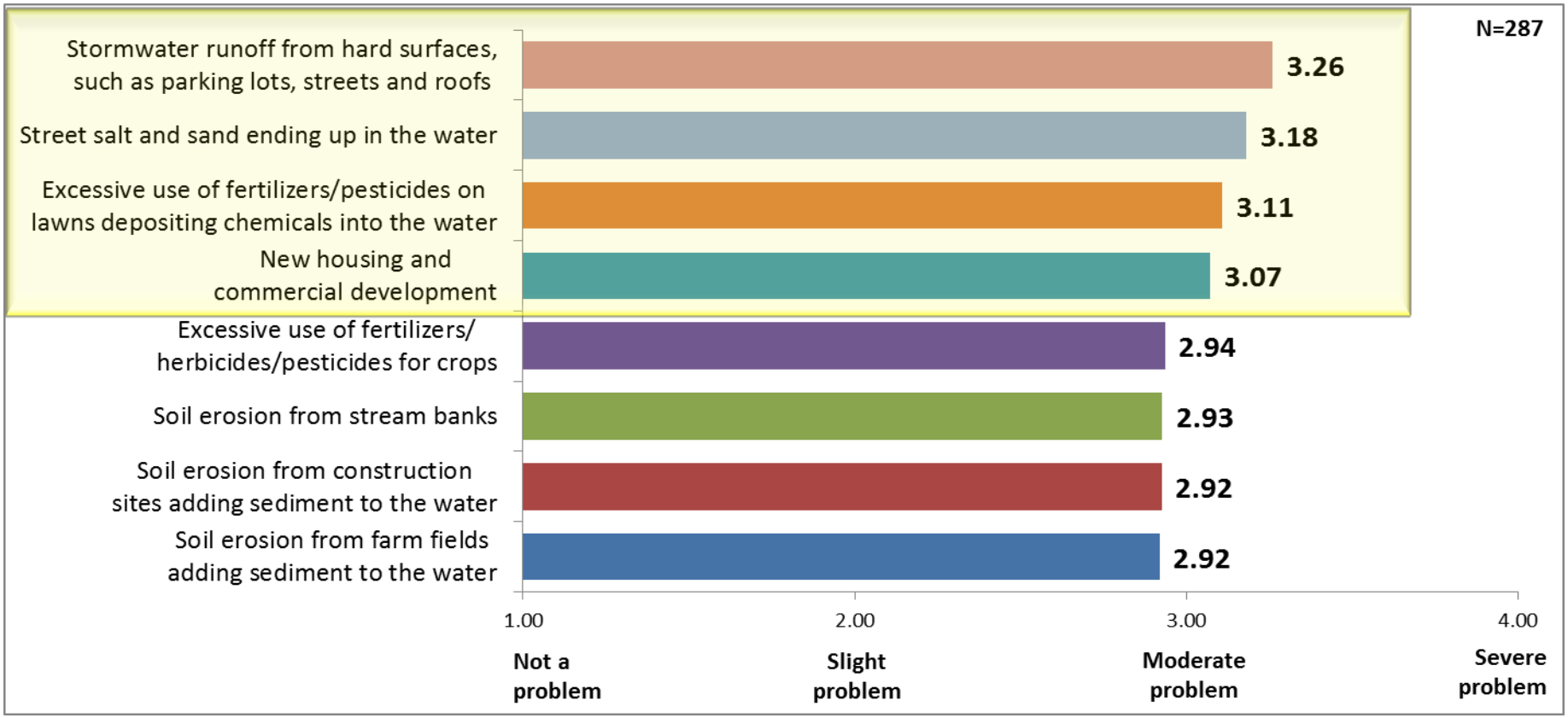
Roughly half of Residents evaluated water quality ***positively for activities that do not require touching the water*** and ***negatively for activities that do require touching the water***.



Q12. To the best of your knowledge, how would you describe the quality of water in **your area's streams** (Indian, Dry and Squaw Creeks) for the following activities?

Residents – Contributing Issues

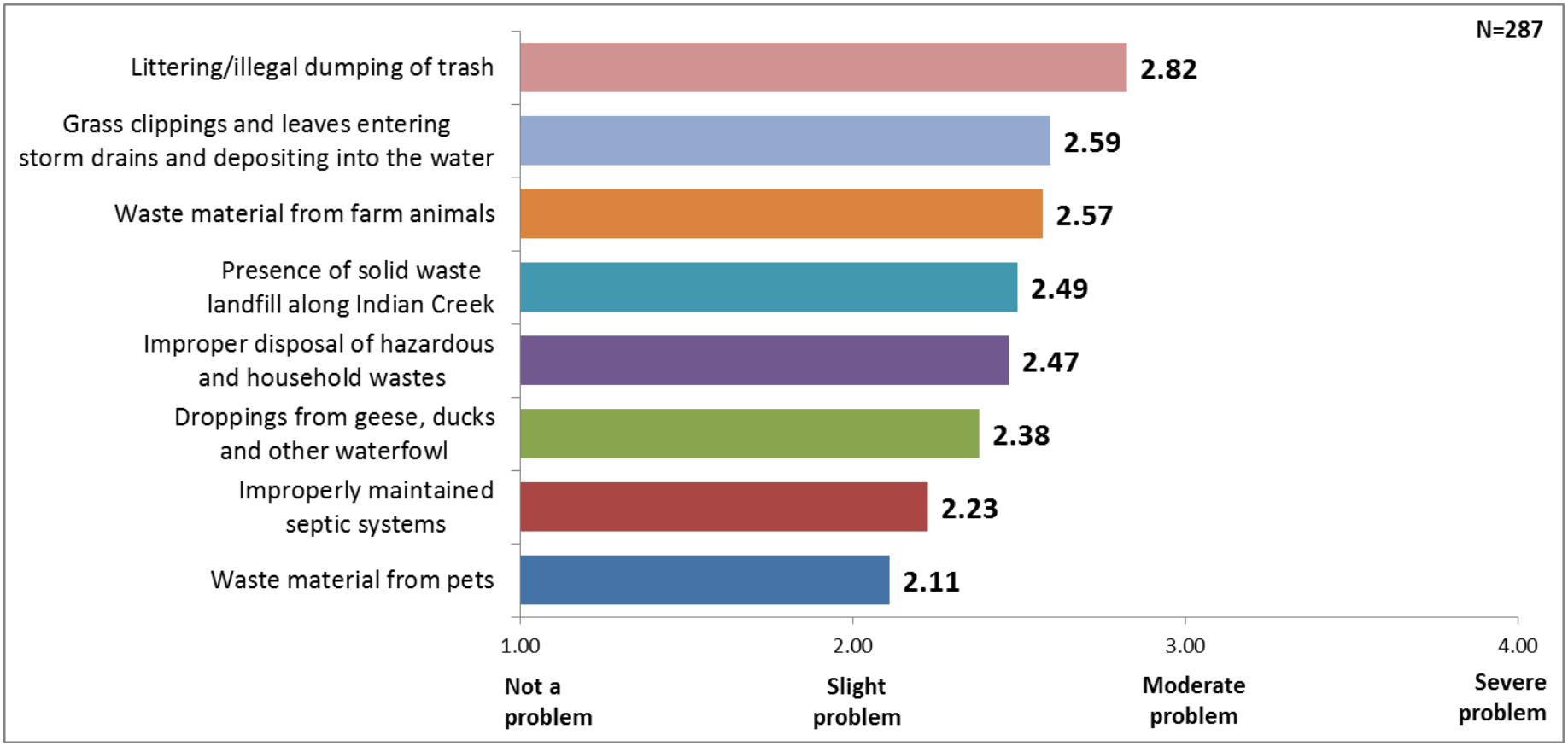
Residents scored four issues as moderate-to-severe problems. Of these, the most severe problem was ***stormwater runoff from hard surfaces, such as parking lots, streets and roofs***.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Contributing Issues (cont.)

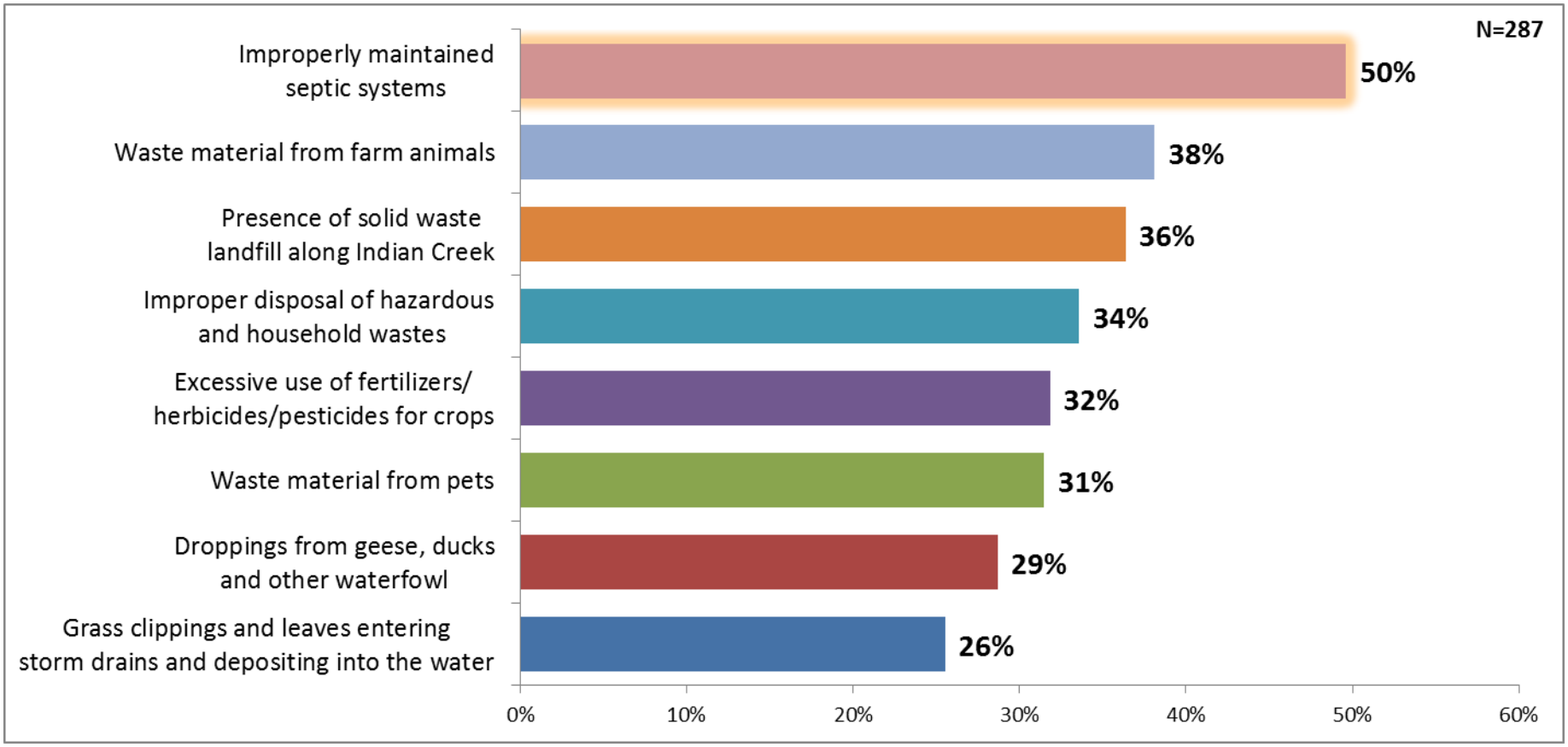
The slightest problem, according to Residents, is waste material from pets.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Contributing Issues (cont.)

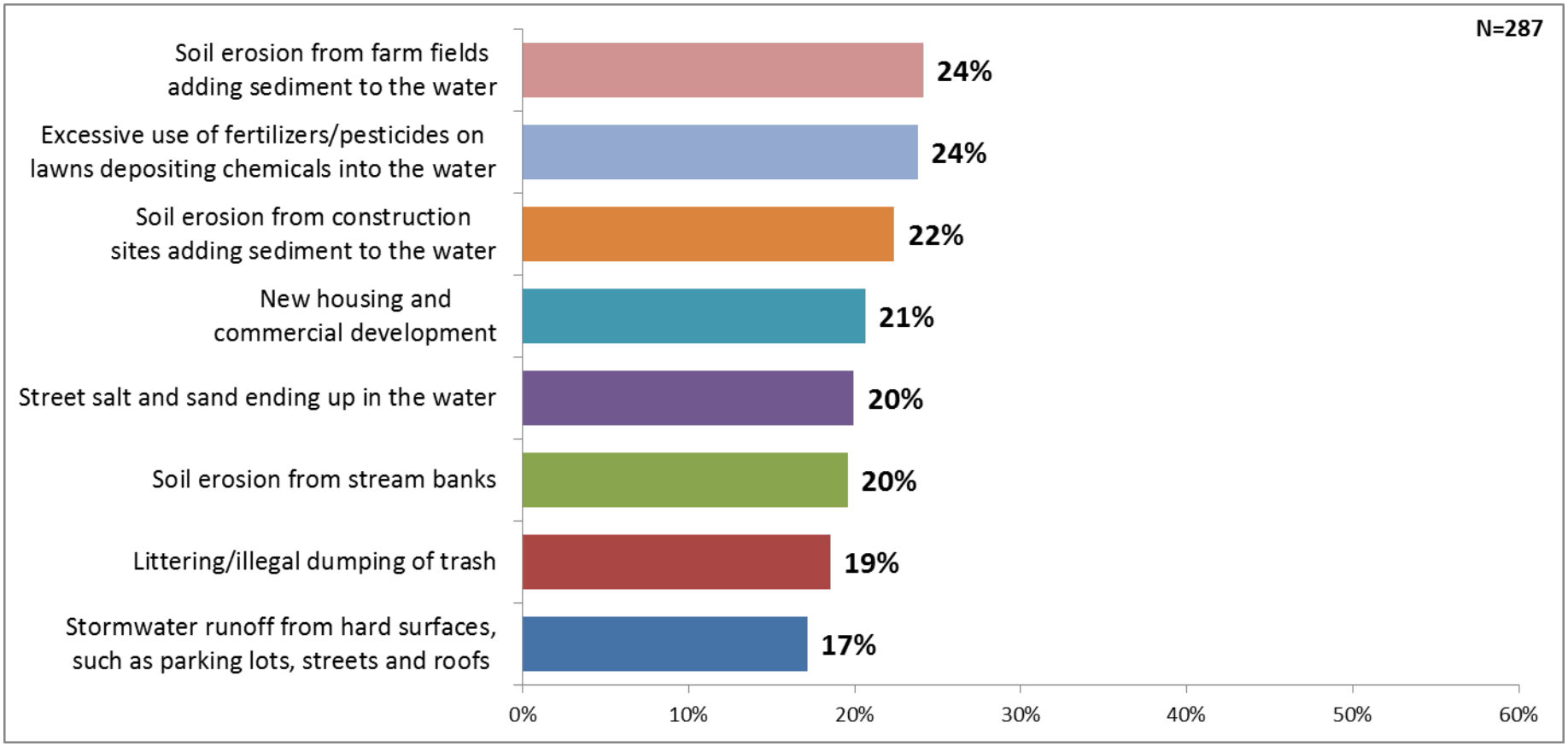
Residents were allowed to indicate if they ***didn't know*** about issues contributing to problems. Fully half of all Residents did not know about the issue of ***improperly maintained septic systems***.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Contributing Issues (cont.)

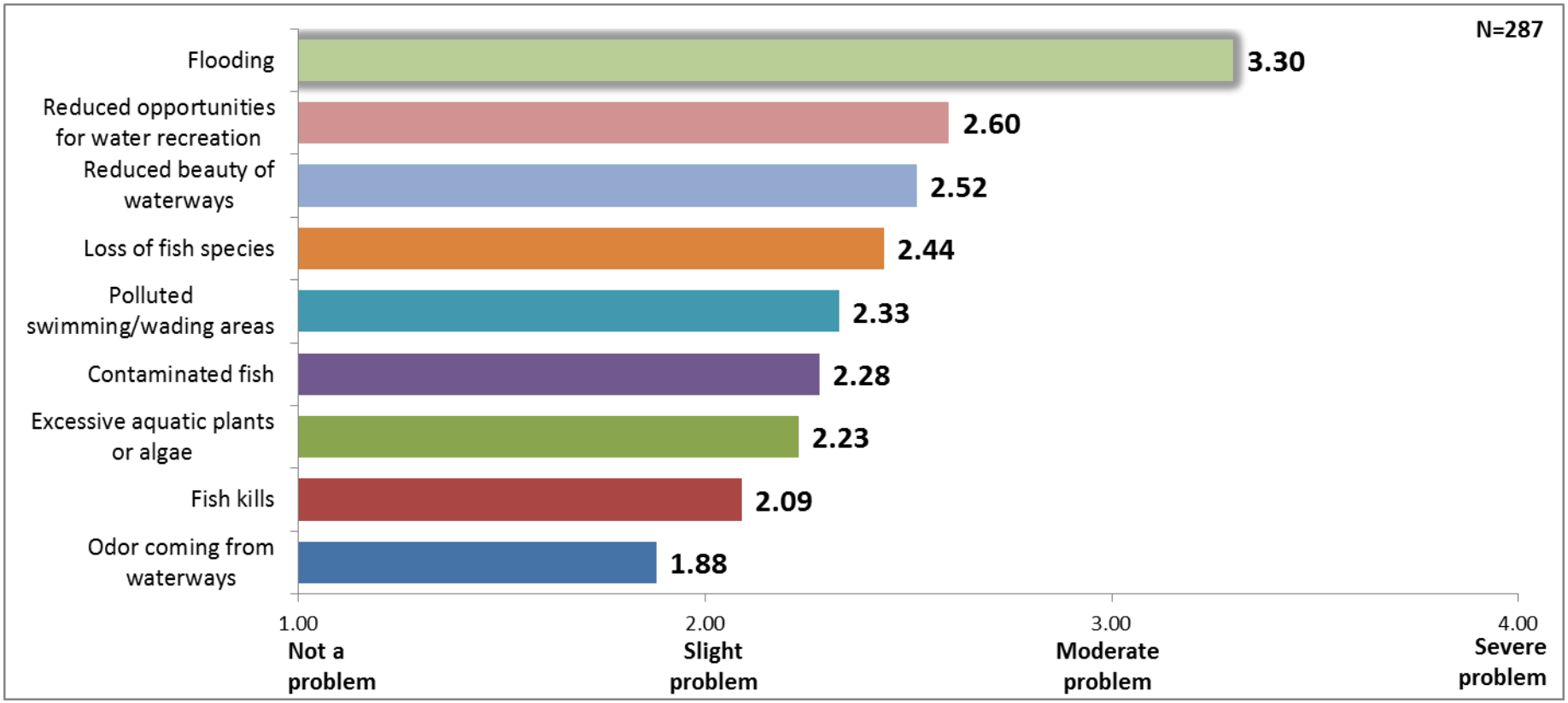
Residents were somewhat more knowledgeable about issues like ***stormwater runoff from hard surfaces*** and ***littering/illegal dumping of trash***.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Ongoing Problems

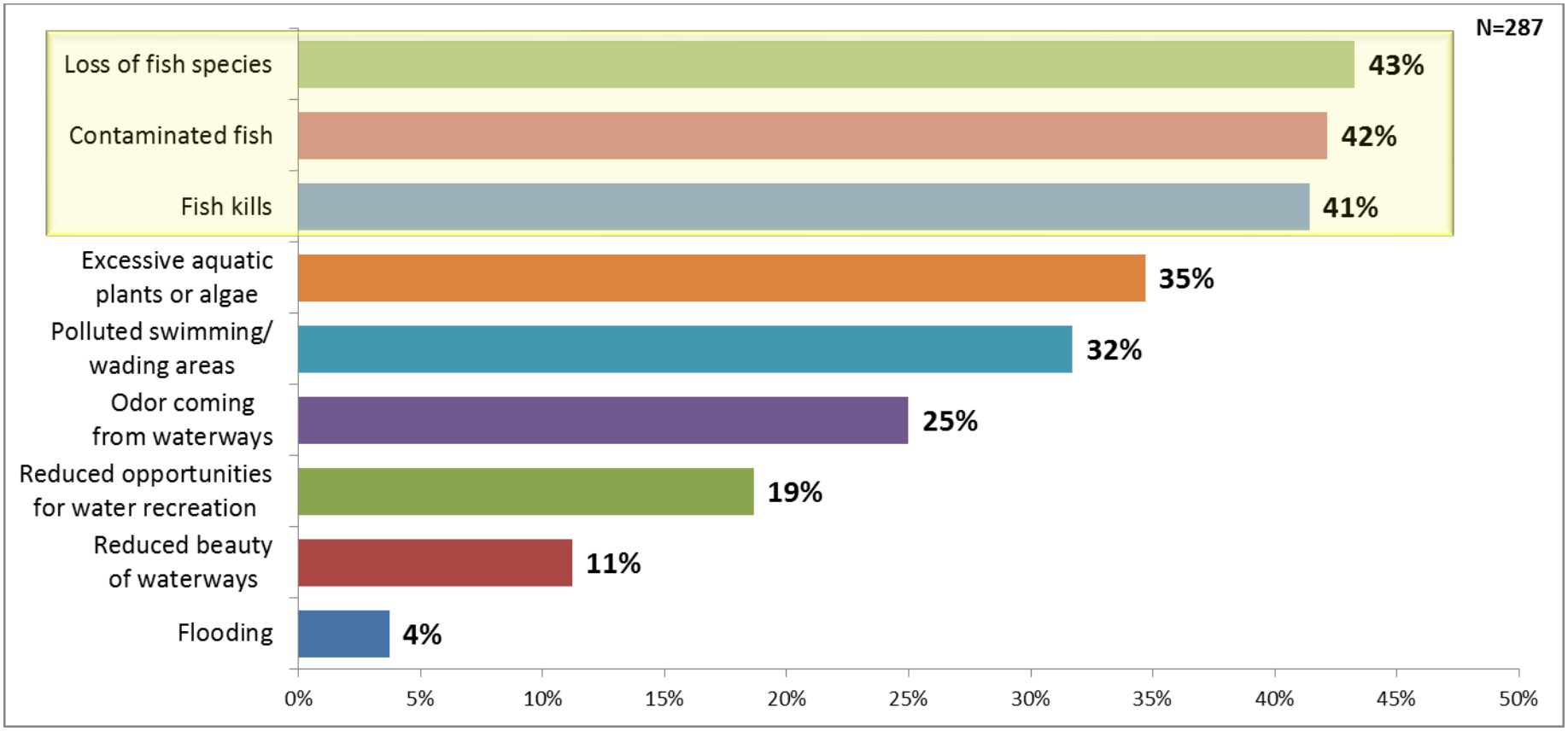
Flooding was the only ongoing problem that scored within the ***moderate-to-severe problem*** range. This is a standout ongoing problem.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Ongoing Problems (cont.)

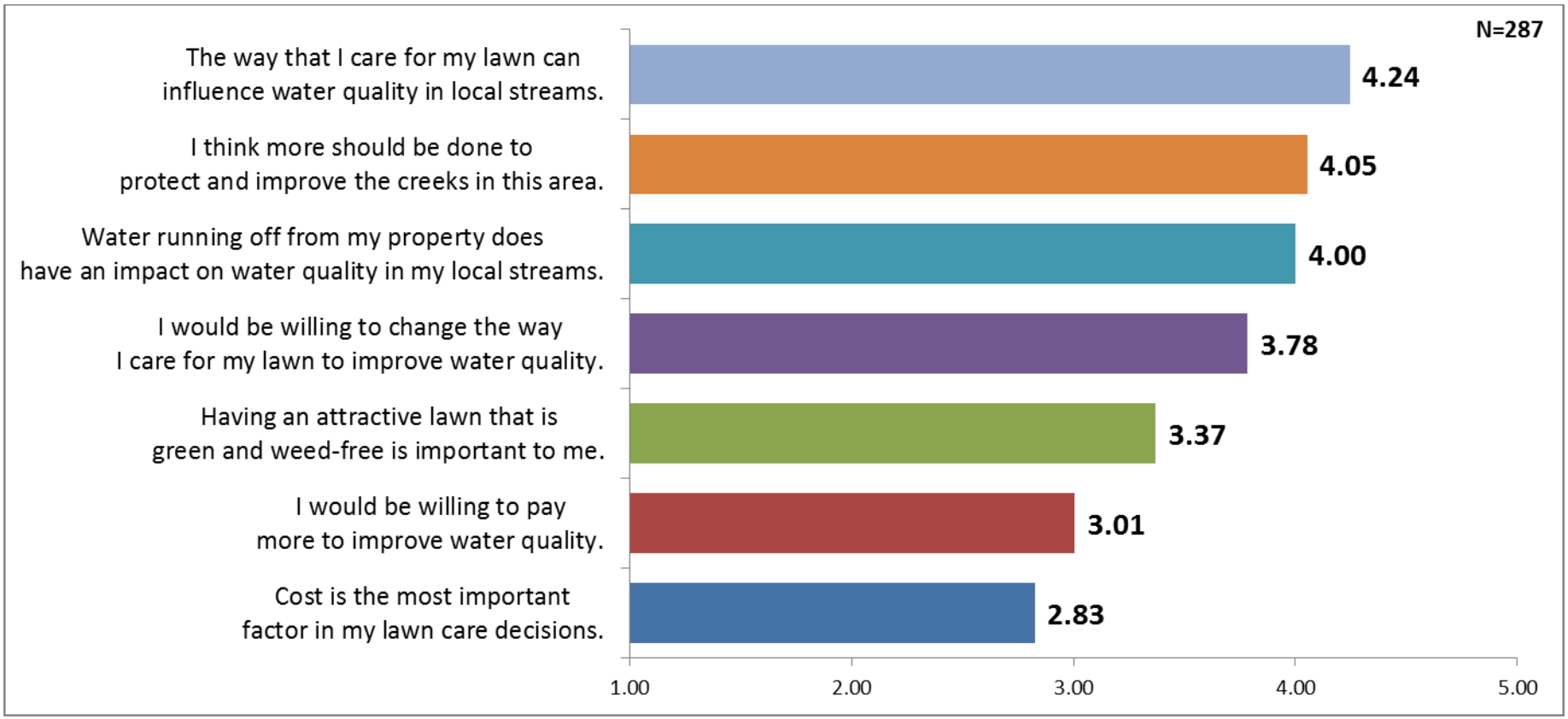
Residents were allowed to specify if they ***didn't know*** about ongoing problems. Over 40% showed unawareness of three related issues: ***loss of fish species***, ***contaminated fish*** and ***fish kills***.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Residents – Beliefs

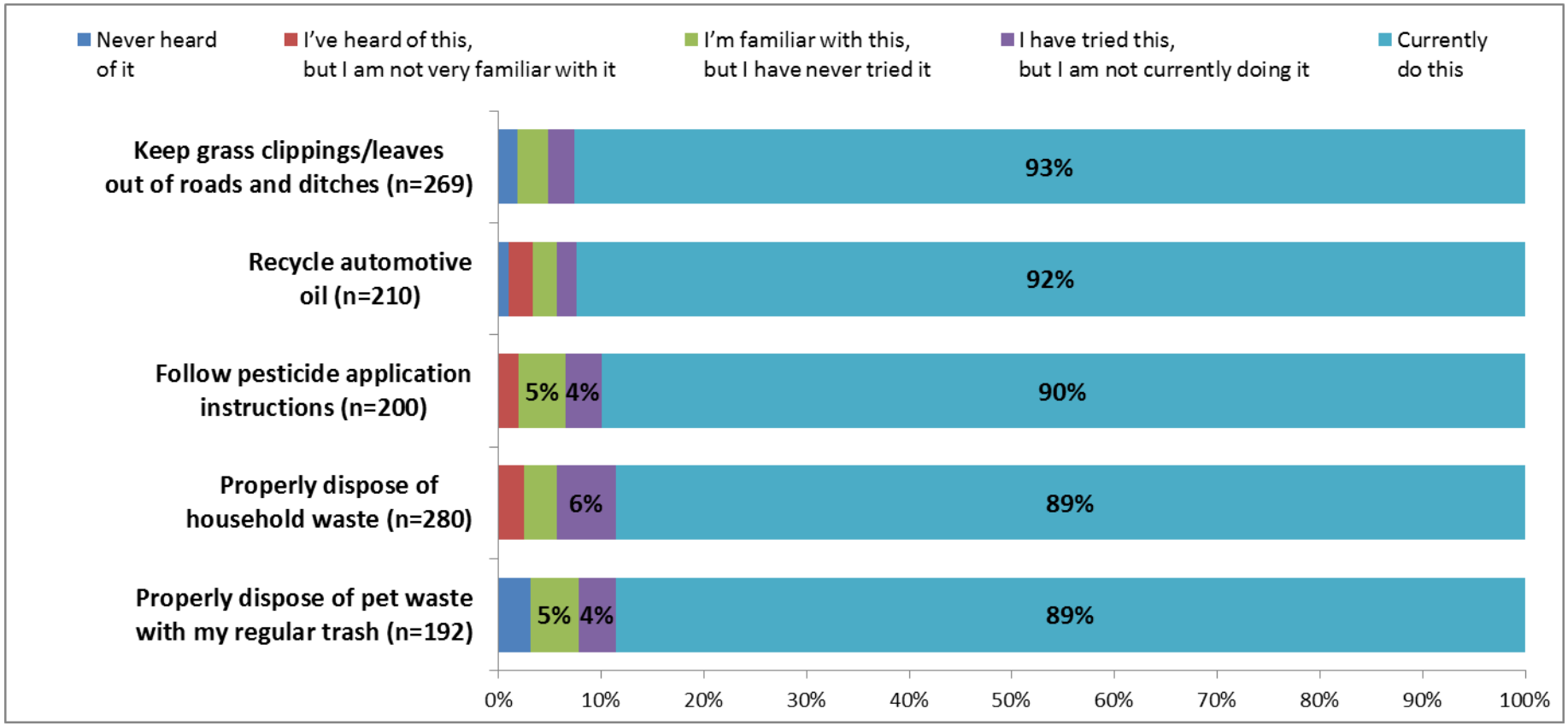
Residents recognized the relationship between their lawn care practices and the health of local streams, want to protect creeks and are willing to be part of that effort.



Q23. Please indicate your level of agreement with the statements below.

Residents – Helpful Practices

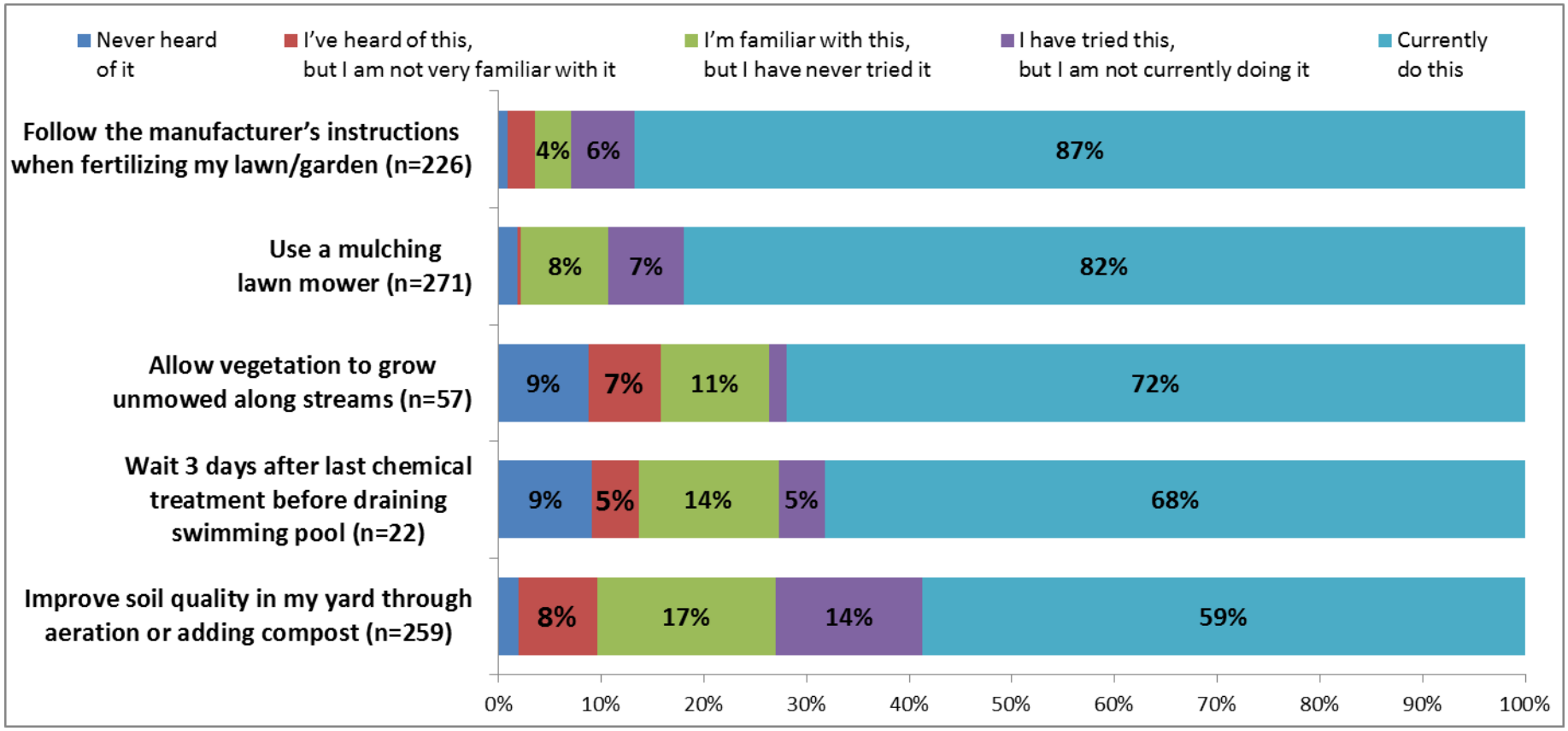
Large majorities of Residents currently practice several helpful behaviors.



Q25. Please indicate your level of experience with each of the following practices. If it doesn't apply to you, select the option "Not applicable to me."

Residents – Helpful Practices (cont.)

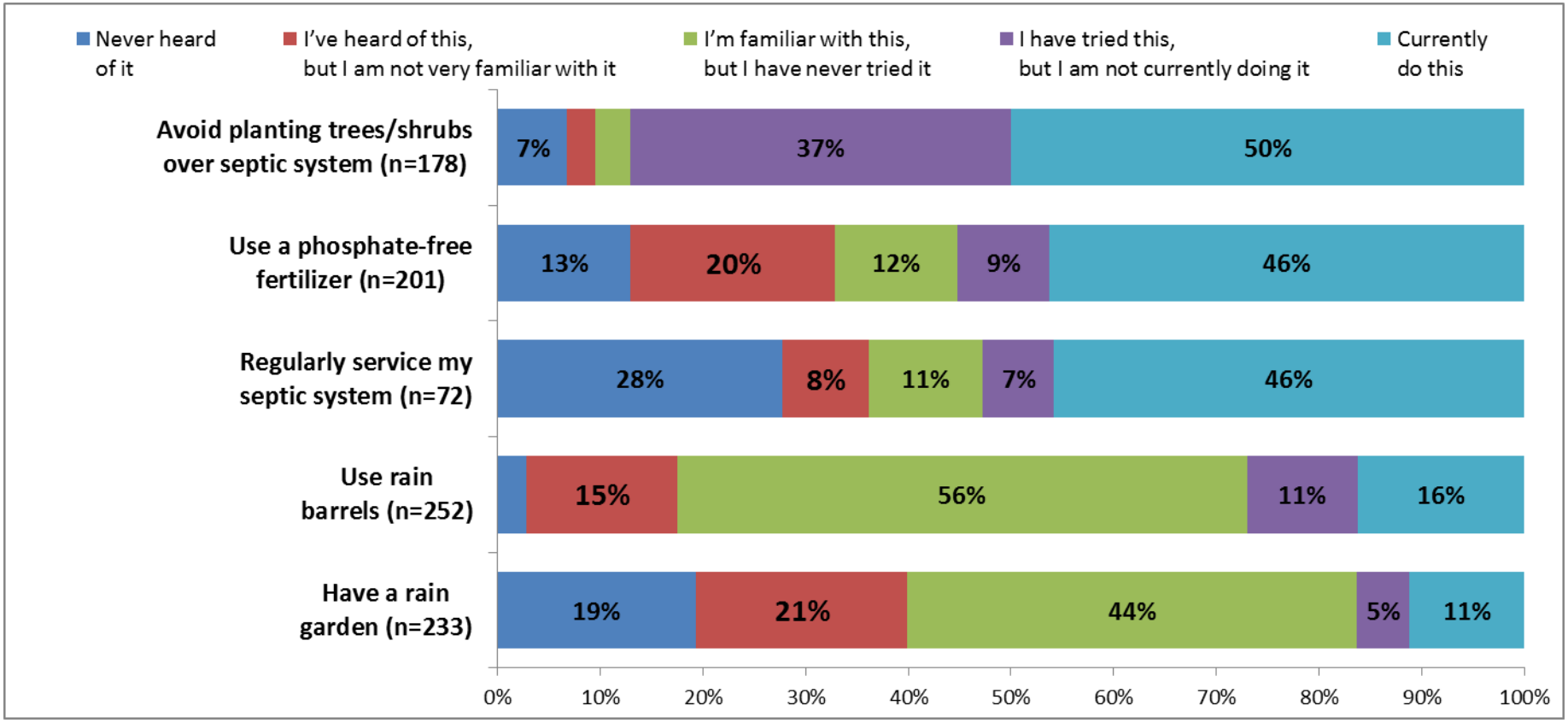
These behaviors are also practiced by a majority of Residents; in some case, a very large majority.



Q25. Please indicate your level of experience with each of the following practices. If it doesn't apply to you, select the option "Not applicable to me."

Residents – Helpful Practices (cont.)

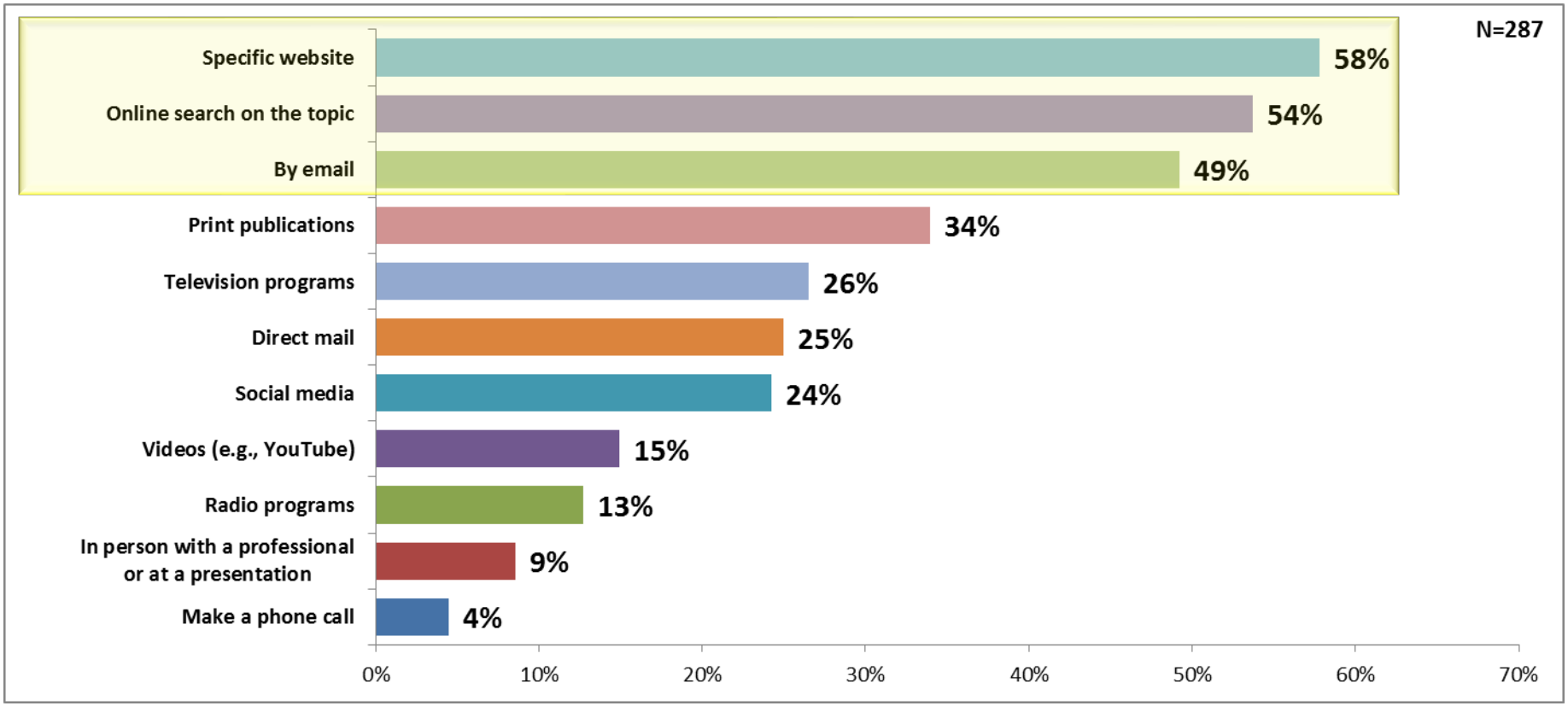
Using rain barrels and ***having a rain garden*** were the helpful practices Residents **<u>were the most familiar with, but had never tried</u>**.



Q25. Please indicate your level of experience with each of the following practices. If it doesn't apply to you, select the option "Not applicable to me."

Residents – Communication Preferences

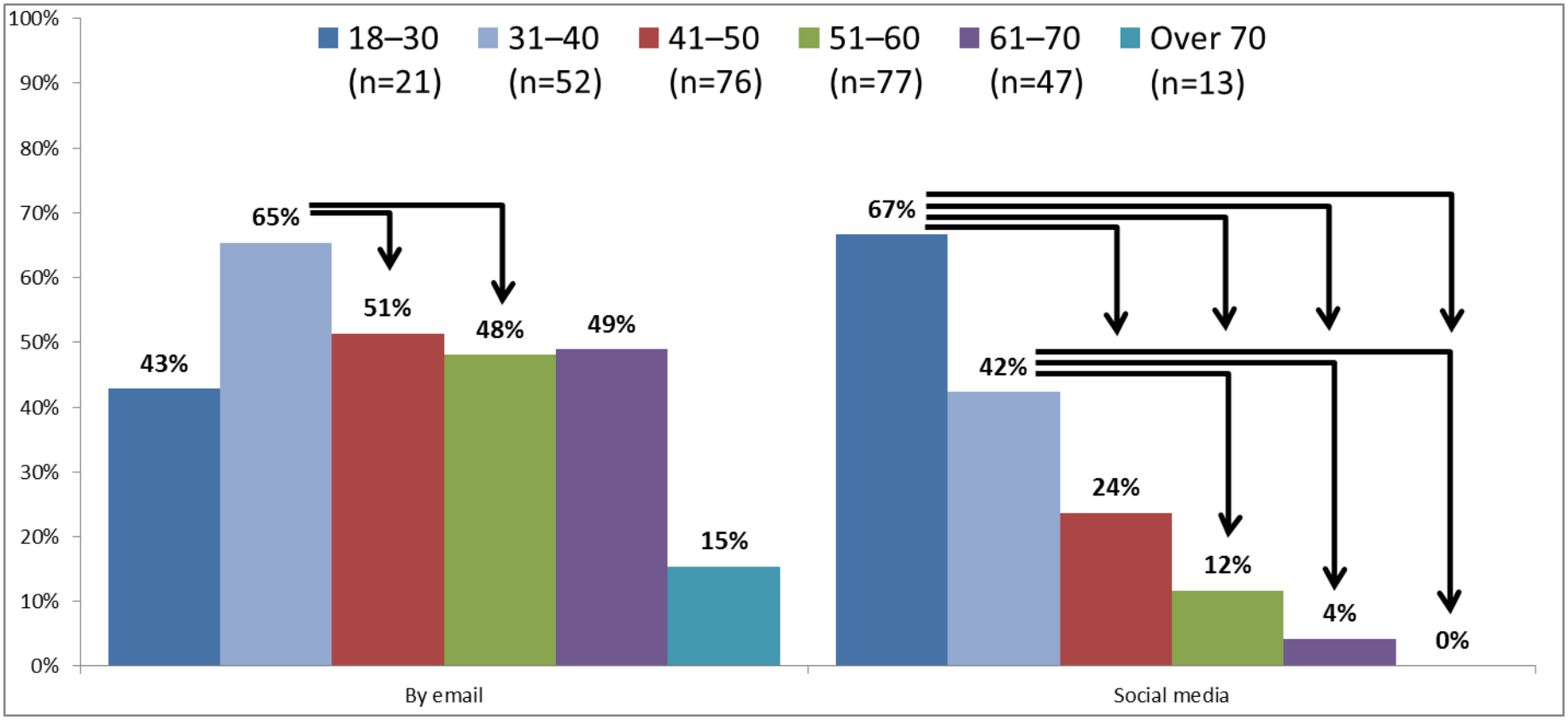
Web-based methods (***specific website, online search*** and ***by email***) were overall the most preferred methods of accessing information about soil and water resources.



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Residents – Communication Preferences

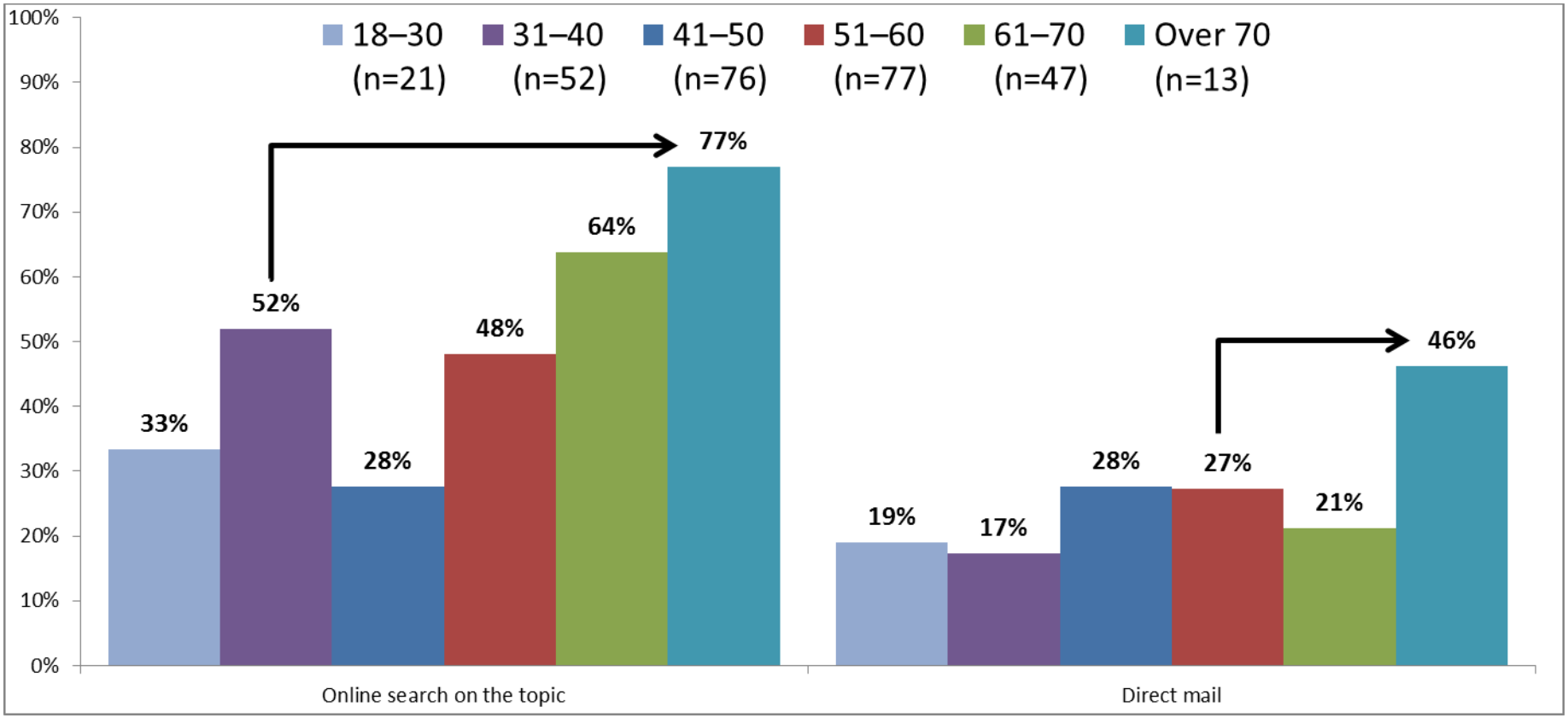
Some older age groups ***preferred email*** and ***social media***
at (statistically significant) lower rates than some younger age groups.



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Residents – Communication Preferences

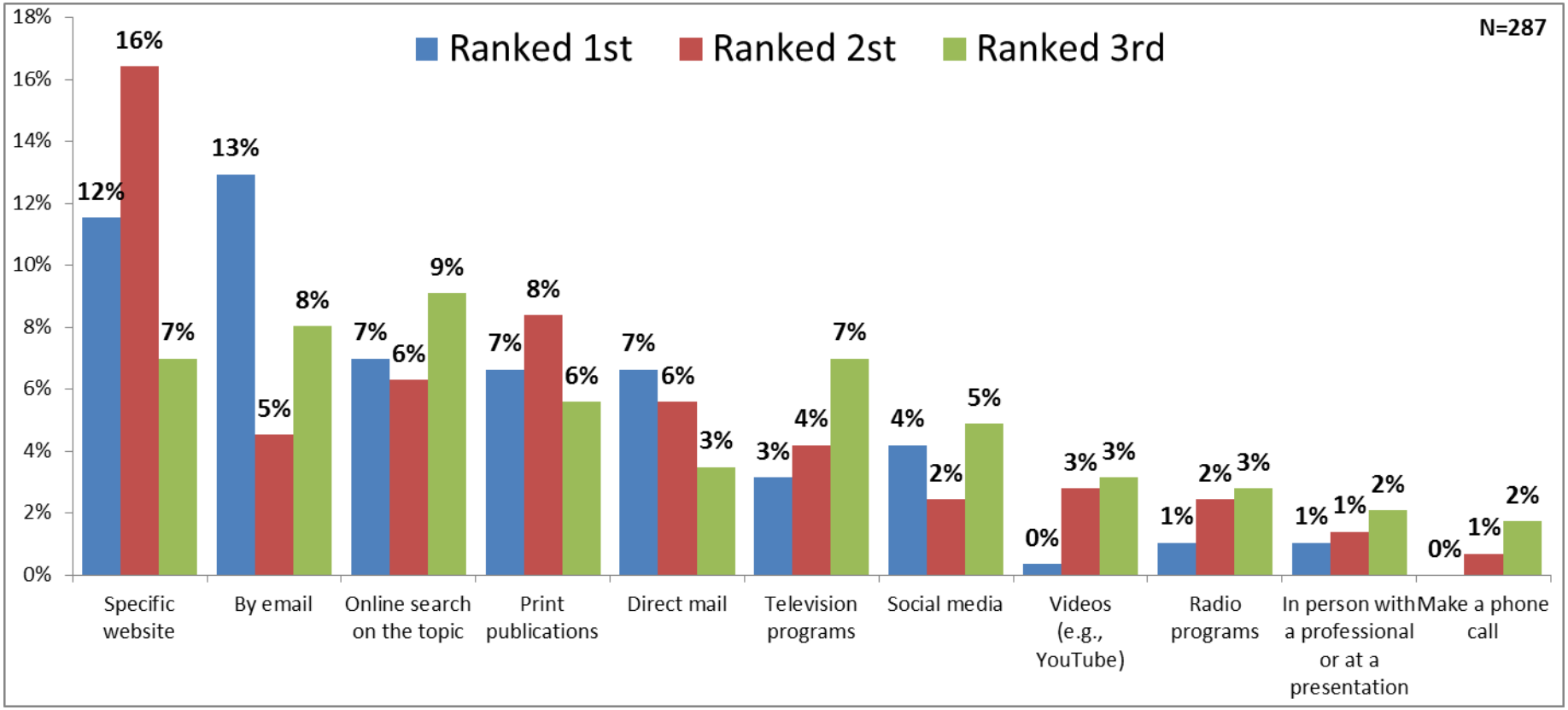
31-40 year olds preferred ***online searches*** significantly less often than those over 70.
51-60 year olds preferred ***direct mail*** significantly less often than those over 70.



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Residents – Communication Preferences (cont.)

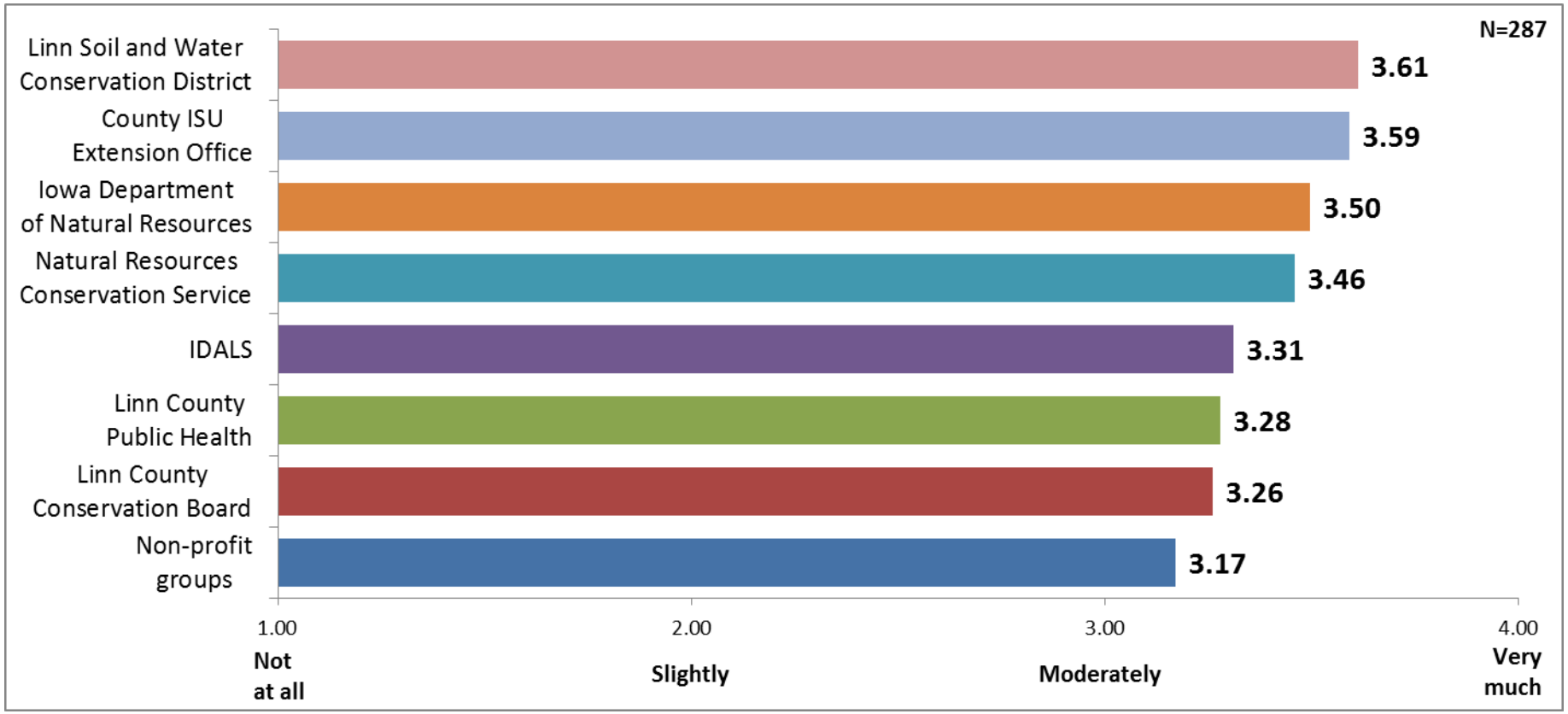
Web-based methods (***specific website, by email*** and ***online search***) were also the methods that received the most total 1st, 2nd and 3rd preference rankings. All channels received some votes.



Q16. Please drag and drop from the Items below to rank your top three preferred methods in order, with 1 being the most preferred of the group.

Residents – Trustworthy Sources

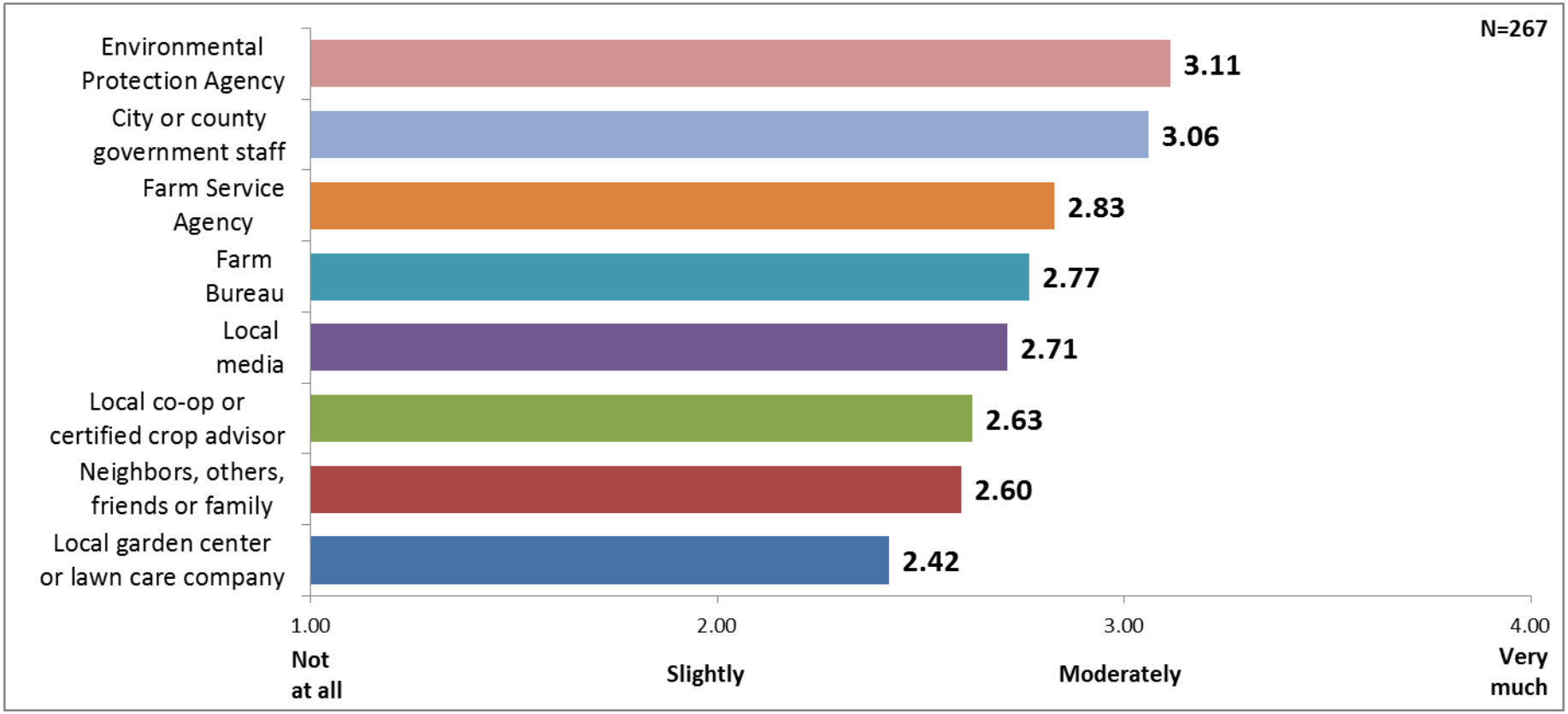
Linn Soil and Water Conservation District and ***County ISU Extension Office*** were the most highly-trusted sources of information about the quality of water resources.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Residents – Trustworthy Sources (cont.)

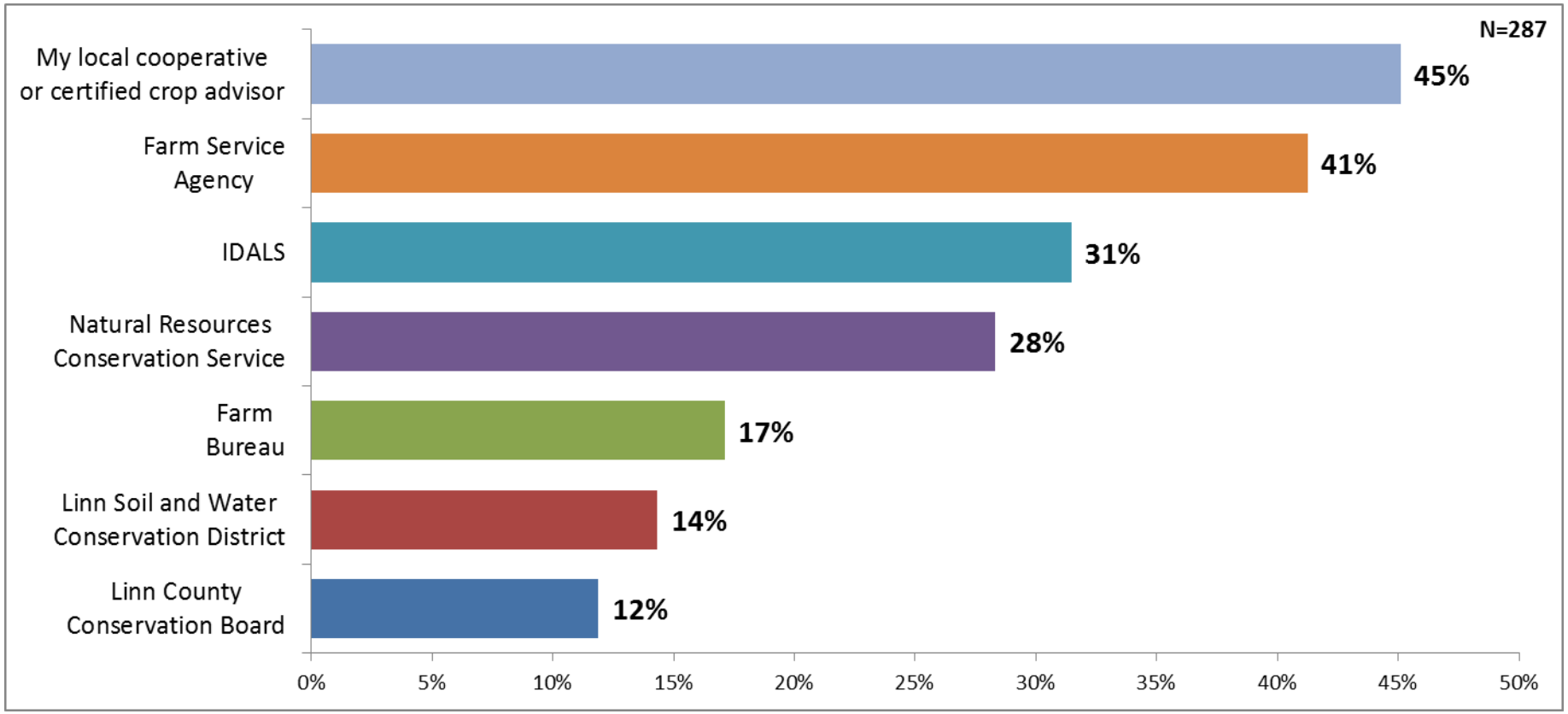
Local garden centers or lawn care companies
were the least-trusted sources of information about the quality of water resources.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Residents – Trustworthy Sources (cont.)

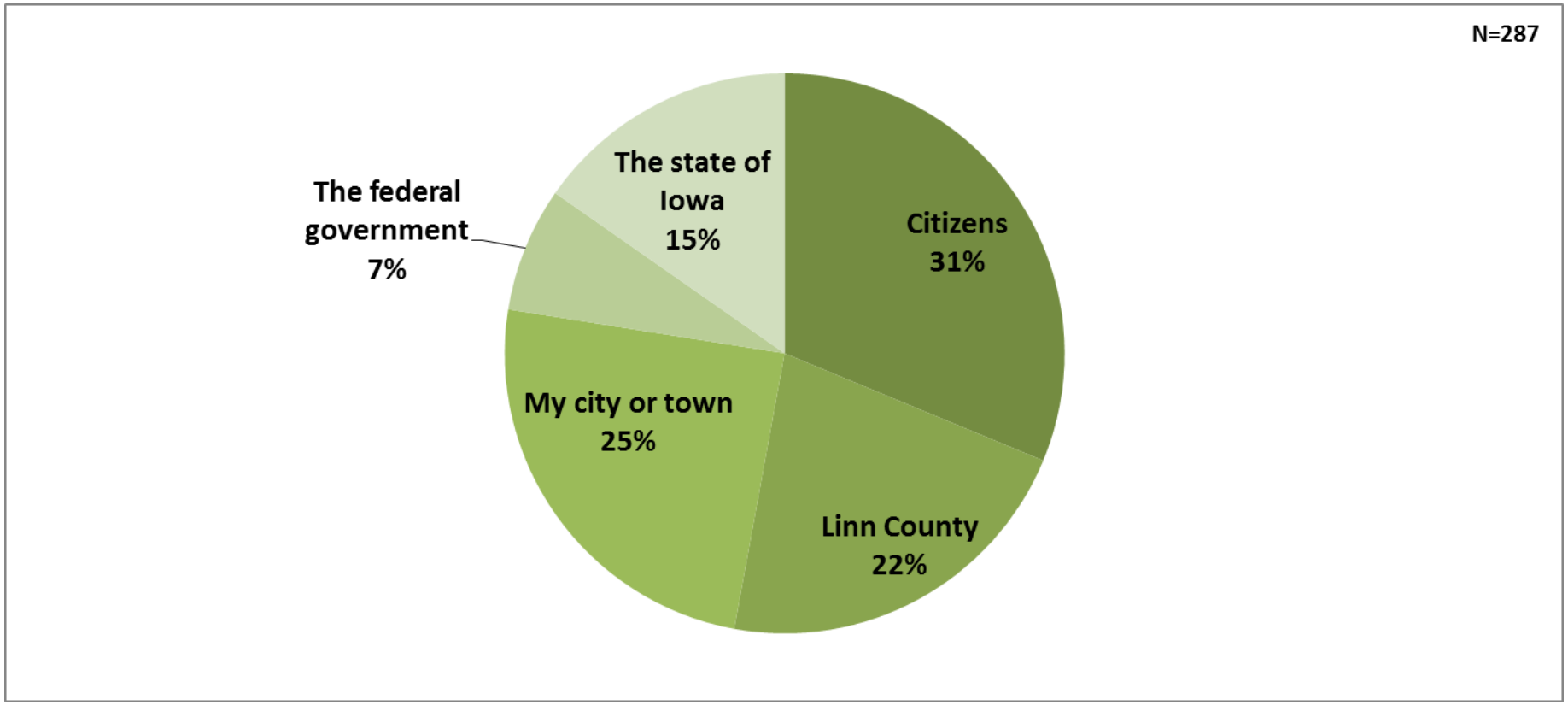
Residents were allowed to specify if they were ***unfamiliar*** with sources. Over 40% registered unfamiliarity with ***local cooperatives or certified crop advisors*** and the ***Farm Service Agency***.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Residents – Responsibility for Water Quality

Residents placed the bulk of the responsibility to help protect local water quality on ***citizens***, followed by their ***city or town***, followed by ***Linn County***. They did not feel it was a federal issue.

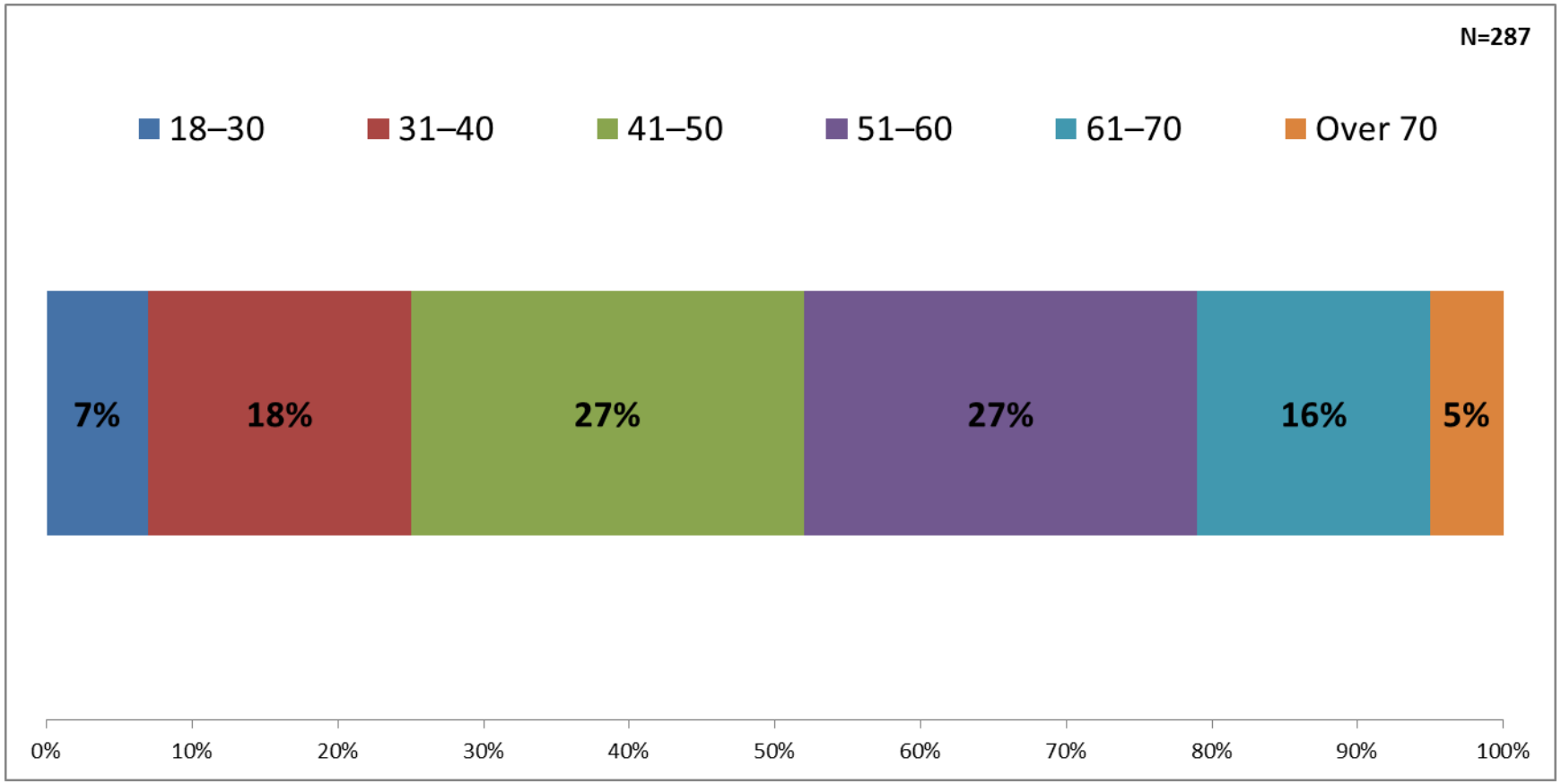


Q24. How much of the responsibility to help protect local water quality lies with each of the following entities? Assign a percentage to each, with the total adding to 100%.

Demographics

Residents – Age

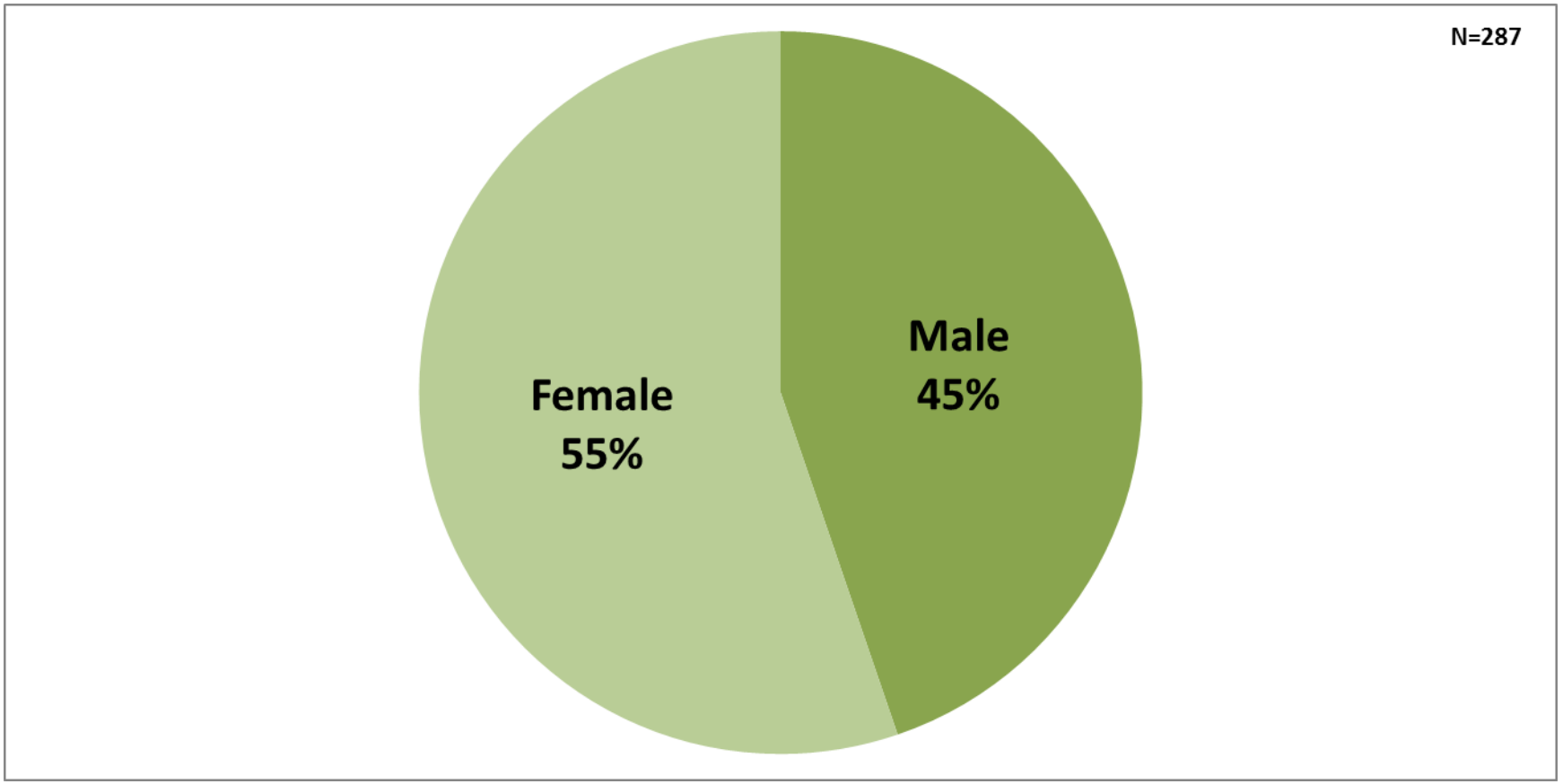
Residents represented all age groups.



Q1. Which age range do you fall into?

Residents – Gender

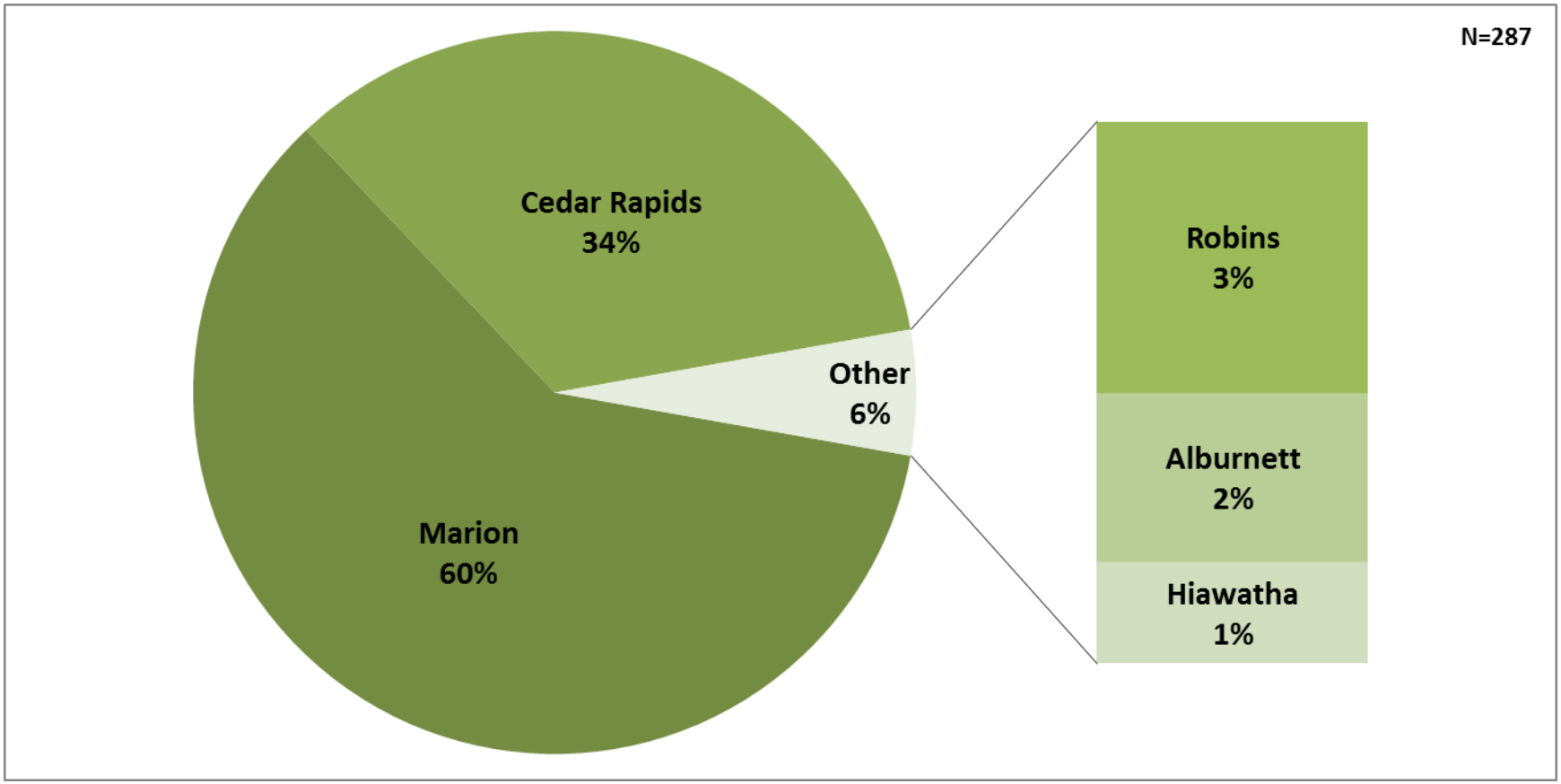
The Resident sample included slightly more ***females*** than ***males***.



Q2. What is your gender?

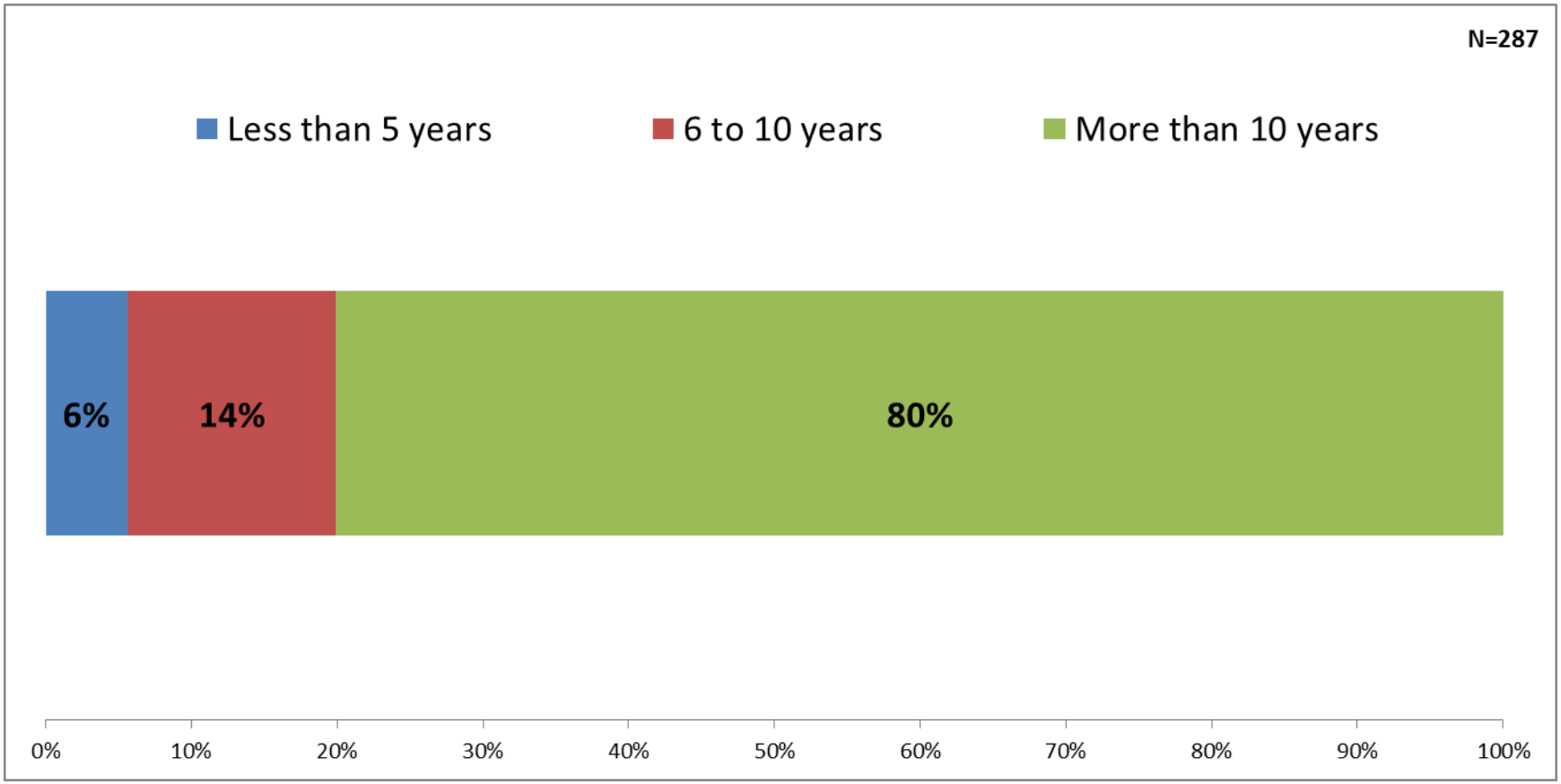
Residents – Community

Respondents came from several communities, but chiefly ***Marion*** and ***Cedar Rapids***.



Residents – Linn County

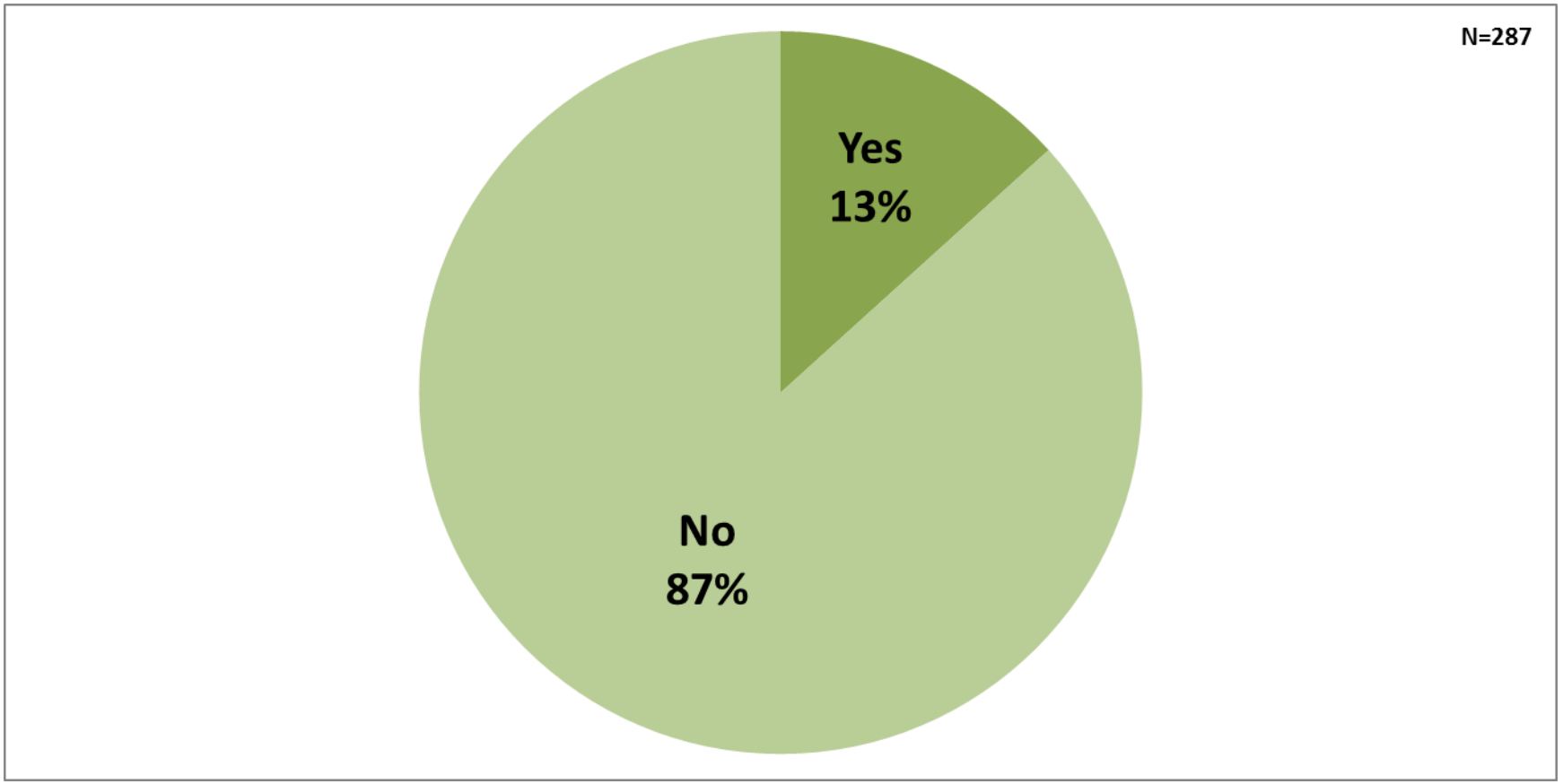
The majority of Residents had lived in Linn County for ***more than 10 years***.



Q4. How long have you lived in Linn County?

Residents – Live Near Water

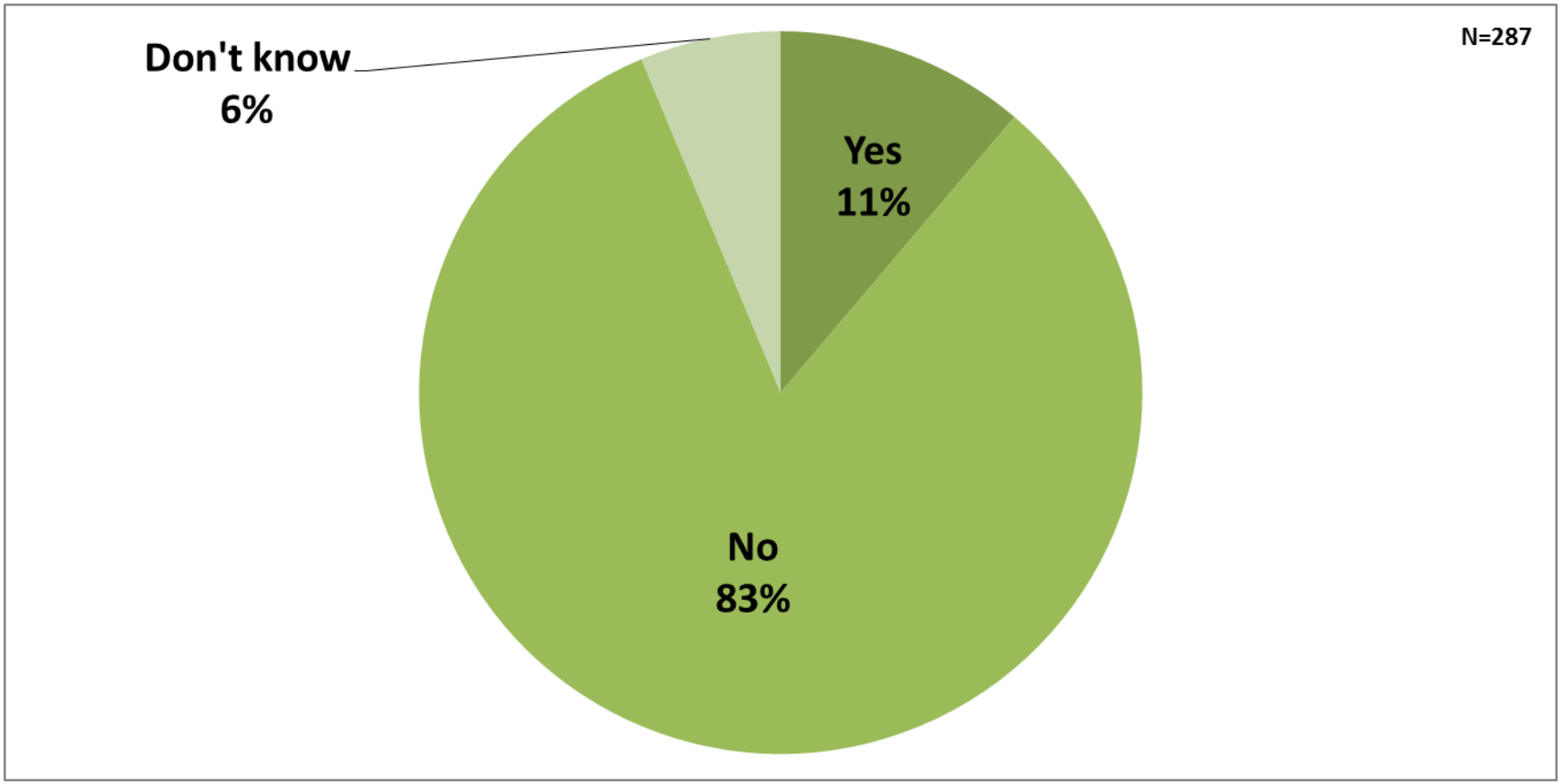
The large majority of respondents answered that they do not live on ***property that touches a creek, stream, river or wetland***.



Q10. Does the property you own/rent touch a creek, stream, river or wetland?

Residents – Affected by Flooding

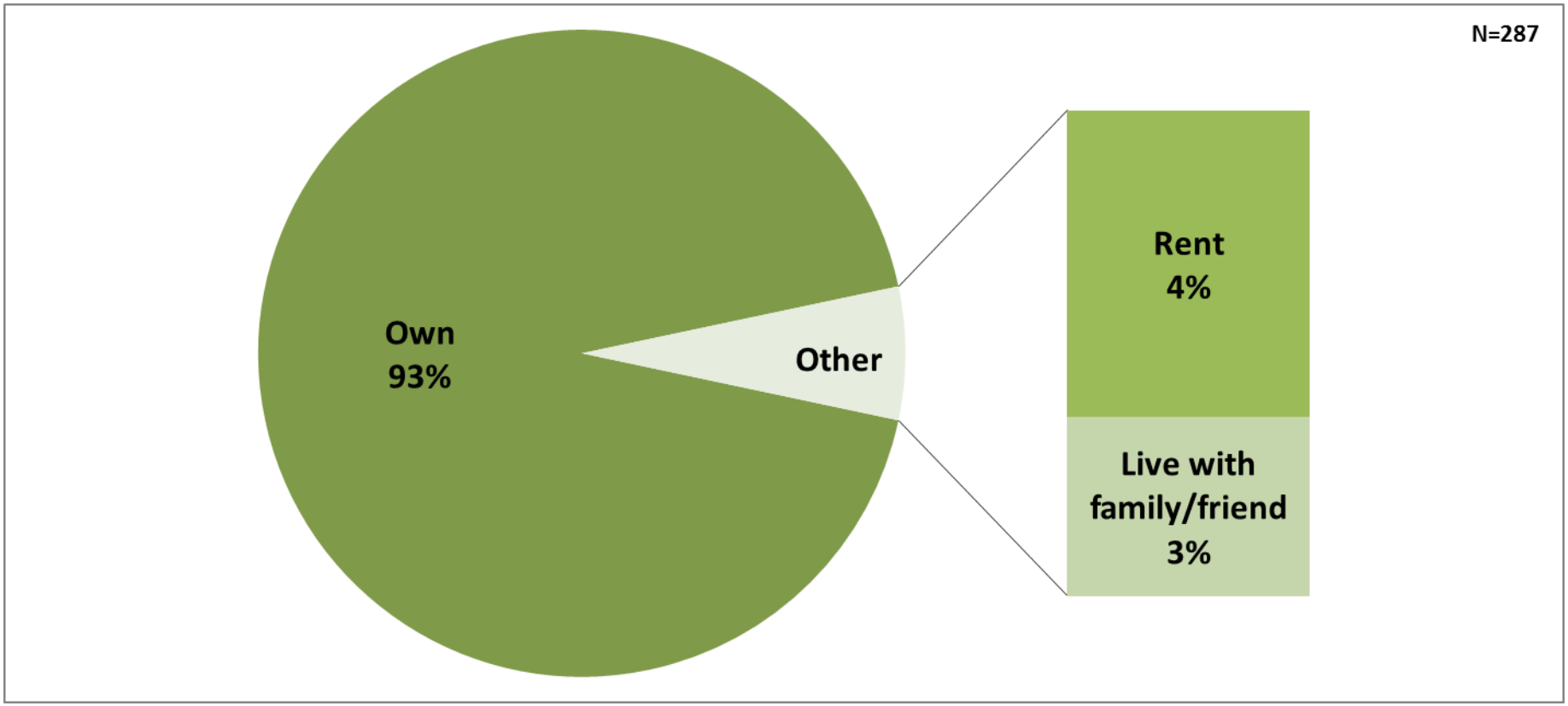
Similarly, the large majority of respondents answered that their property has not ***been affected by flooding from Indian, Squaw and/or Dry Creeks***.



Q11. Has your property been affected by flooding from Indian, Squaw and/or Dry Creeks?

Residents – Owners/Renters

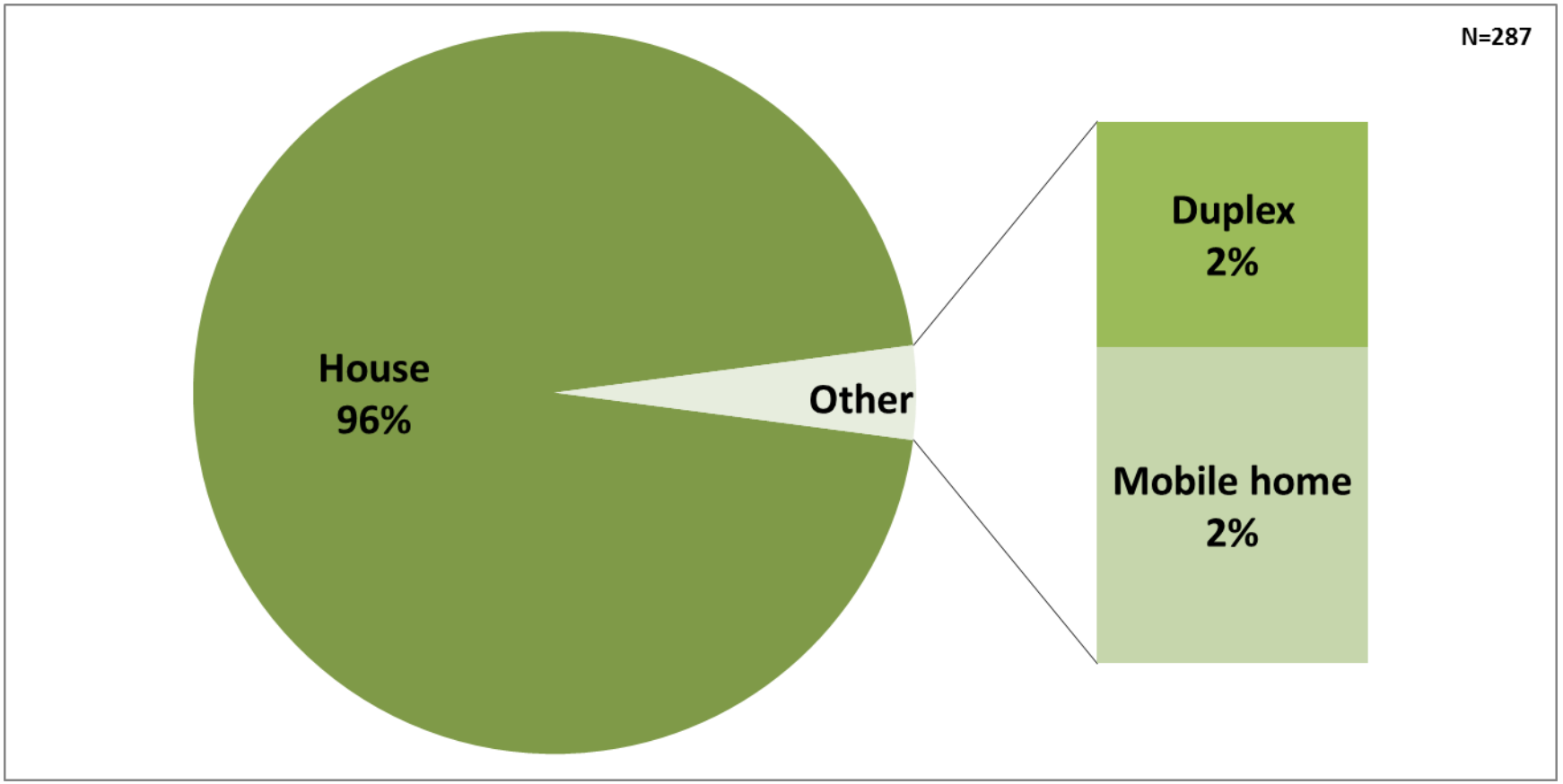
The large majority of Residents ***owned*** their residences.



Q19. Do you own your residence?

Residents – Residence Type

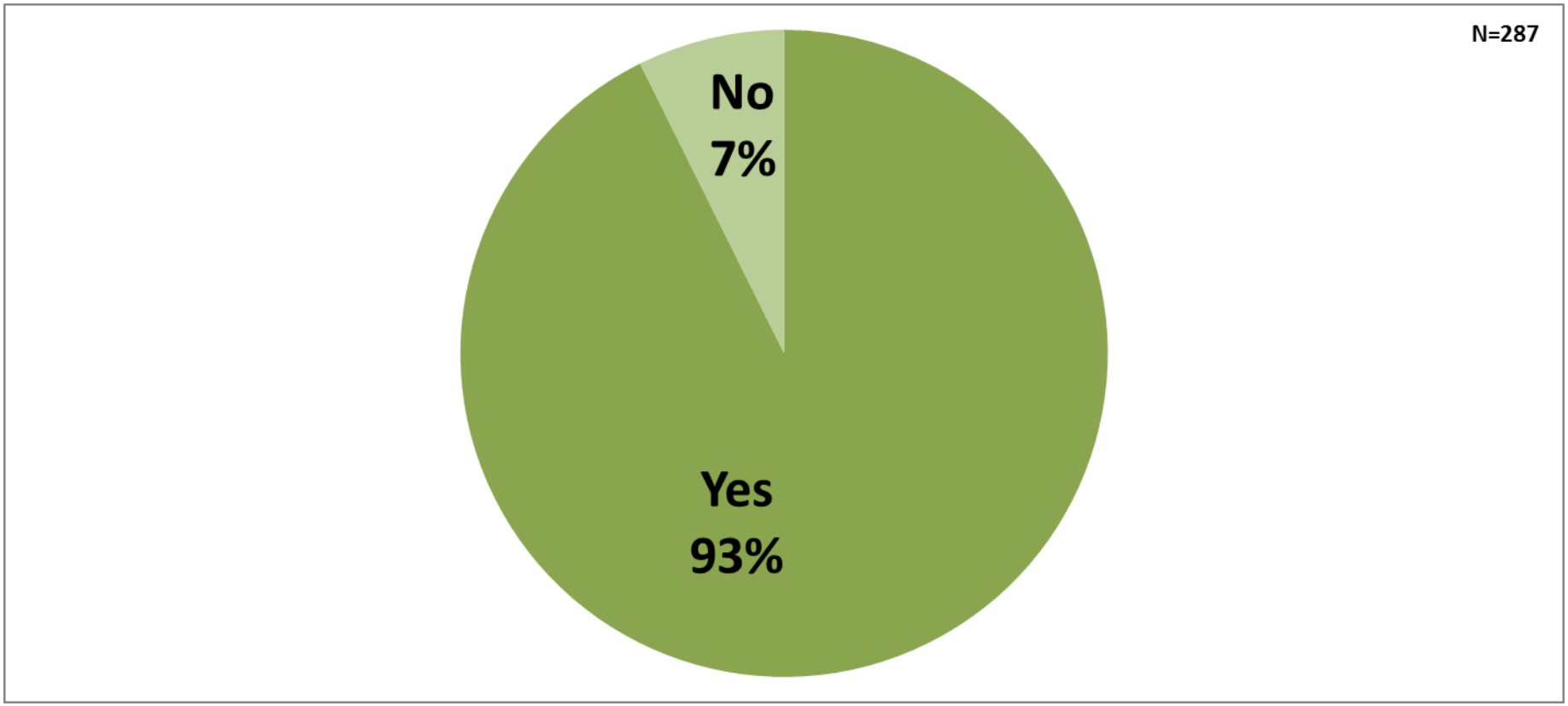
The large majority of Residents lived in ***houses***.



Q8. Which type of residence do you live in?

Residents – Lawn Care Decisions

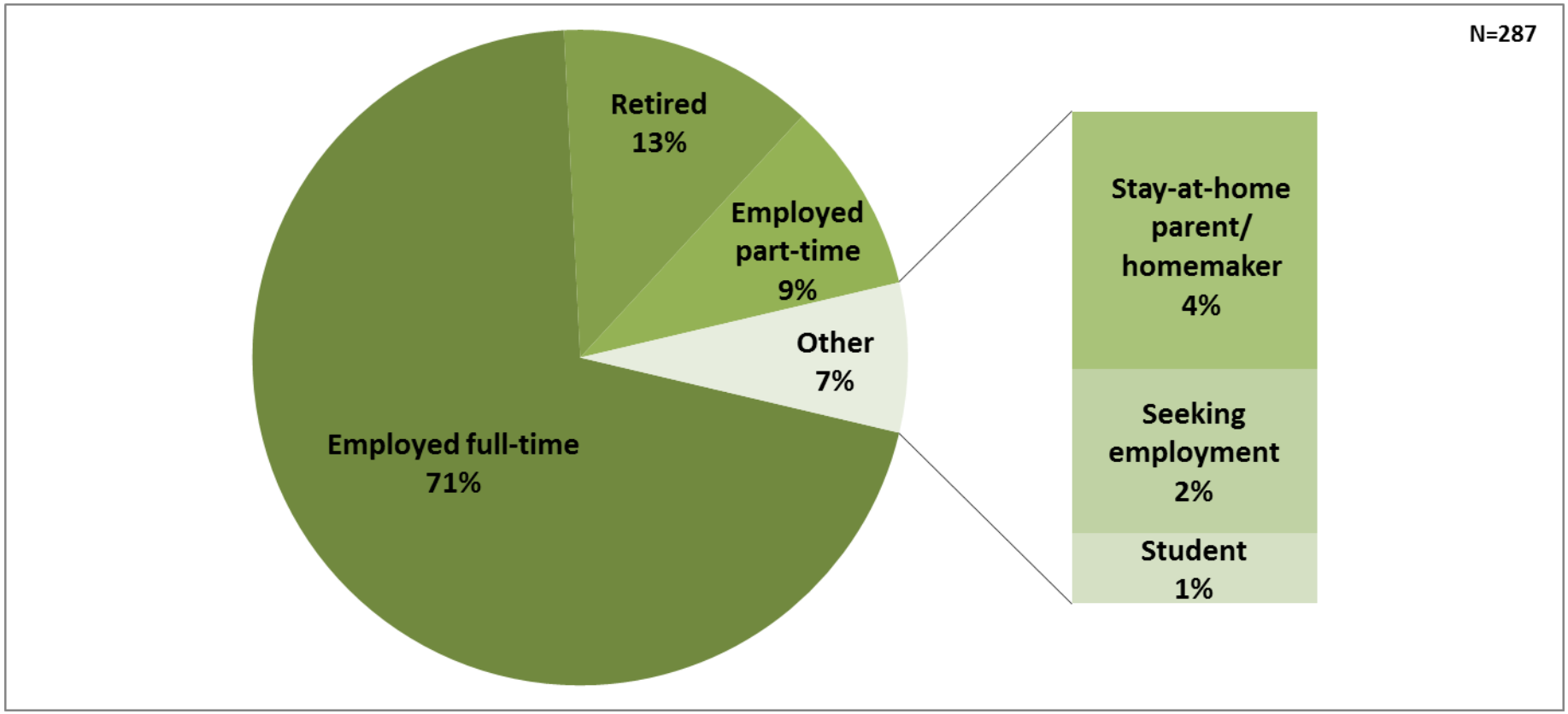
The large majority of Residents in the sample ***made the lawn care decisions for their properties***.



Q20. Do you make the lawn care decisions for your property?

Residents – Demographics (Employment Status)

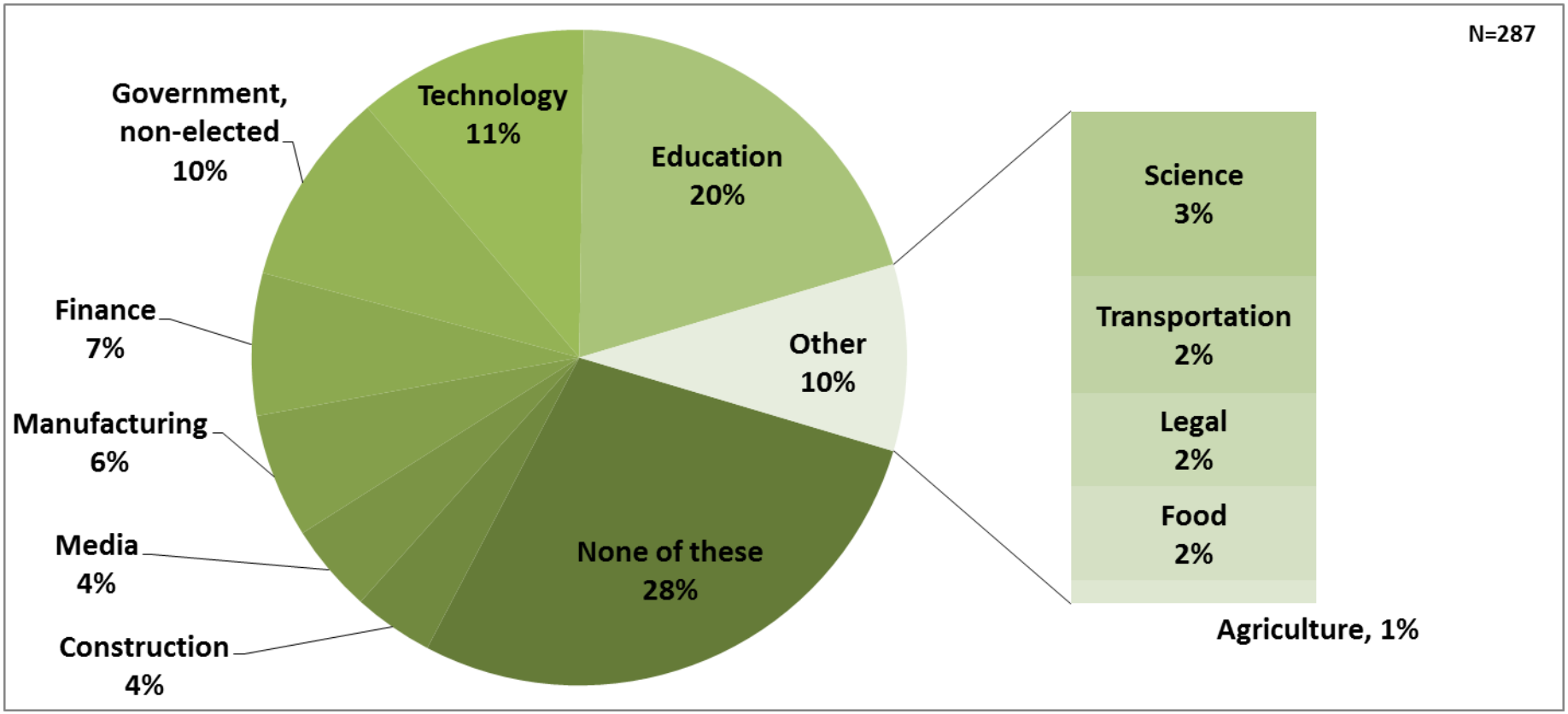
The majority of the Resident sample ***worked full-time*** (reflects Linn County).



Q52. Which of the following best describes your current employment situation?

Residents – Demographics (Employment Type)

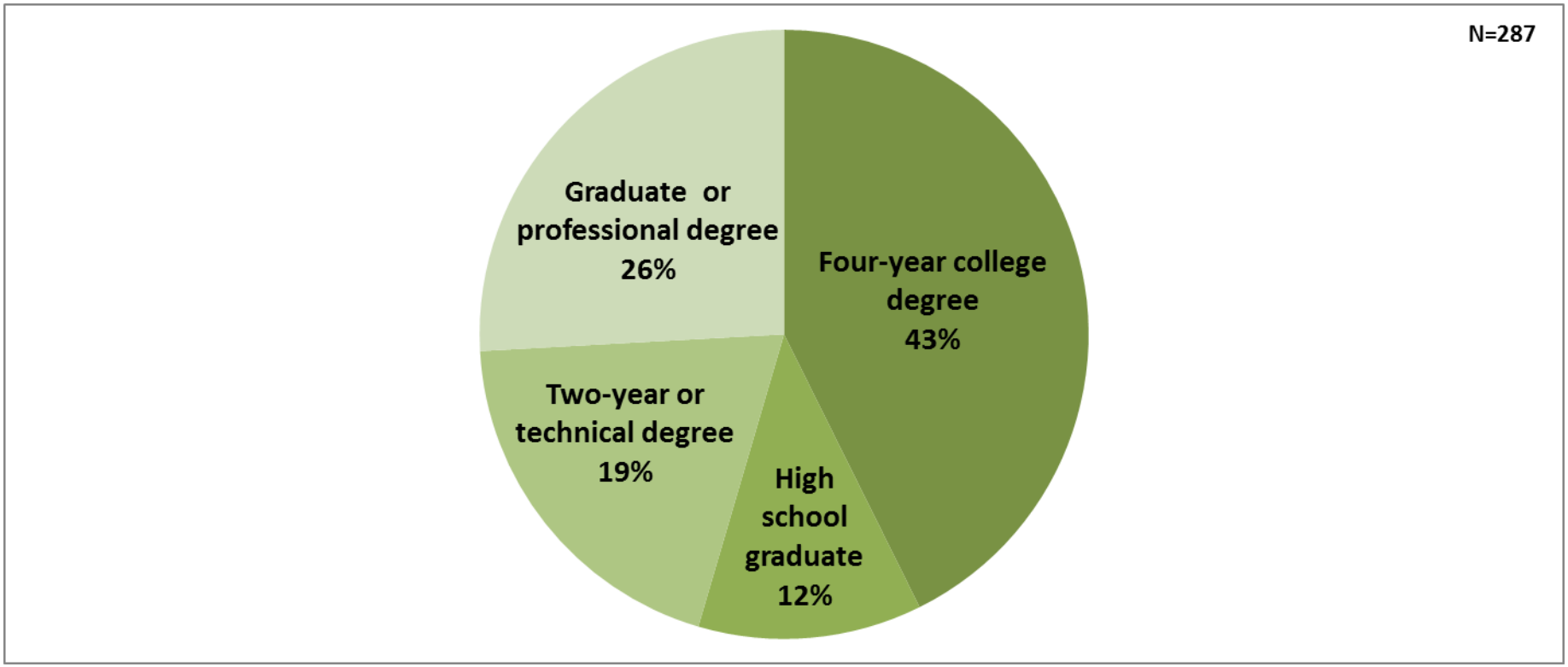
The sample of Residents represented a good mix of industries.



Q53. Which industry best describes the business/organization you work for?

Residents – Demographics (Education)

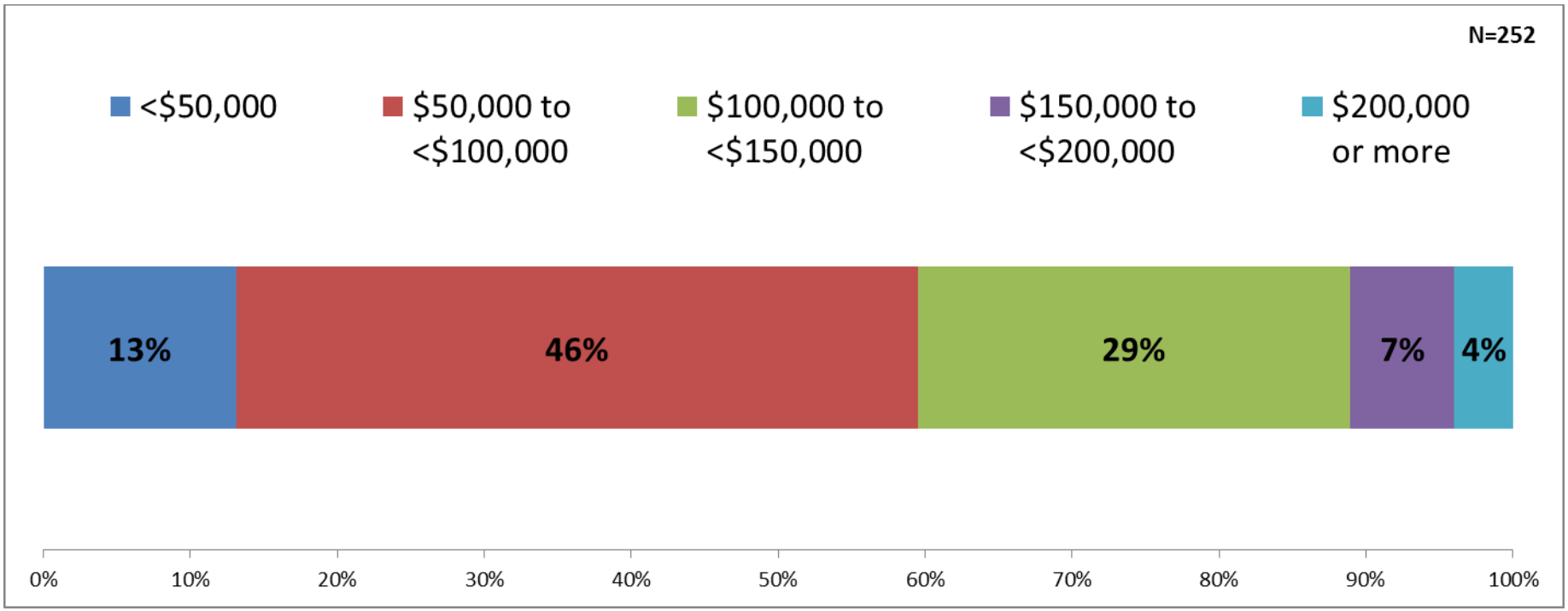
The sample of Residents was better-educated than the known population at the county level.



Q54. What was the last level of education that you completed?

Residents – Demographics (Income)

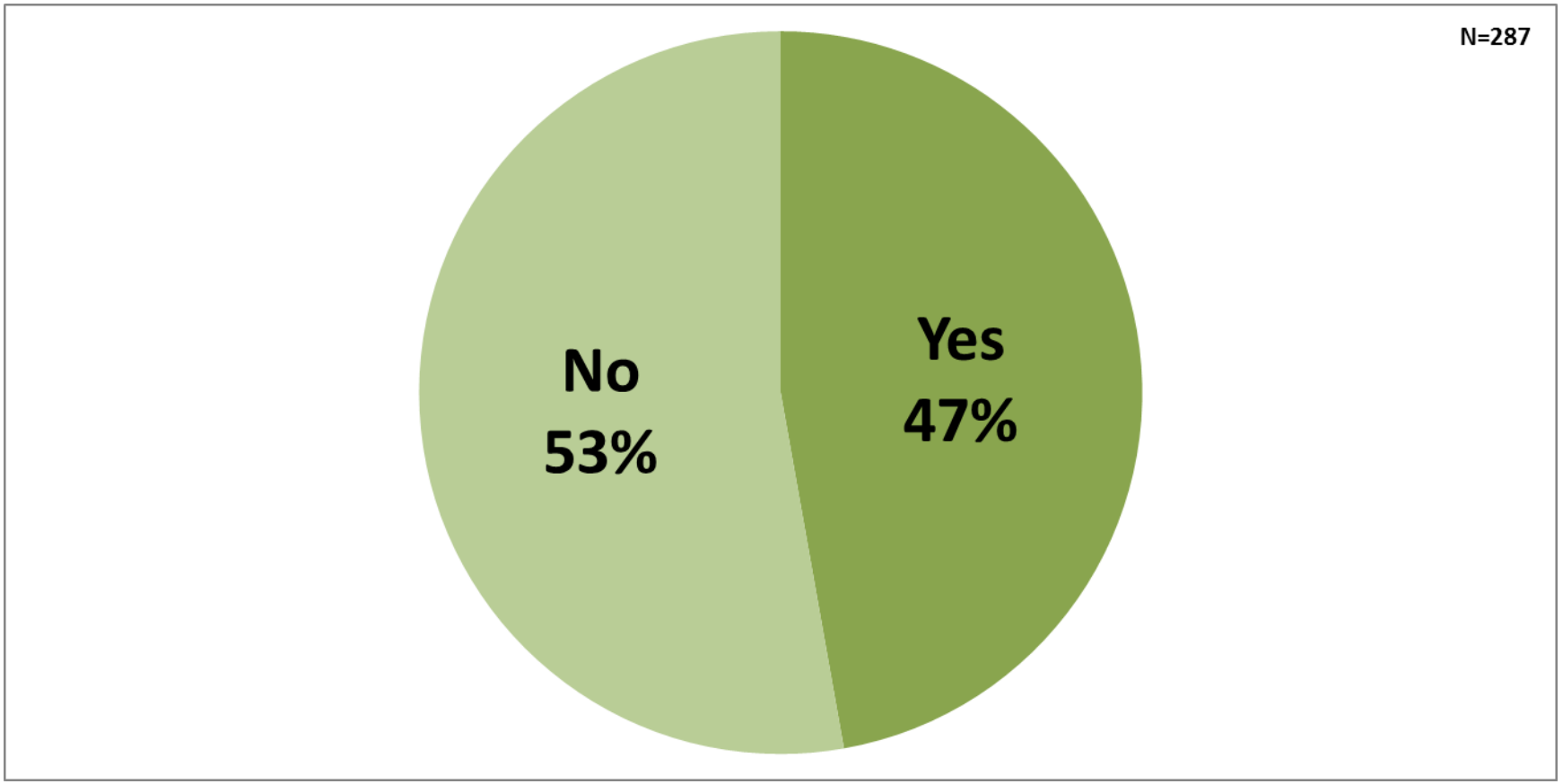
The sample of Residents has a higher median household income than the known population at the county level – may be due to more homeowners in the survey or education levels.



Q55. Which of the following categories best describes your annual household income before taxes?

Residents – Demographics (Minors)

The sample of Residents has a higher percentage of households including a person under the age of 19 than the known population at the county level – home ownership may affect this.



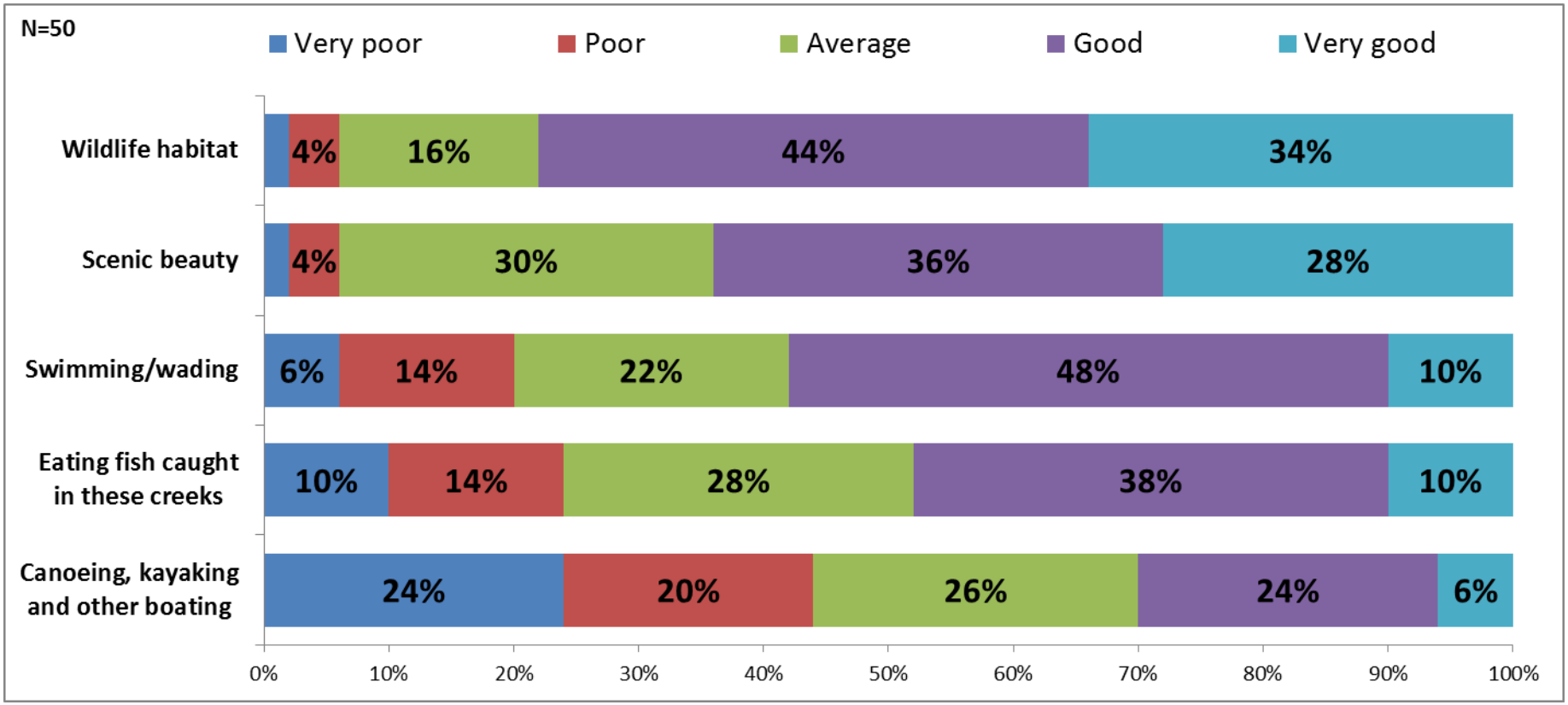
Q56. Do you have children under age 19 living in your home?

Indian Creek Watershed - Results

Farmers

Farmers – Water Quality

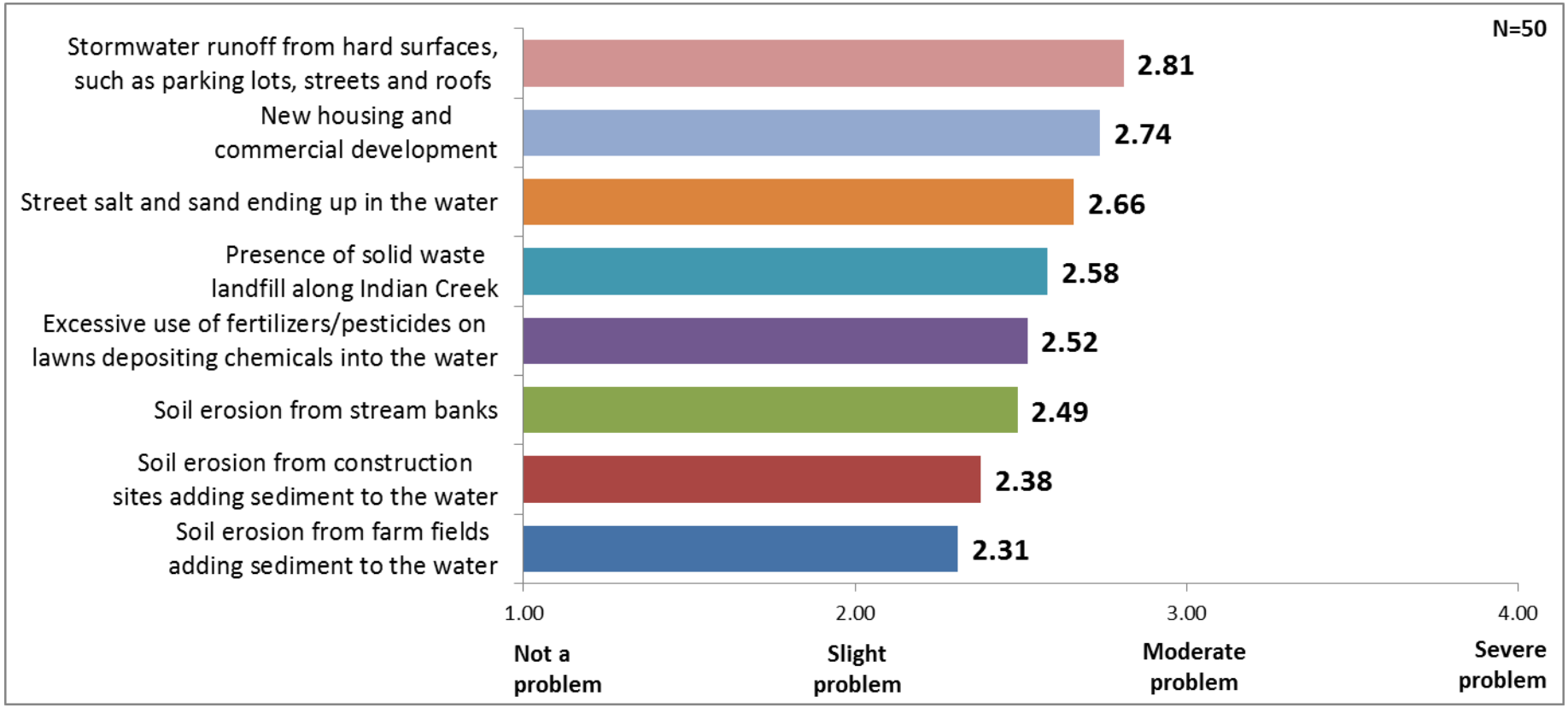
Farmers evaluated water quality **more positively** for ***activities that do not require touching the water*** than for ***activities that do require touching the water***.



Q12. To the best of your knowledge, how would you describe the quality of water in **your area's streams** (Indian, Dry and Squaw Creeks) for the following activities?

Farmers – Contributing Issues

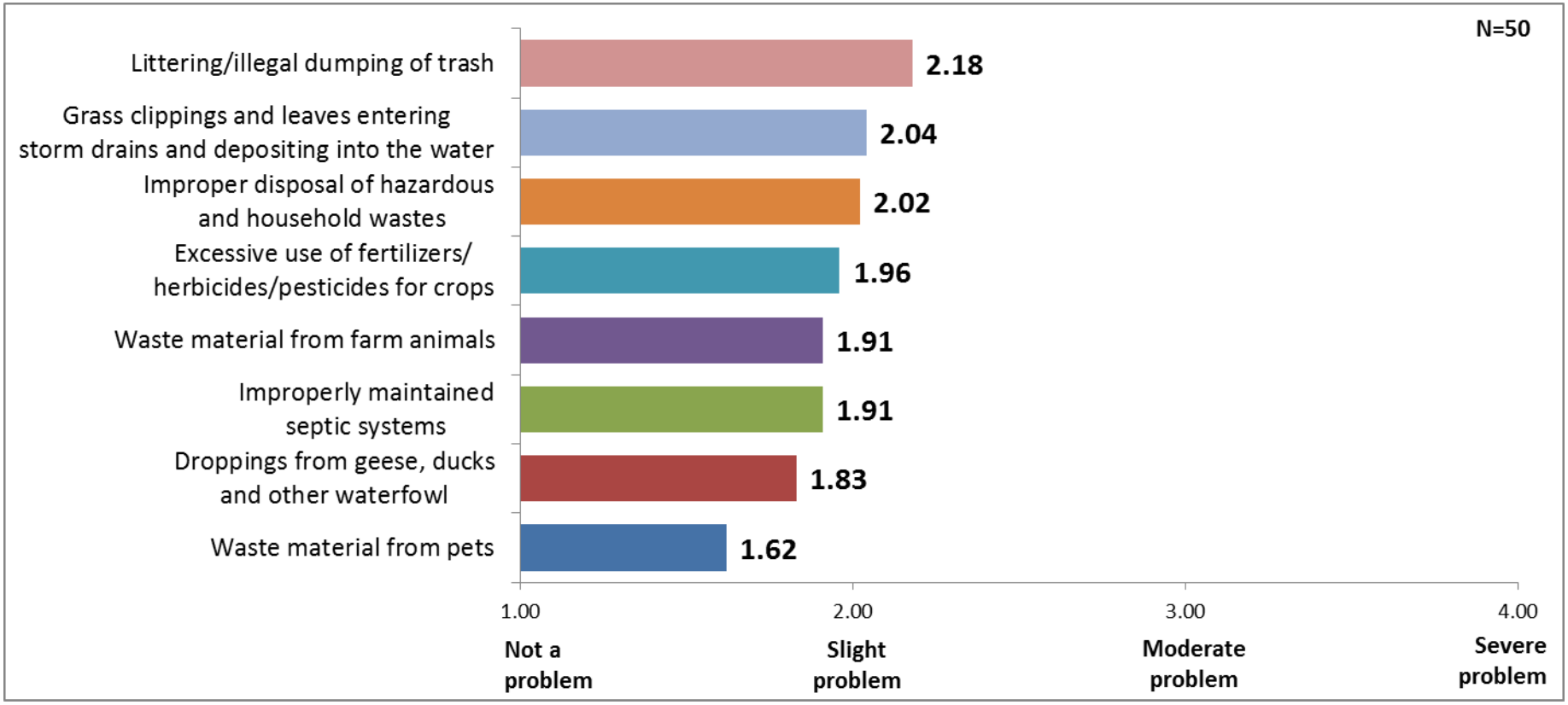
Farmers scored most issues as slight-to-moderate problems. Of these, the most severe problem was ***stormwater runoff from hard surfaces, such as parking lots, streets and roofs.***



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Contributing Issues (cont.)

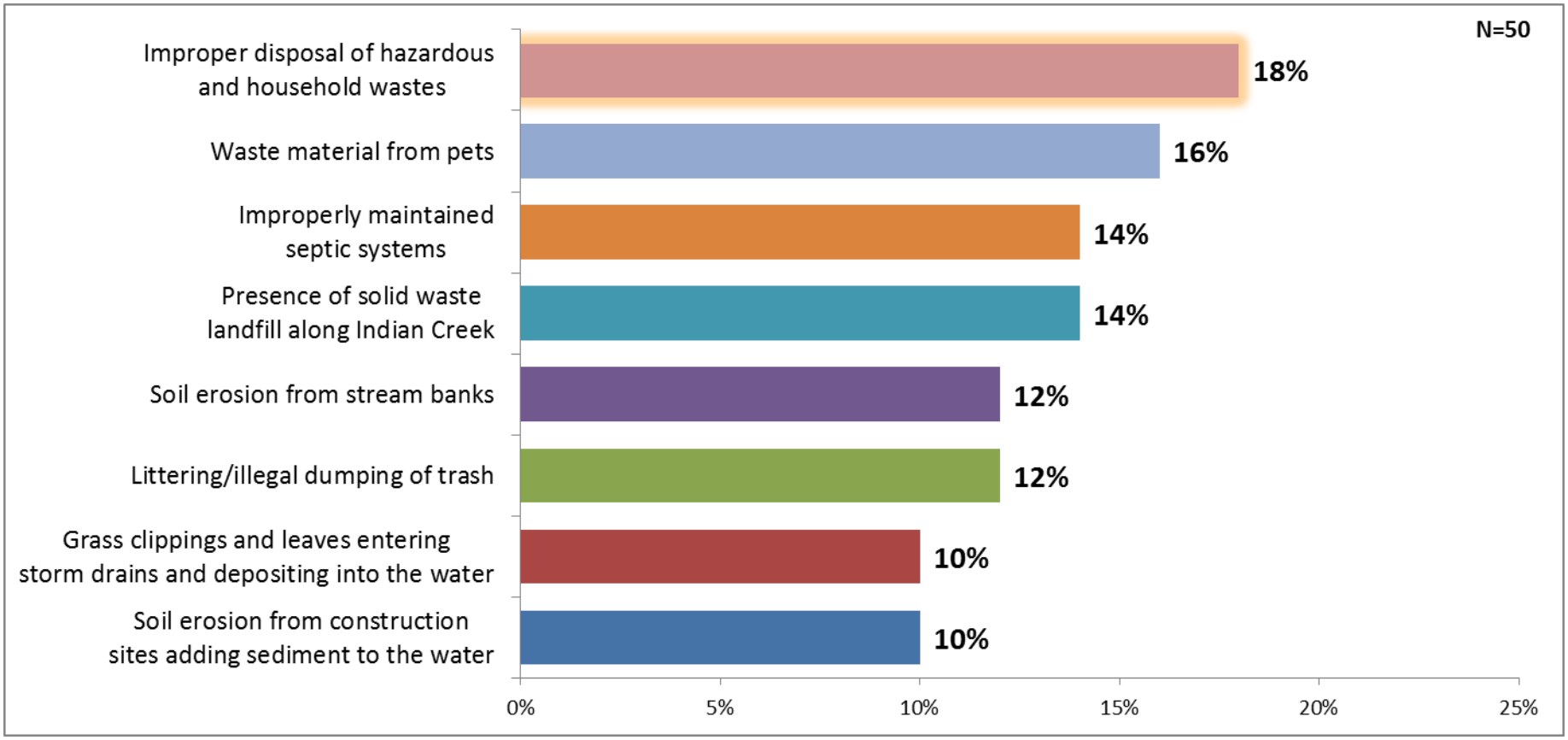
Farmers also scored several issues as not-to-slight problems.
Of these, the least severe problem was ***waste material from pets.***



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Contributing Issues (cont.)

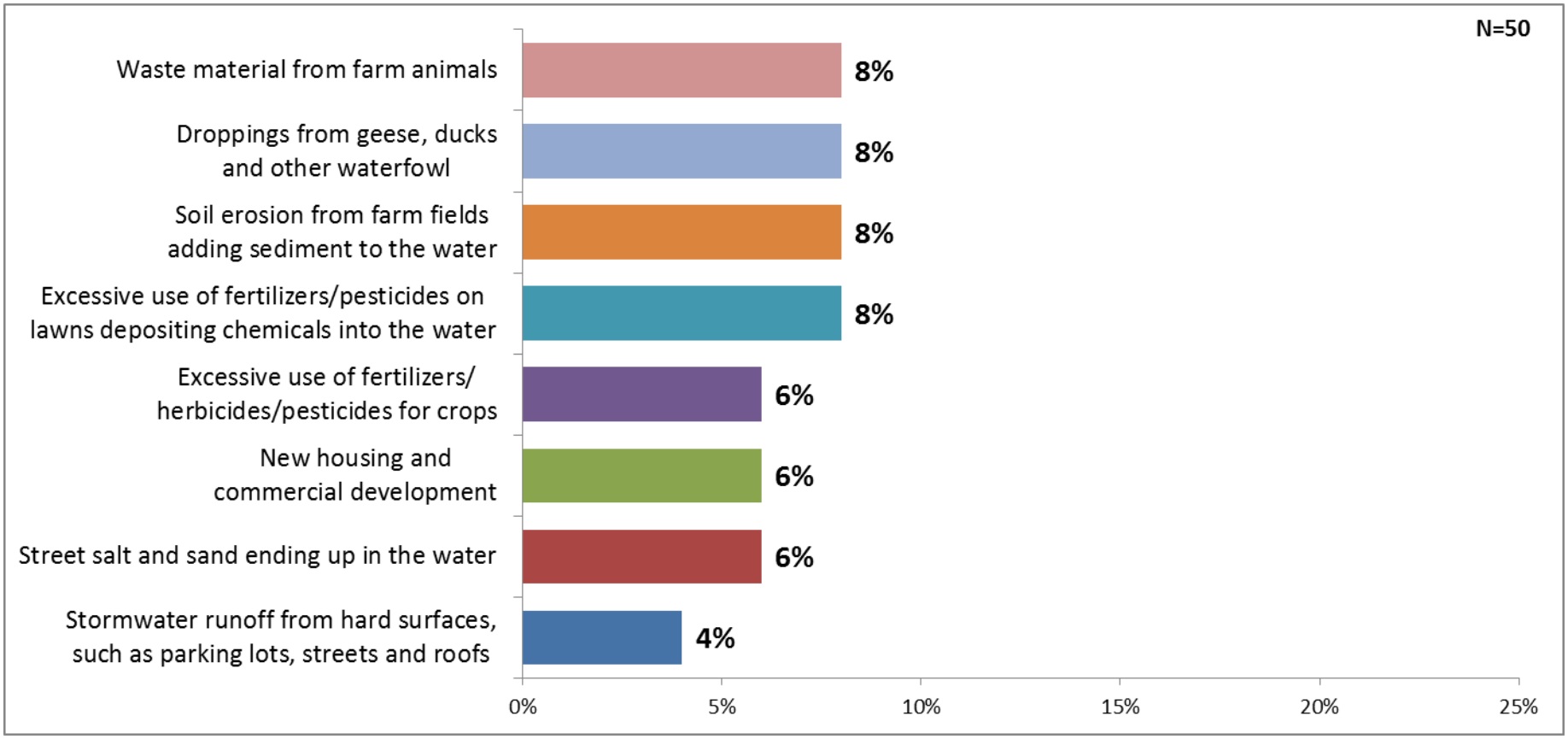
Farmers were allowed to indicate if they ***didn't know*** about issues contributing to problems. 18% did not know about ***improper disposal of hazardous and household wastes.***



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Contributing Issues (cont.)

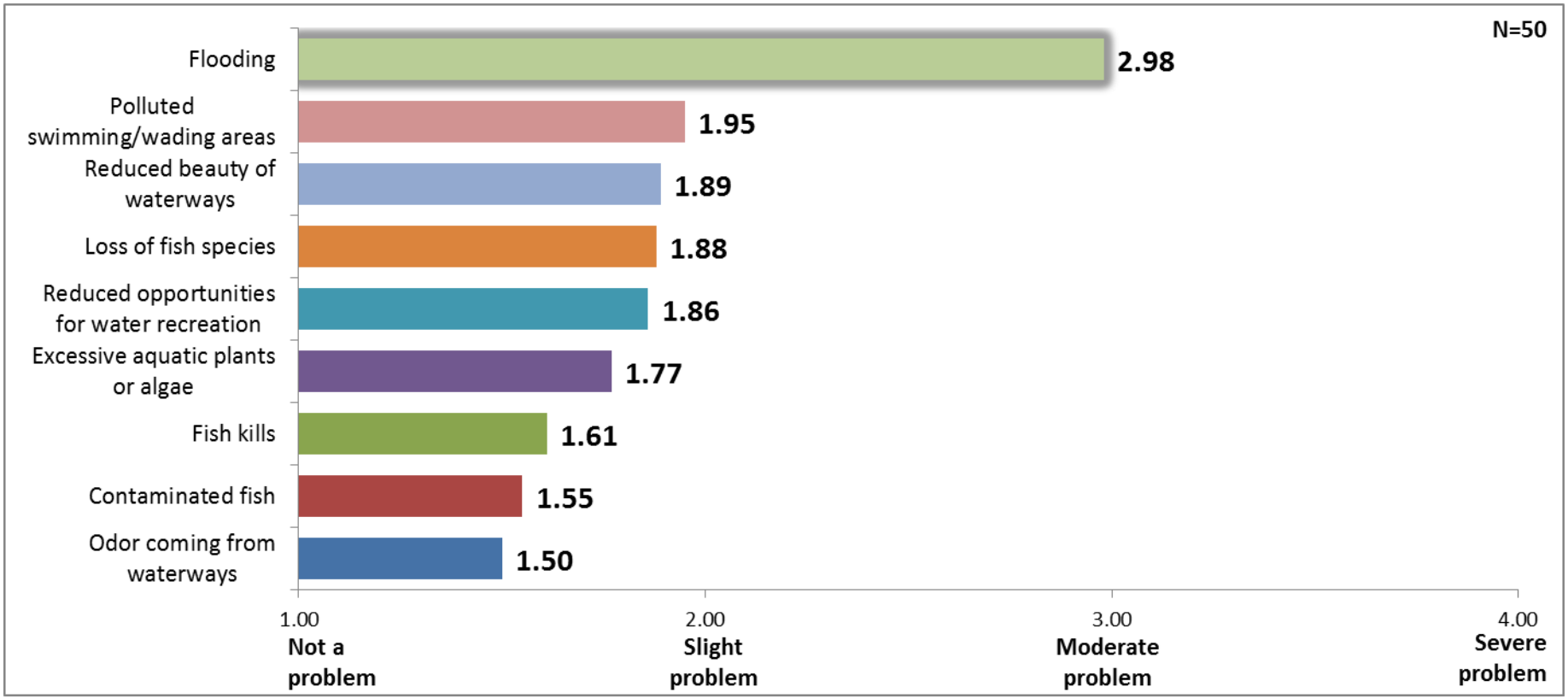
Farmers were more knowledgeable about issues like ***stormwater runoff from hard surfaces*** and **excessive use of chemicals on crops.**



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Ongoing Problems

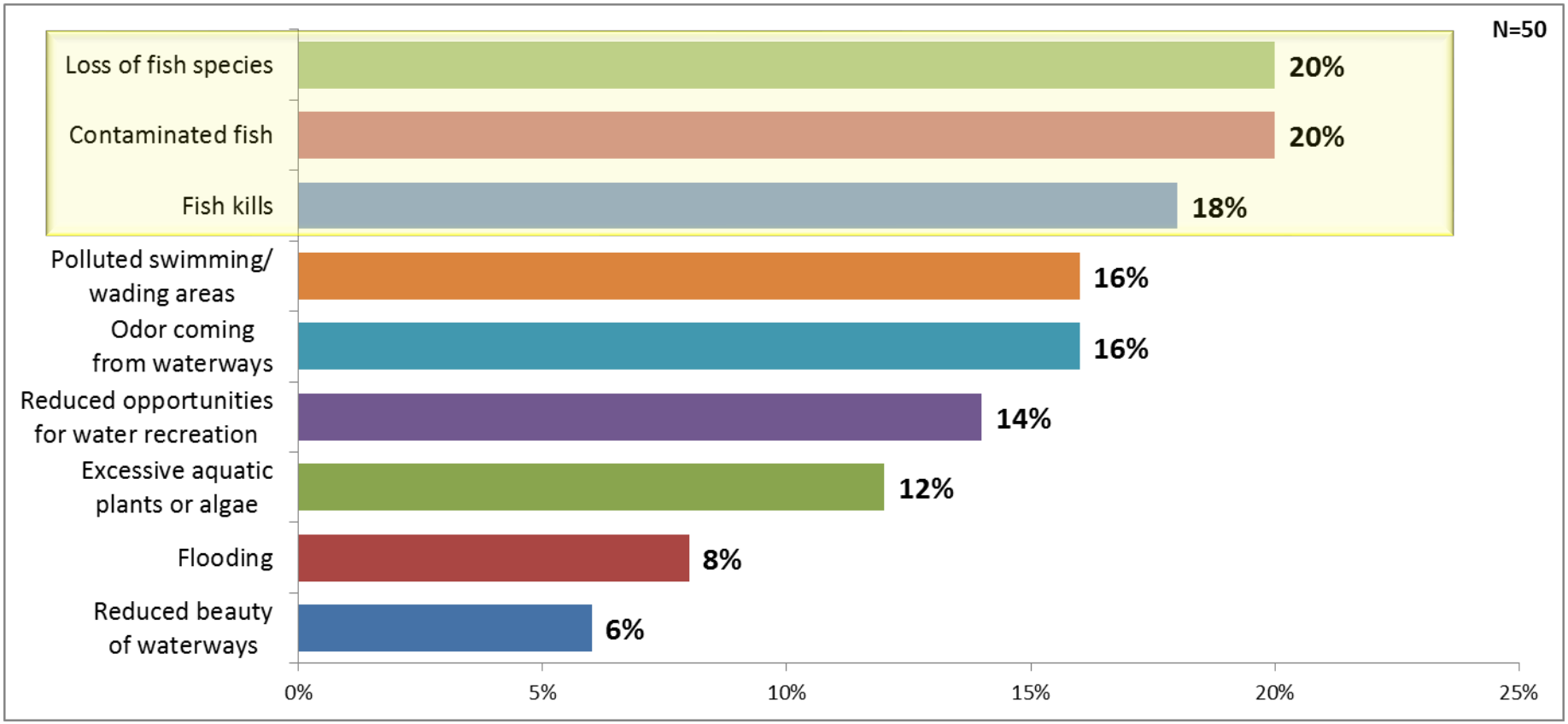
Flooding was the only ongoing problem that scored within the ***slight-to-moderate problem*** range. This is a standout ongoing problem perception.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Ongoing Problems (cont.)

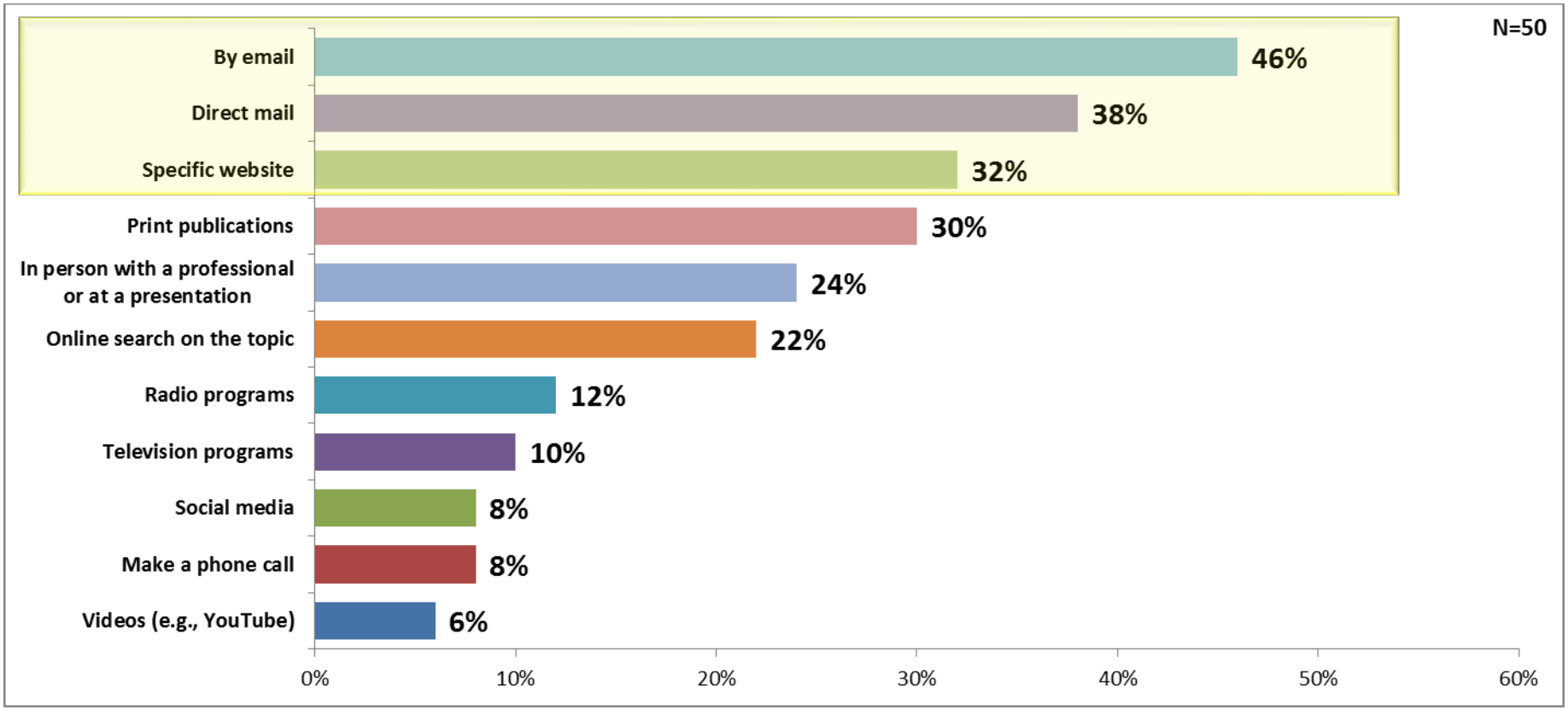
Farmers were allowed to specify if they ***didn't know*** about ongoing problems. 18-20% showed unawareness of three related issues: ***loss of fish species***, ***contaminated fish*** and ***fish kills***.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Farmers – Communication Preferences

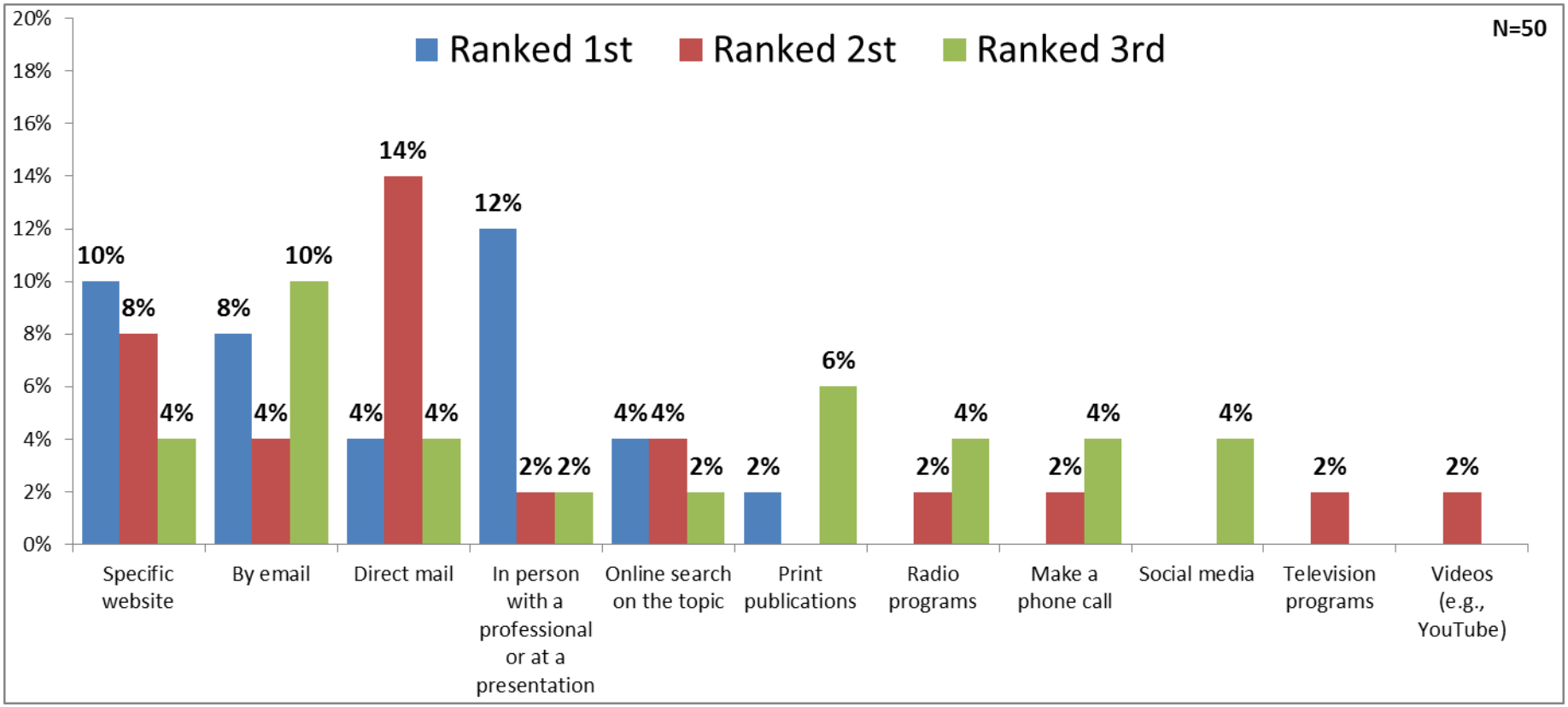
Farmers prefer either web-based (***email***, ***specific website***) or print (***direct mail, print publications***) formats. Almost a quarter enjoy ***in-person presentations.***



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Farmers – Communication Preferences (cont.)

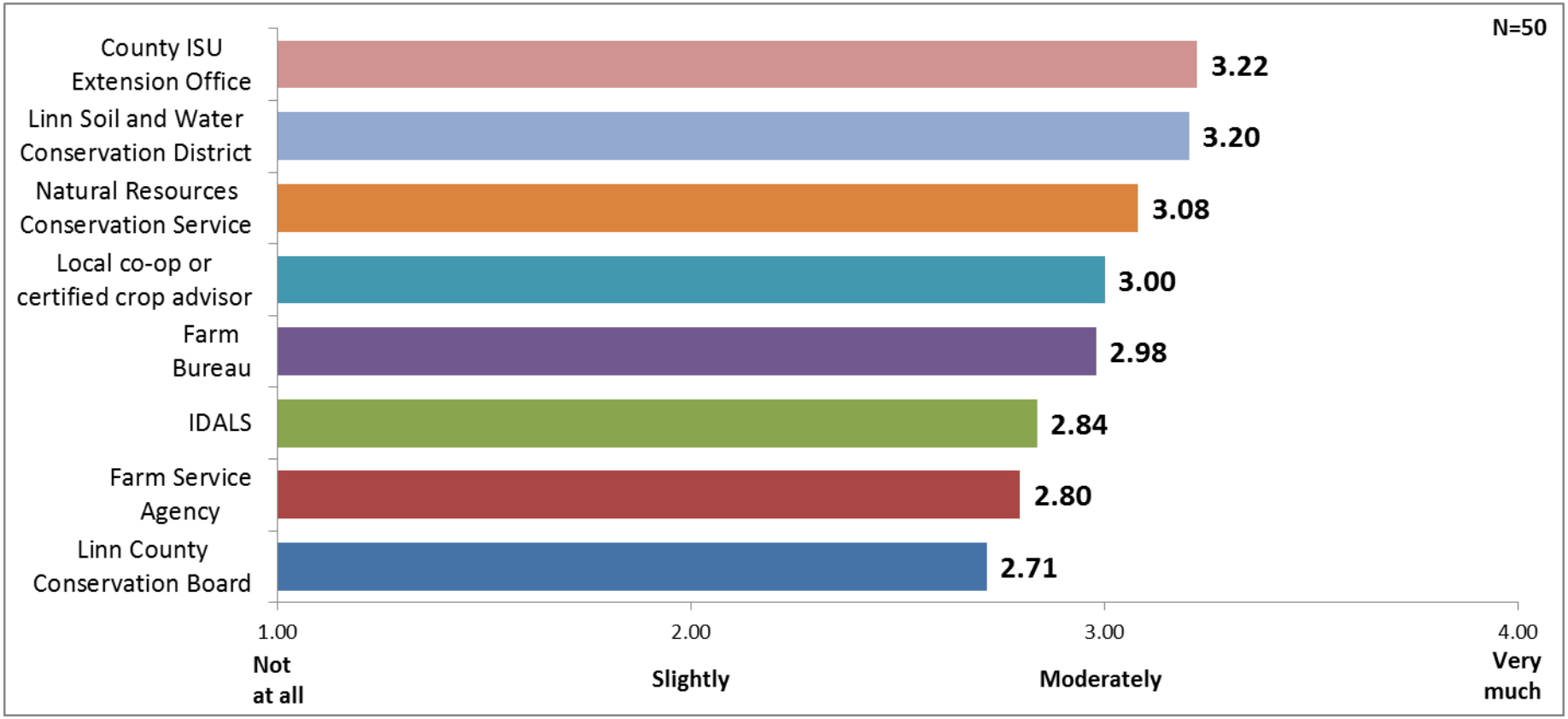
Some of those same web-based methods (***specific website, by email***), along with ***direct mail***, were the methods that received the most total 1st, 2nd and 3rd preference rankings.



Q16. Please drag and drop from the Items below to rank your top three preferred methods in order, with 1 being the most preferred of the group.

Farmers – Trustworthy Sources

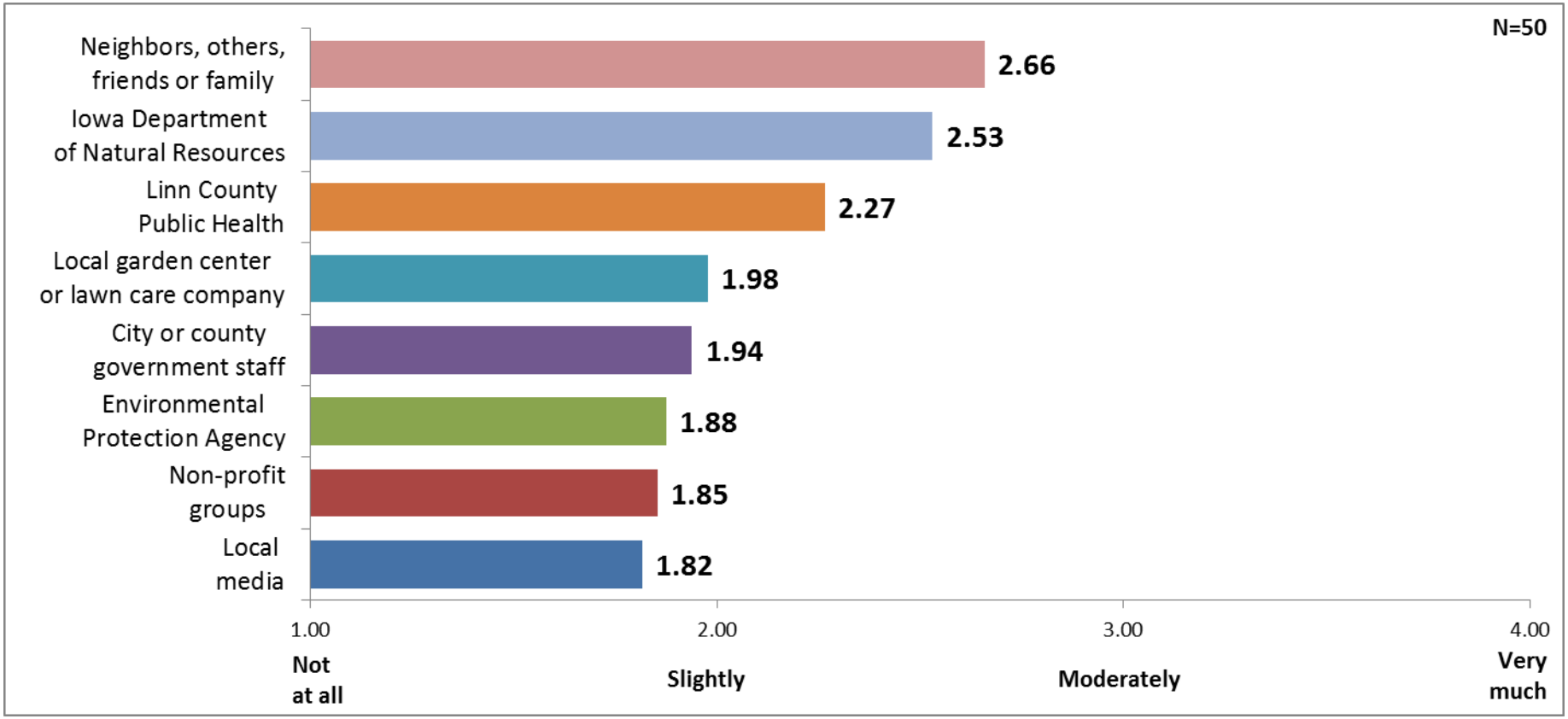
Linn Soil and Water Conservation District and ***County ISU Extension Office*** were the most highly-trusted sources of information about the quality of water resources.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Farmers – Trustworthy Sources (cont.)

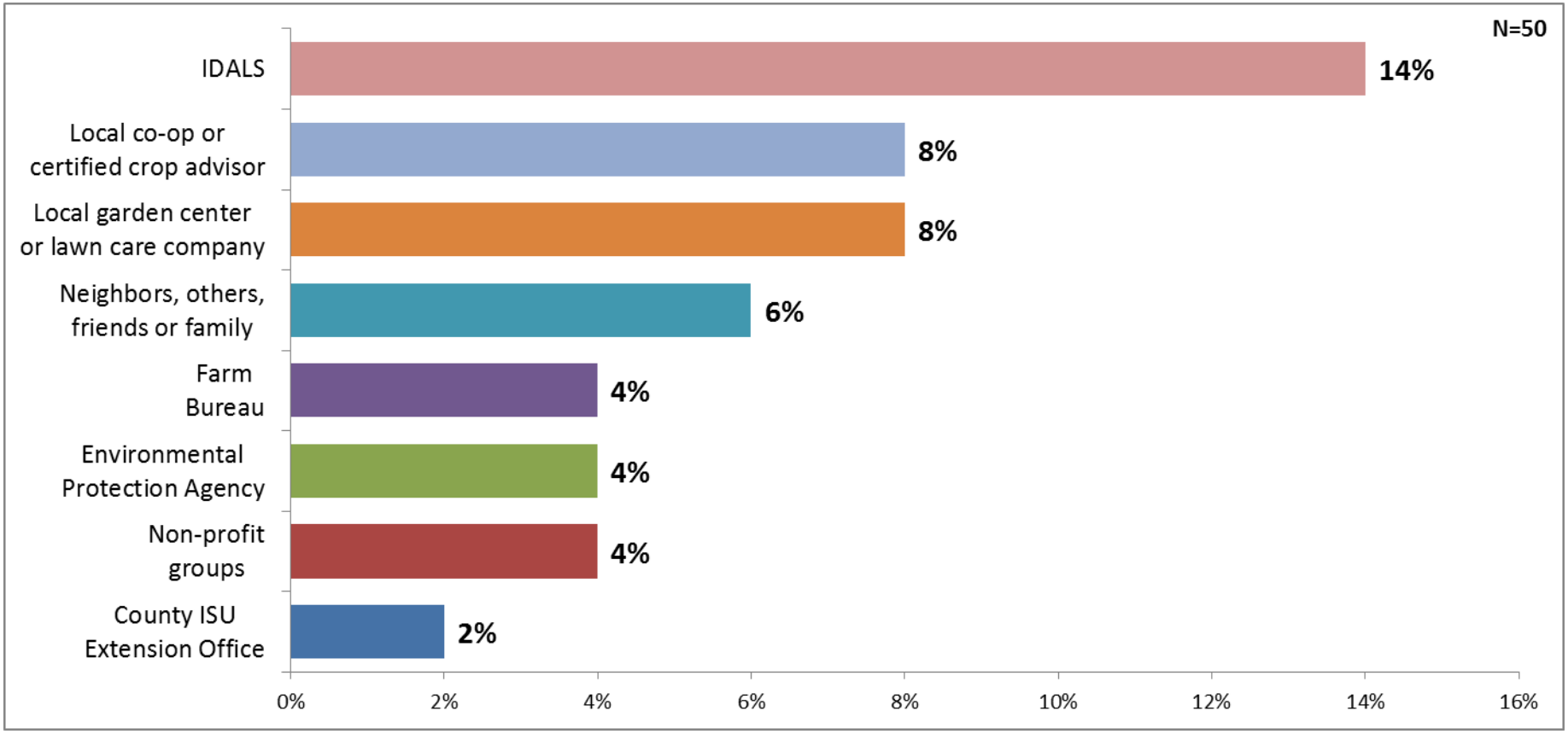
Non-profit groups and ***local media*** were the least-trusted sources of information about the quality of water resources.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Farmers – Trustworthy Sources (cont.)

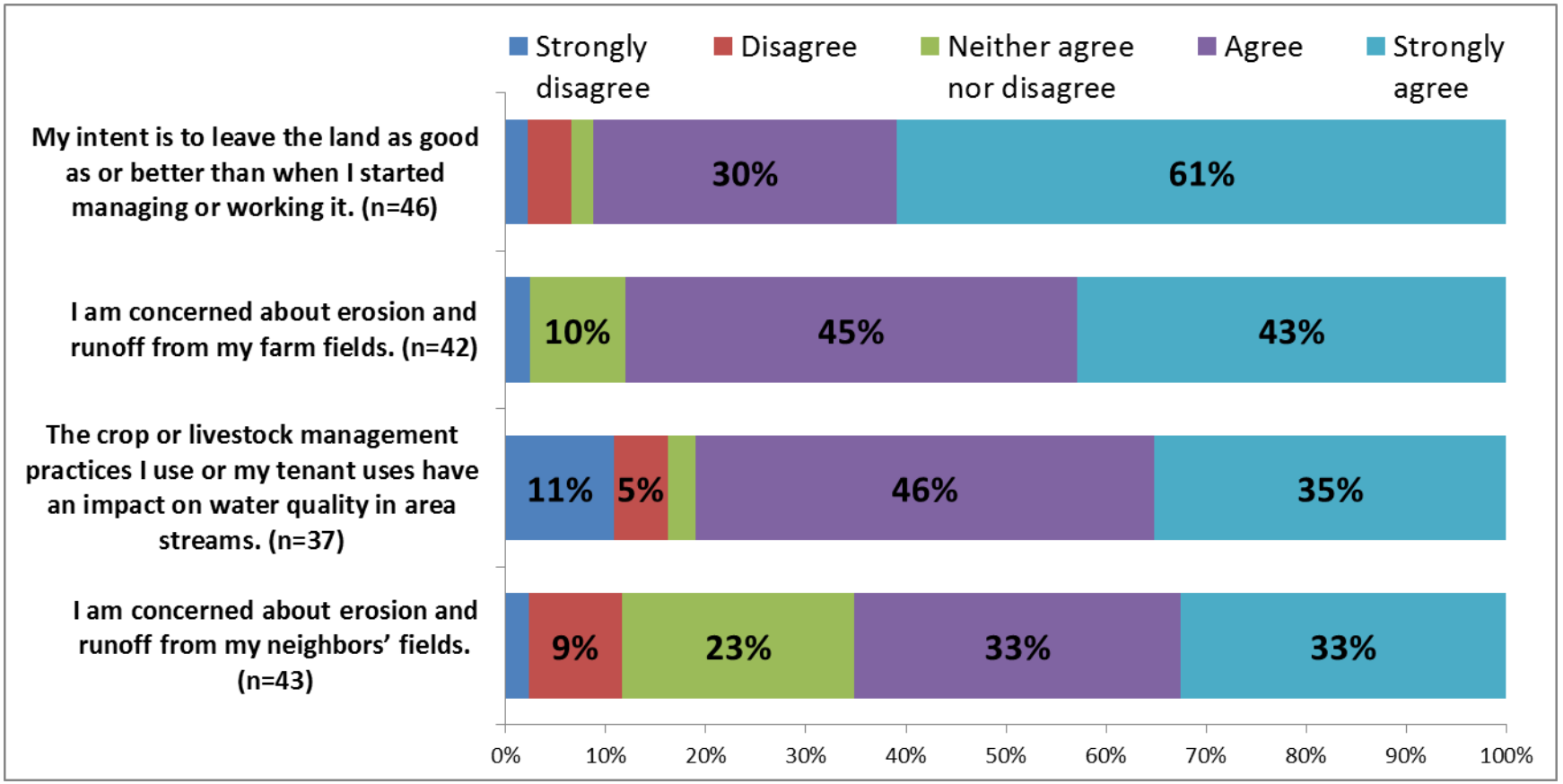
Farmers were allowed to specify if they were ***unfamiliar*** with sources. 14% registered unfamiliarity with the ***Iowa Department of Agriculture and Land Stewardship (IDALS)***.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Farmers – Beliefs

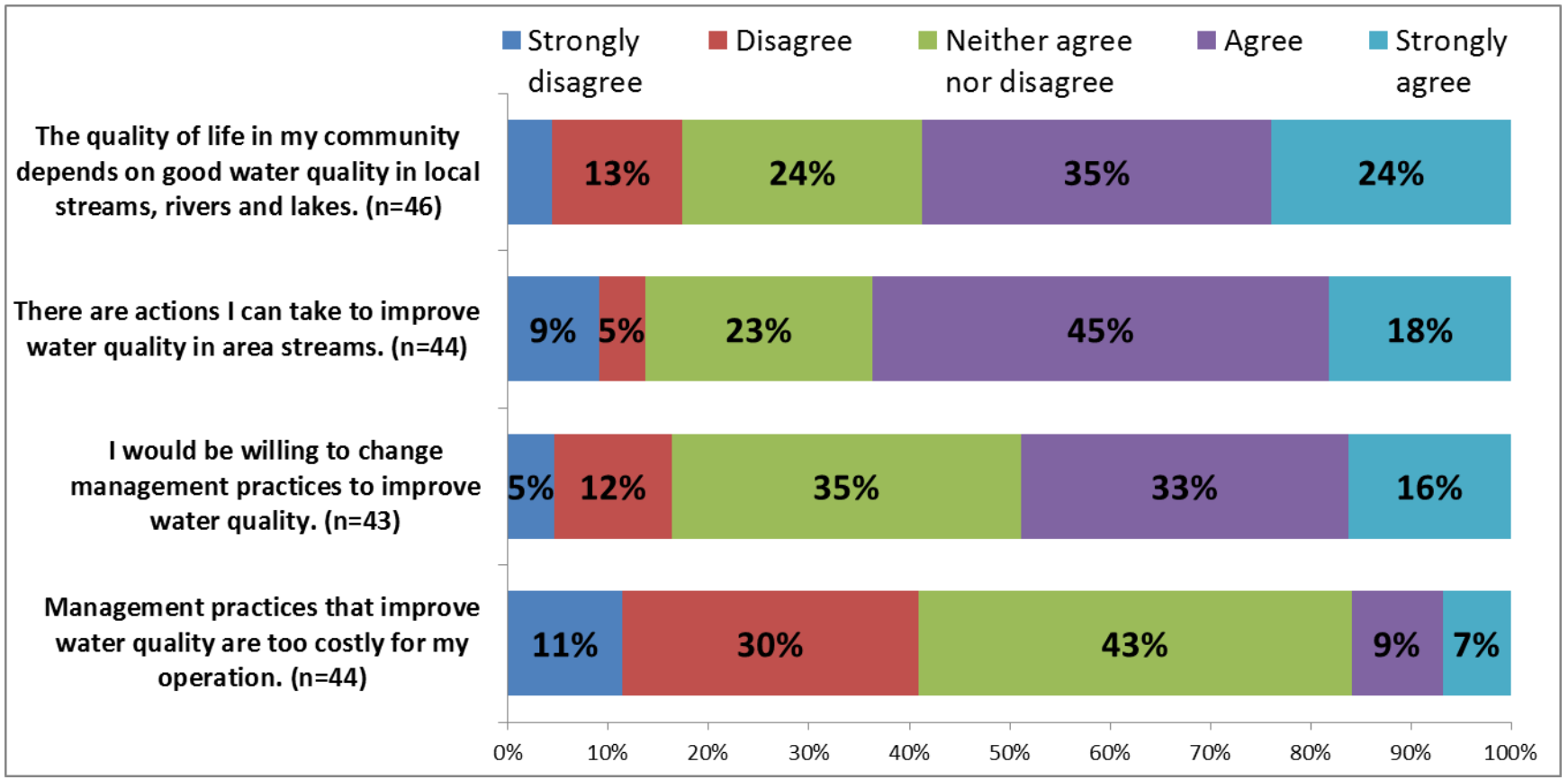
Farmers agreed most with the statement: ***"My intent is to leave the land as good as or better than when I started managing or working it."***



Q34: Please indicate your level of agreement with the statements below.

Farmers – Beliefs (cont.)

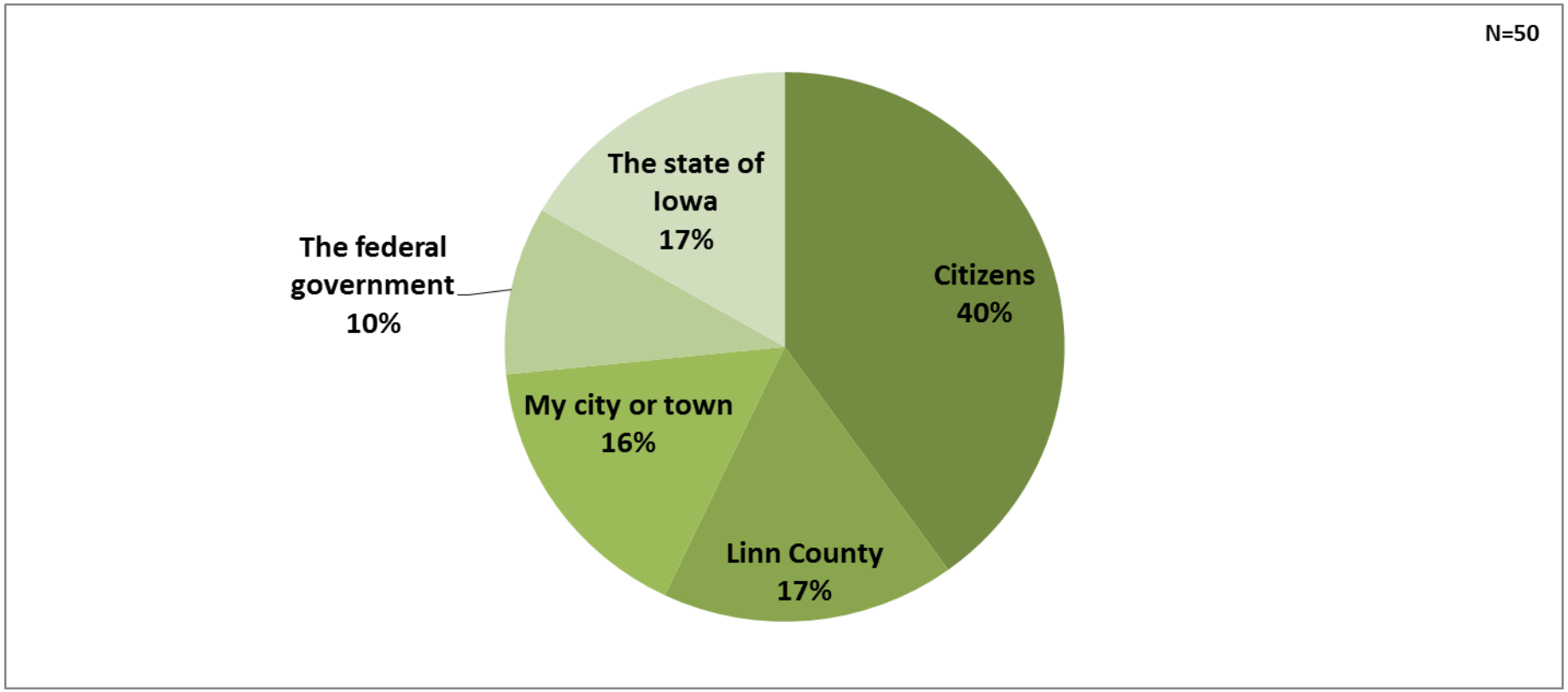
Farmers agreed least with the statement:
"Management practices that improve water quality are too costly for my operation."



Q34: Please indicate your level of agreement with the statements below.

Farmers – Responsibility for Water Quality

Farmers placed the bulk of the responsibility to help protect local water quality on ***citizens***, then split relatively equally between ***their city or town***, ***Linn County*** and ***the state of Iowa***, with the remaining tenth of the responsibility a ***federal government*** issue.

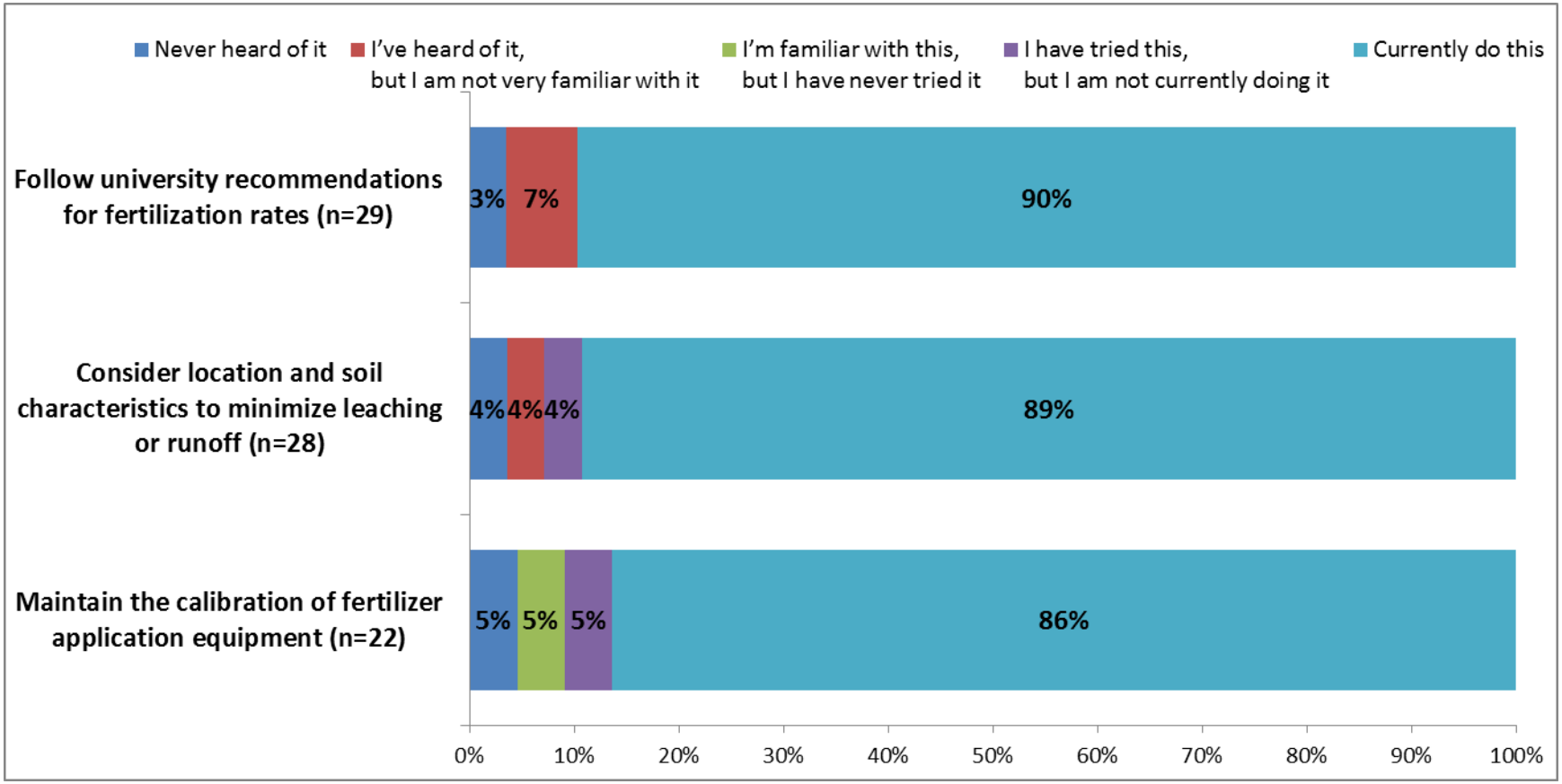


Q24. How much of the responsibility to help protect local water quality lies with each of the following entities? Assign a percentage to each, with the total adding to 100%.

Farmers – Helpful Practices

Nitrogen and Phosphorous Management Practices

A large majority of the Farmers were currently performing these practices. Farmers could select that a specific practice did not apply to them, which accounts for different sample sizes.

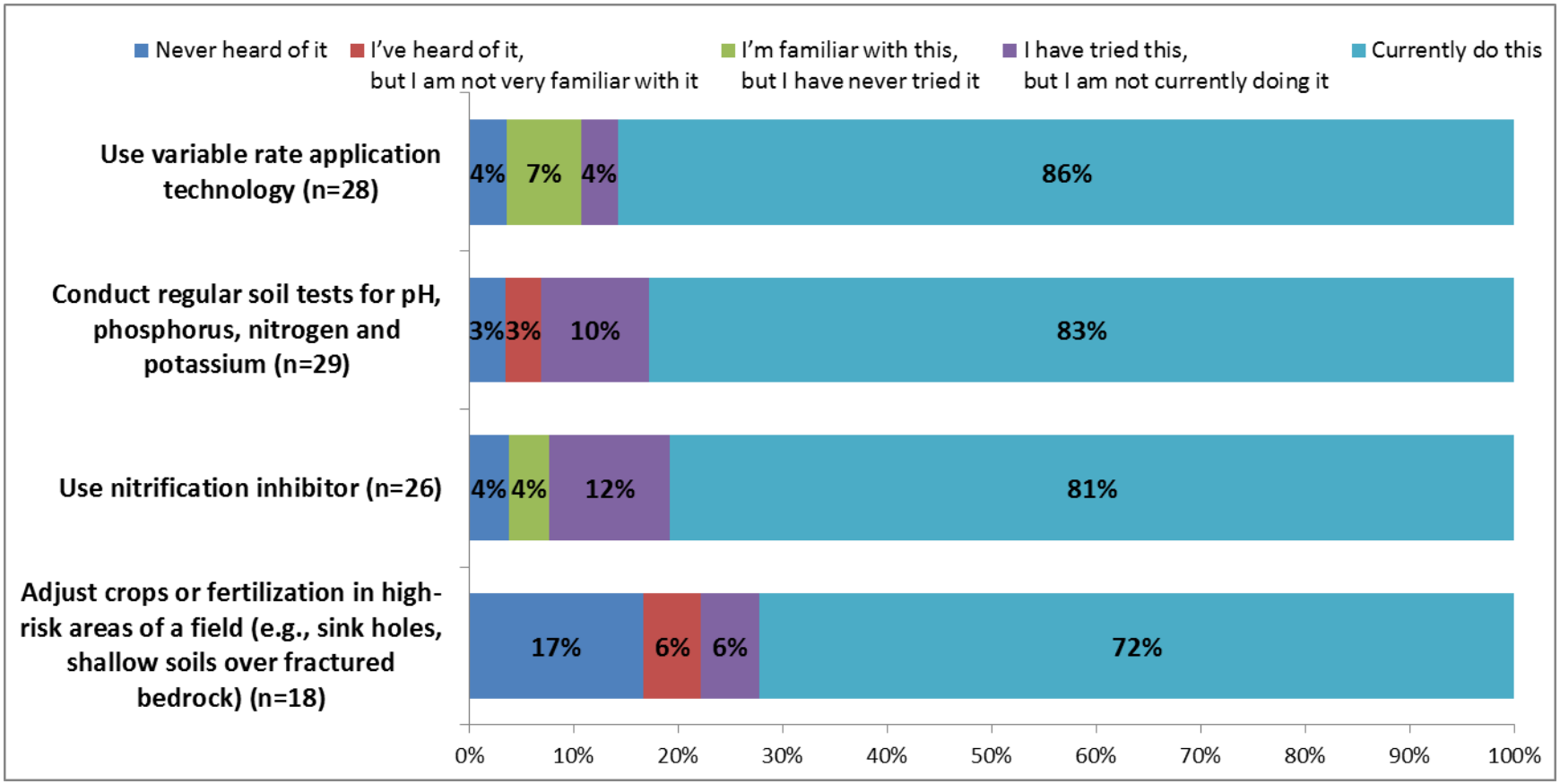


Q36. Please indicate your level of knowledge or experience with each of the following Nitrogen and Phosphorous Management Practices

Farmers – Helpful Practices (cont.)

Nitrogen and Phosphorous Management Practices

A substantial majority of applicable Farmers also currently performed these practices.

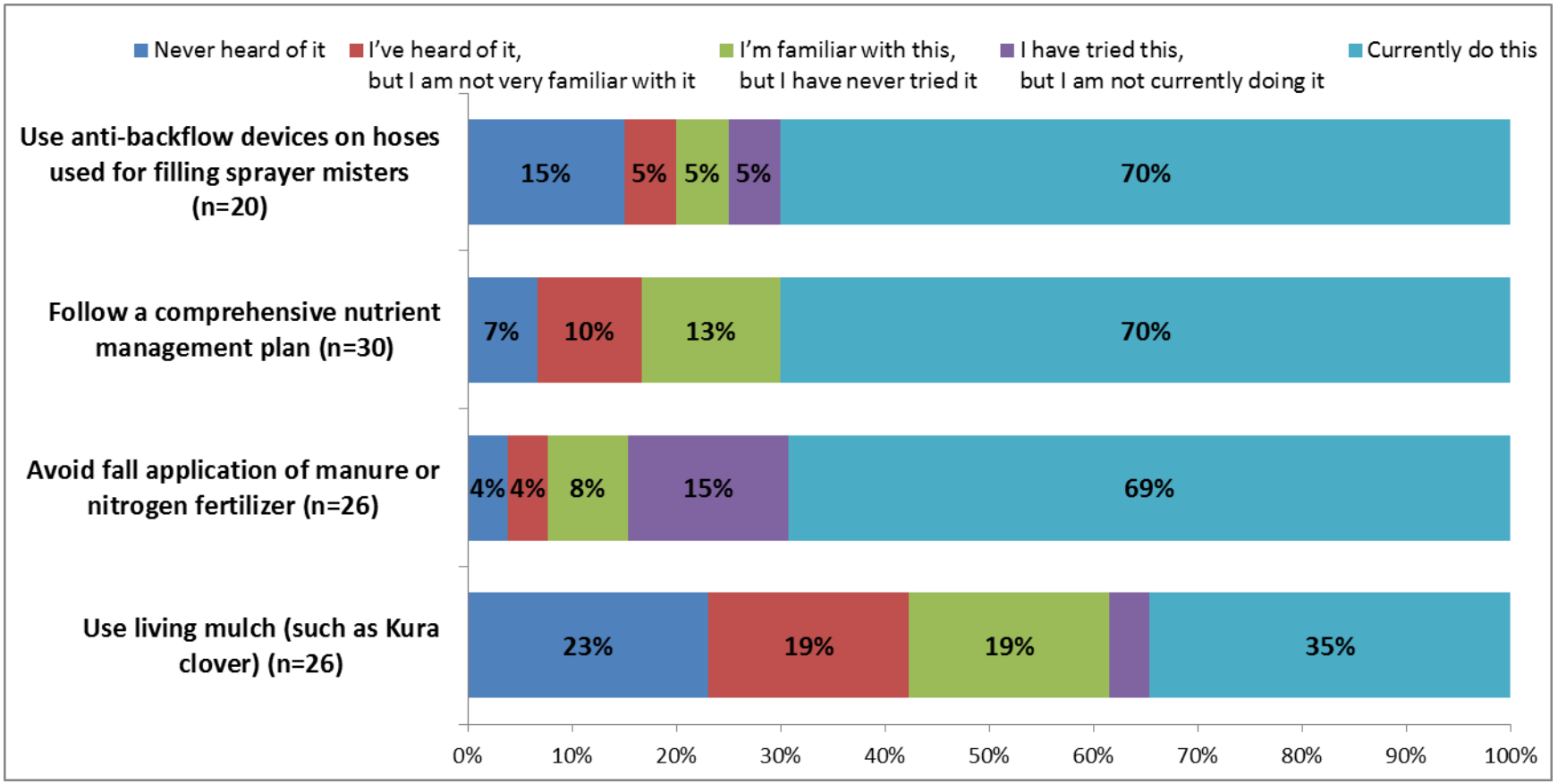


Q36. Please indicate your level of knowledge or experience with each of the following Nitrogen and Phosphorous Management Practices

Farmers – Helpful Practices (cont.)

Nitrogen and Phosphorous Management Practices

The helpful practice with the lowest Farmer usage was ***using living mulch (such as Kura clover)***.

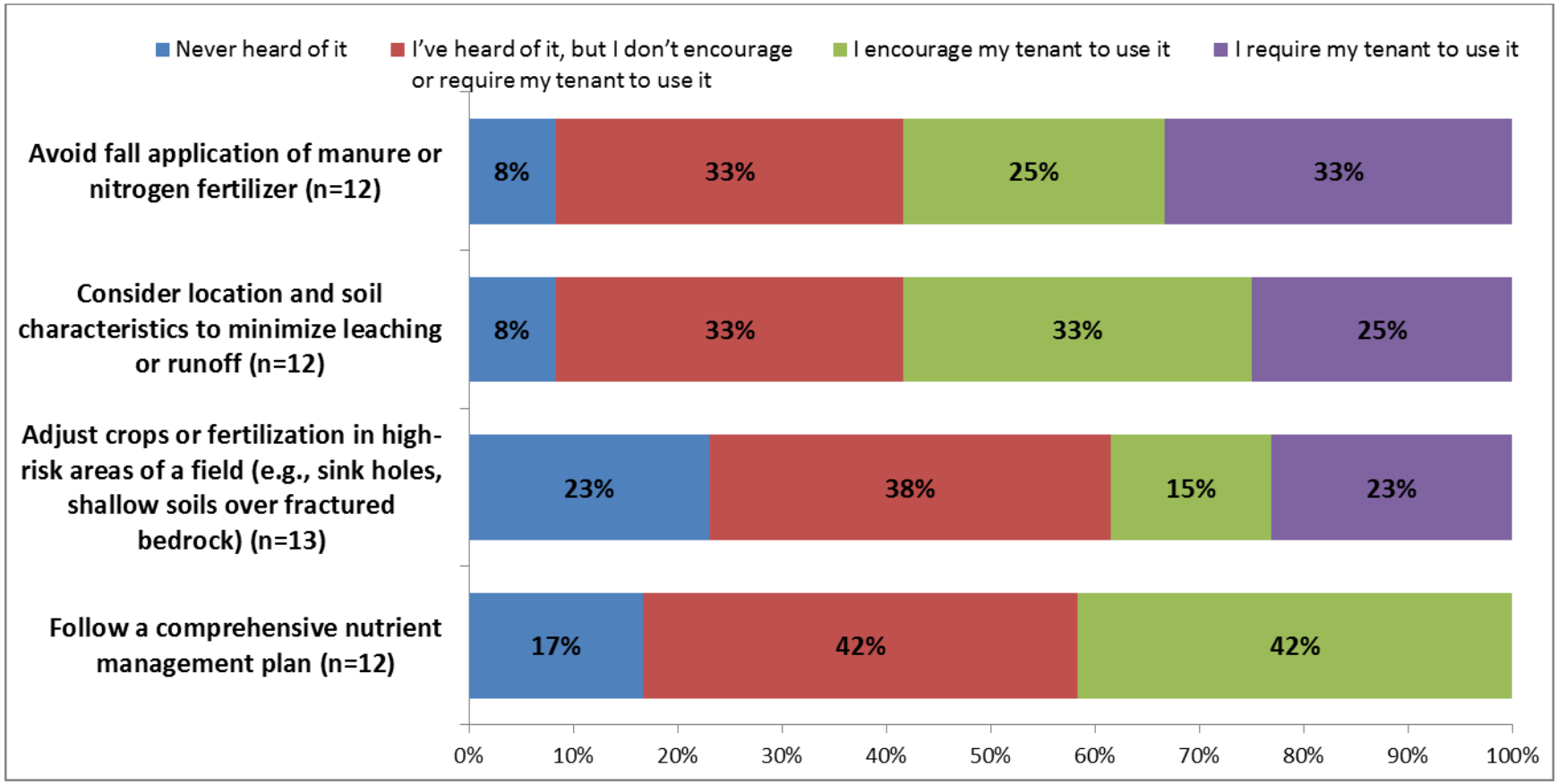


Q36. Please indicate your level of knowledge or experience with each of the following Nitrogen and Phosphorous Management Practices

Farm Owners – Helpful Practices (cont.)

Nitrogen and Phosphorous Management Practices

Some Farm Owners reported requiring (or encouraging) the usage of some of these same practices.

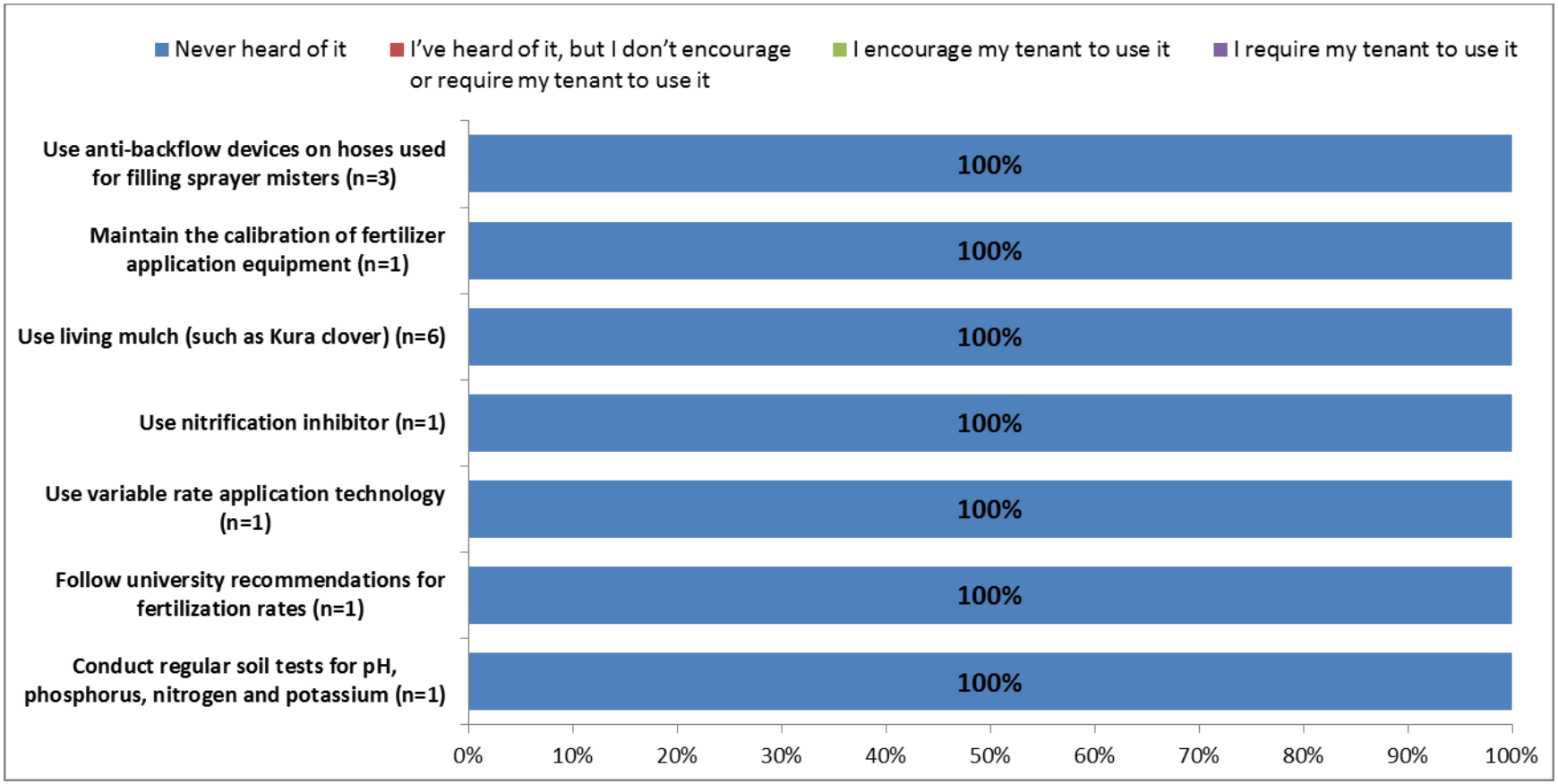


Q36. Please indicate your level of knowledge or experience with each of the following Nitrogen and Phosphorous Management Practices

Farm Owners – Helpful Practices (cont.)

Nitrogen and Phosphorous Management Practices

However, some Farm Owners have also **never heard of** many of these helpful practices.

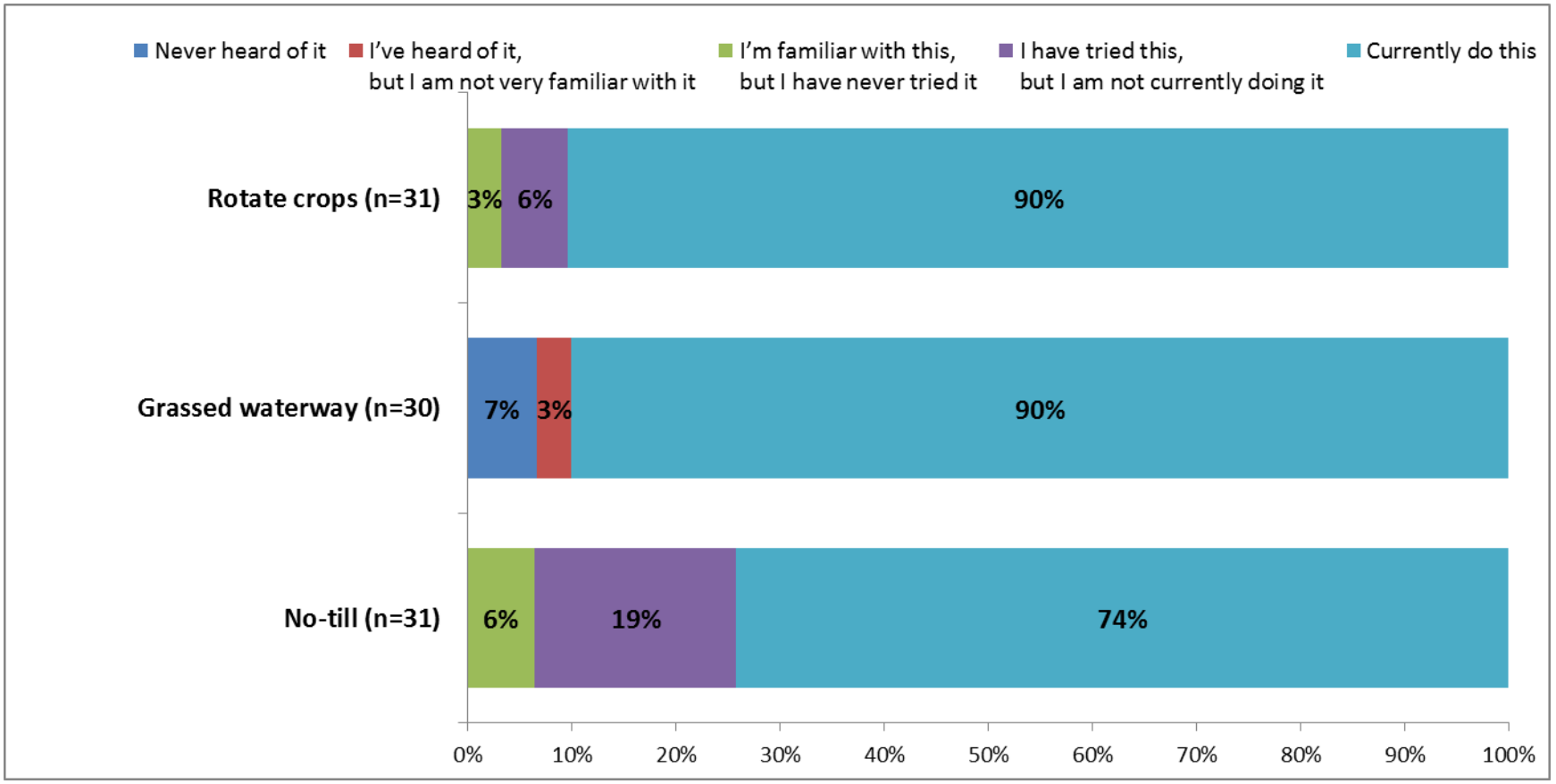


Q36. Please indicate your level of knowledge or experience with each of the following Nitrogen and Phosphorous Management Practices

Farmers – Helpful Practices (cont.)

Land Use Management Practices

A large majority of applicable Farmers currently engaged in these practices.

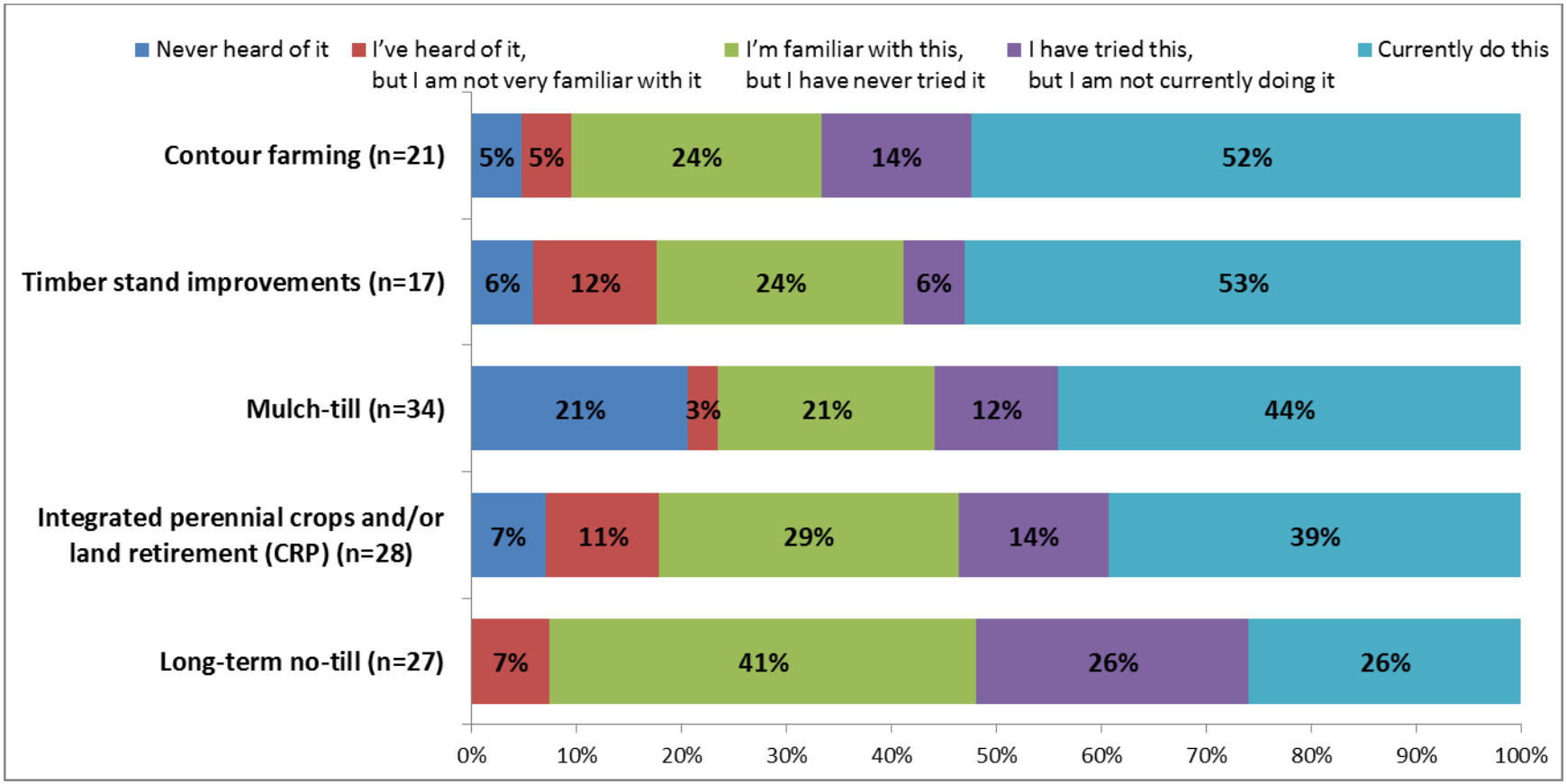


Q38. Please indicate your level of knowledge or experience with each of the following Land Use Management Practices

Farmers – Helpful Practices (cont.)

Land Use Management Practices

A majority of applicable Farmers reported either currently or previously using these practices.

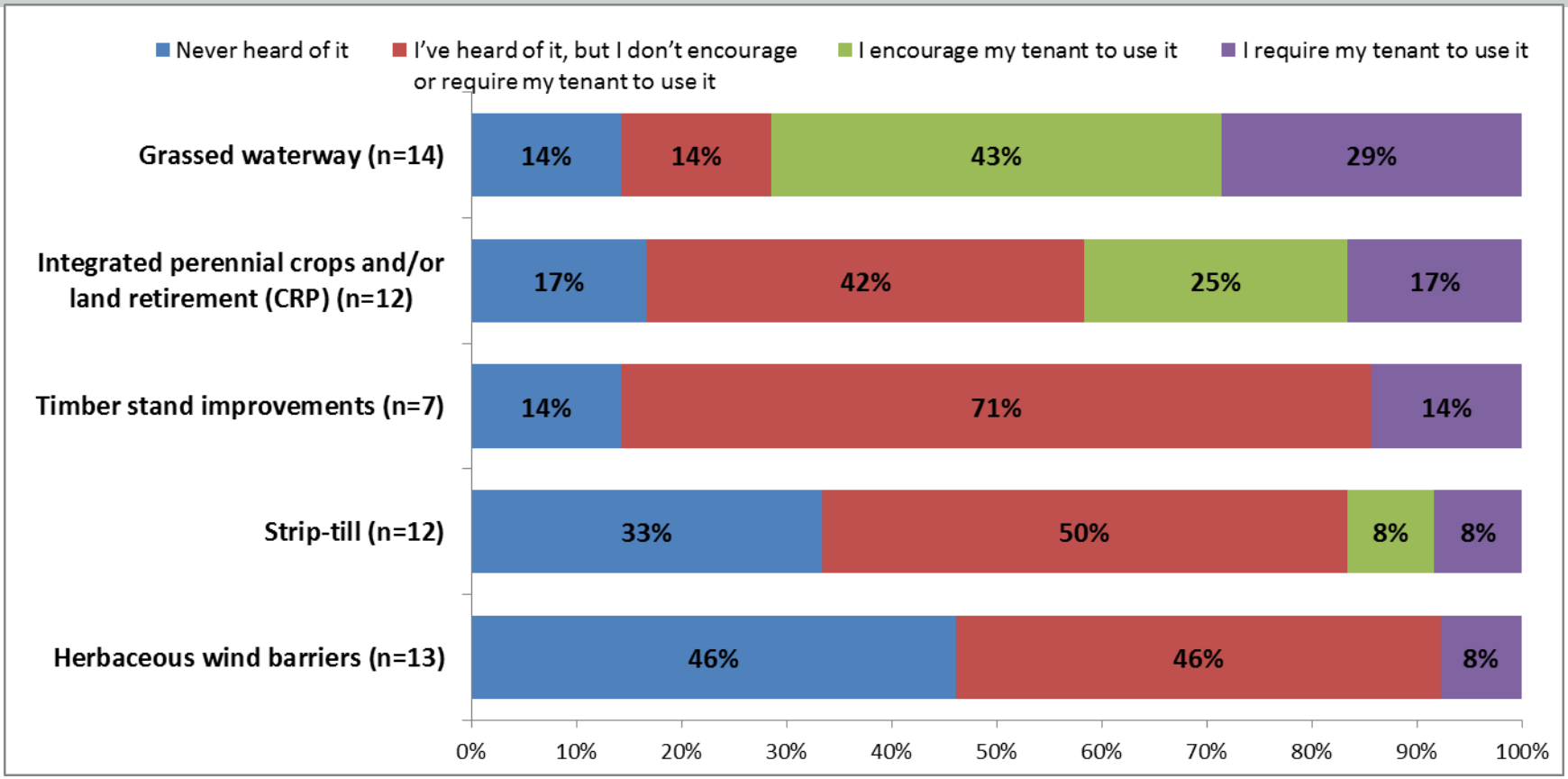


Q38. Please indicate your level of knowledge or experience with each of the following Land Use Management Practices

Farm Owners – Helpful Practices (cont.)

Land Use Management Practices

A majority of Farm Owners required/encouraged the use of grassed waterways but not the other practices listed below.

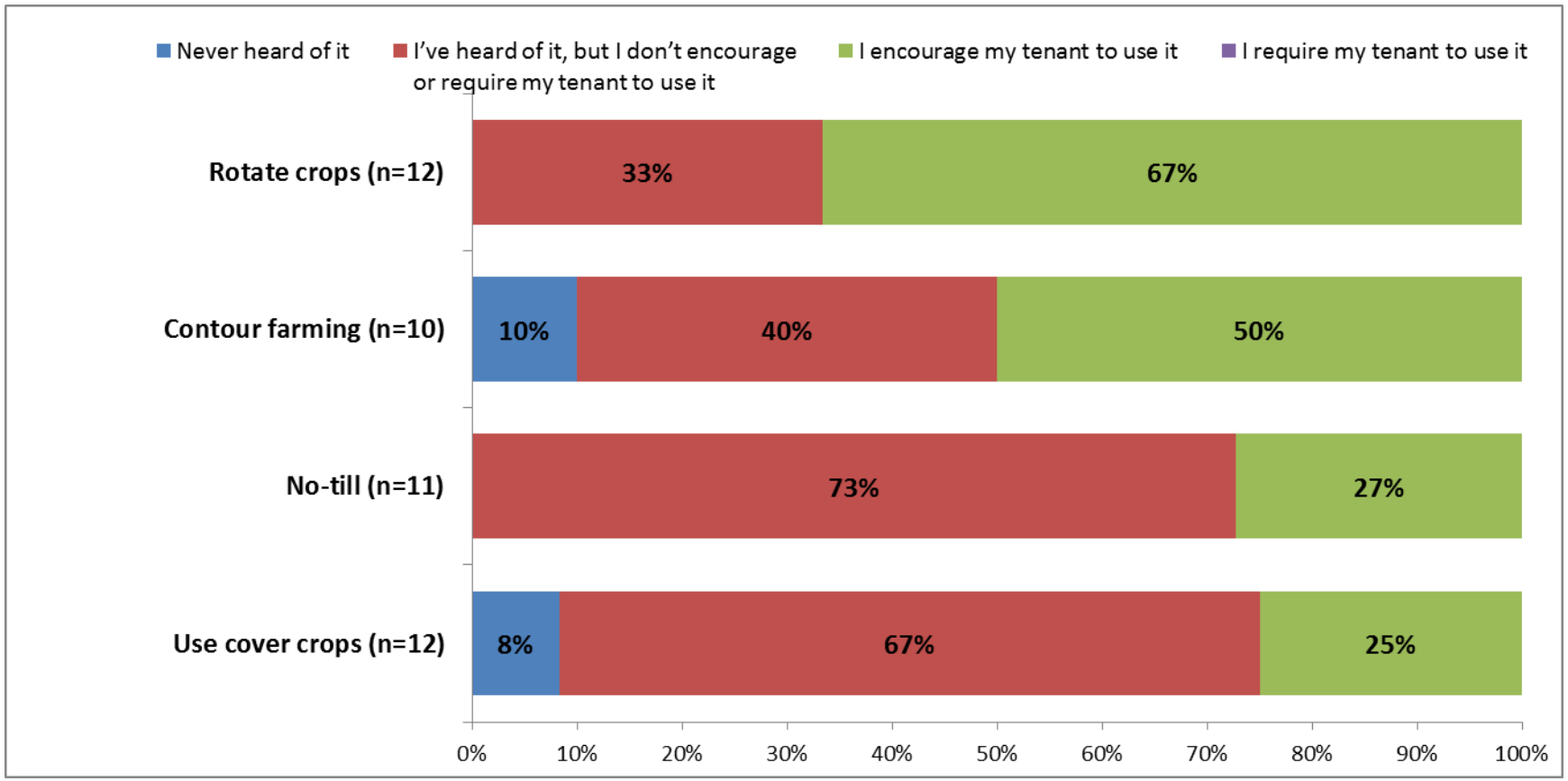


Q38. Please indicate your level of knowledge or experience with each of the following Land Use Management Practices

Farm Owners – Helpful Practices (cont.)

Land Use Management Practices

Some Farm Owners encouraged (but did not require) other of these same practices.

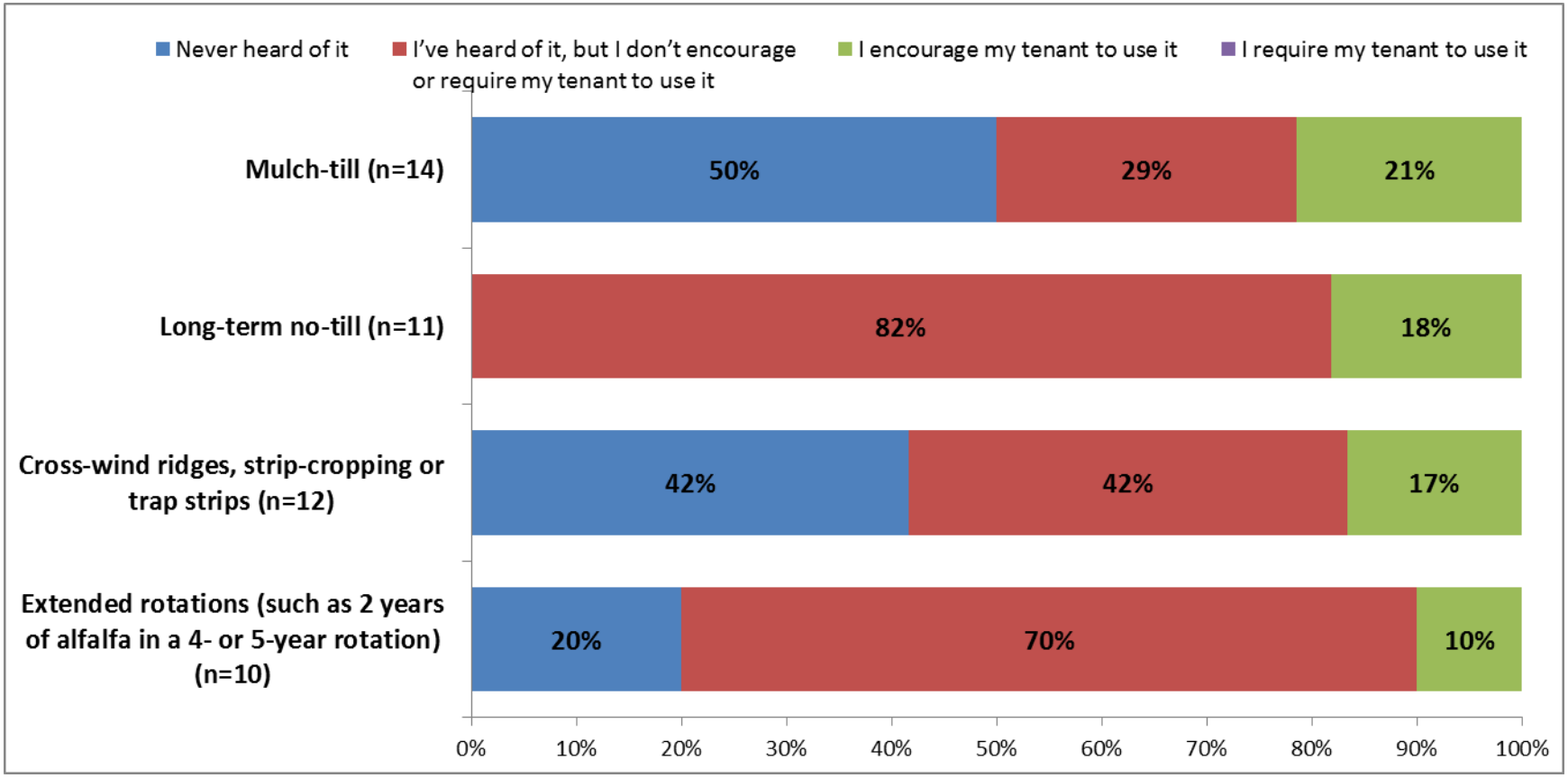


Q38. Please indicate your level of knowledge or experience with each of the following Land Use Management Practices

Farm Owners – Helpful Practices (cont.)

Land Use Management Practices

None of these practices were being required. A few Farmers encouraged their tenants to use them.

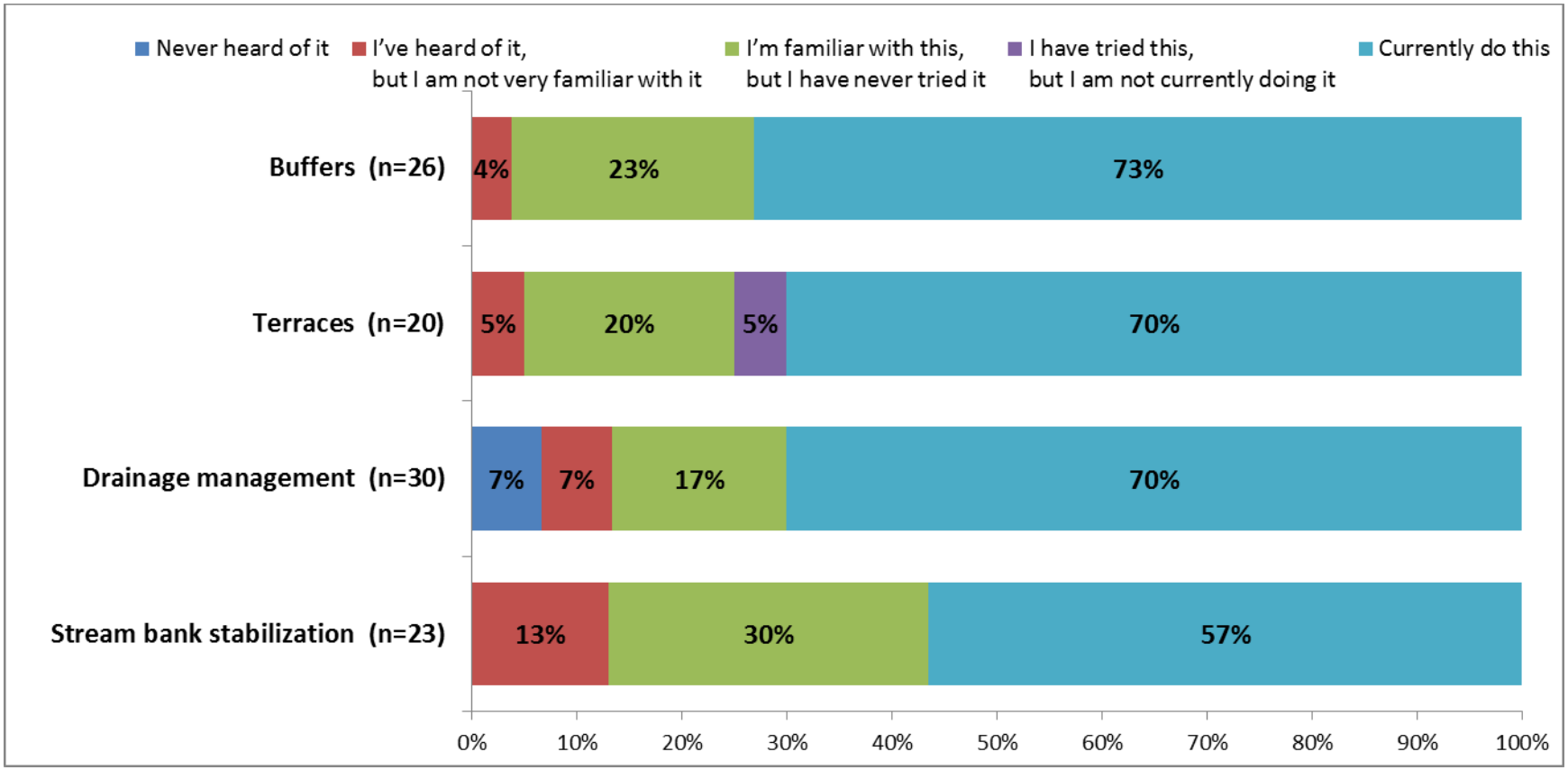


Q38. Please indicate your level of knowledge or experience with each of the following Land Use Management Practices

Farmers – Helpful Practices (cont.)

Soil and Water Conservation Practices

A majority of applicable Farmers stated that they currently perform these practices.

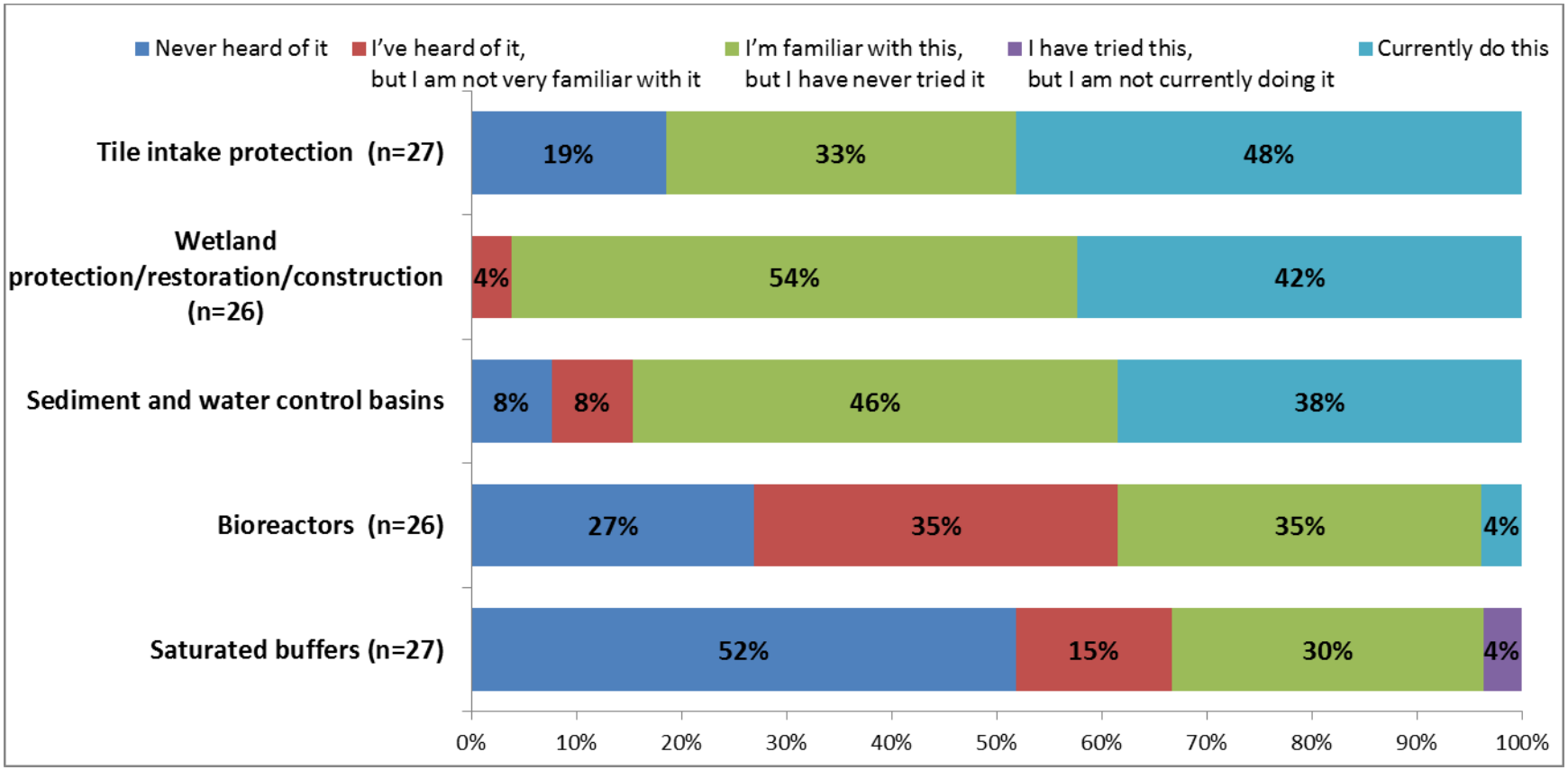


Q40. Please indicate your level of knowledge or experience with each of the following Soil and Water Conservation Practices.

Farmers – Helpful Practices (cont.)

Soil and Water Conservation Practices

No Farmers have tried ***saturated buffers*** and only two have used ***bioreactors***.

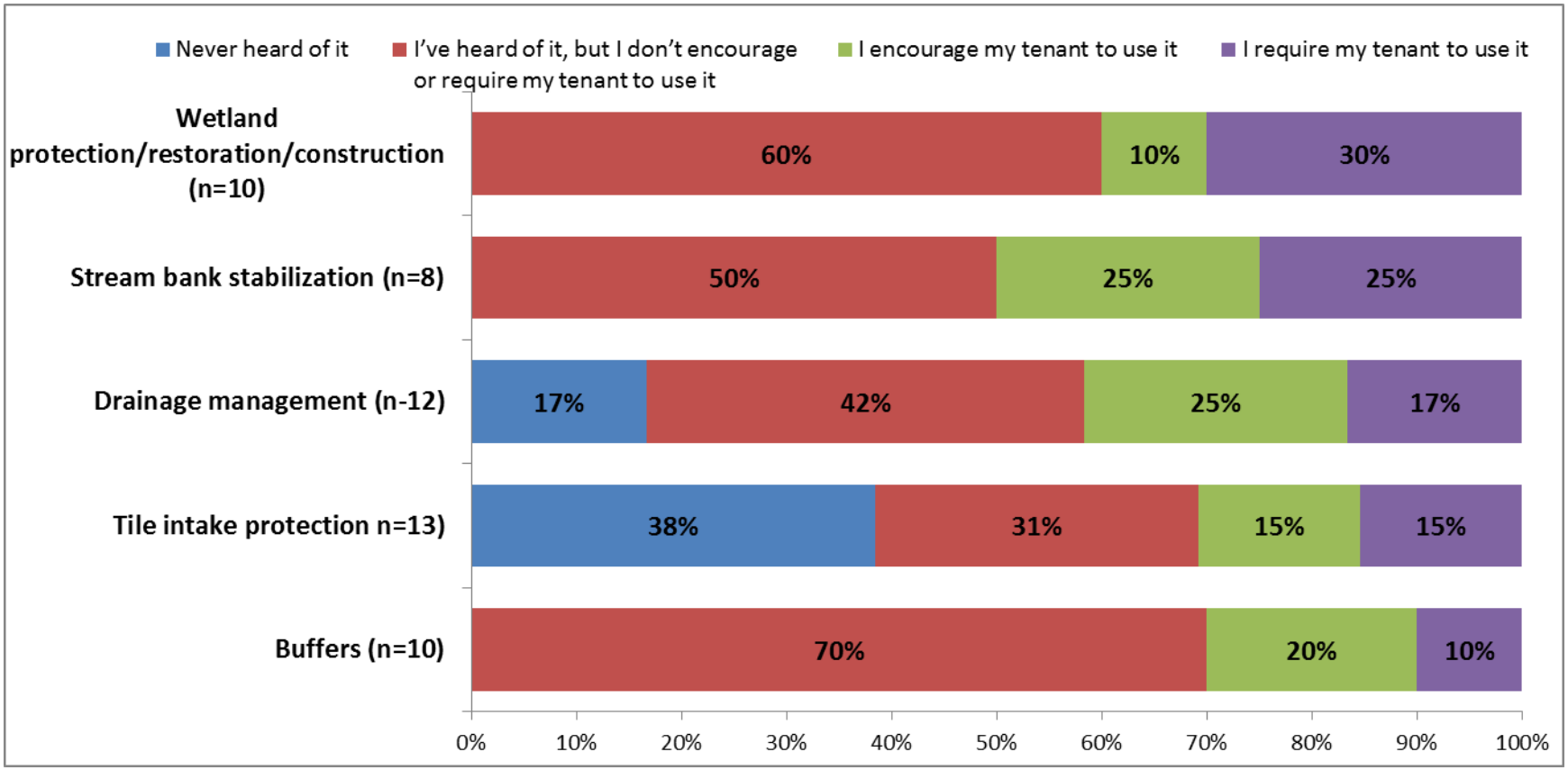


Q40. Please indicate your level of knowledge or experience with each of the following Soil and Water Conservation Practices.

Farm Owners – Helpful Practices (cont.)

Soil and Water Conservation Practices

30%-50% of Farm Owners have required/encouraged the usage of these practices.

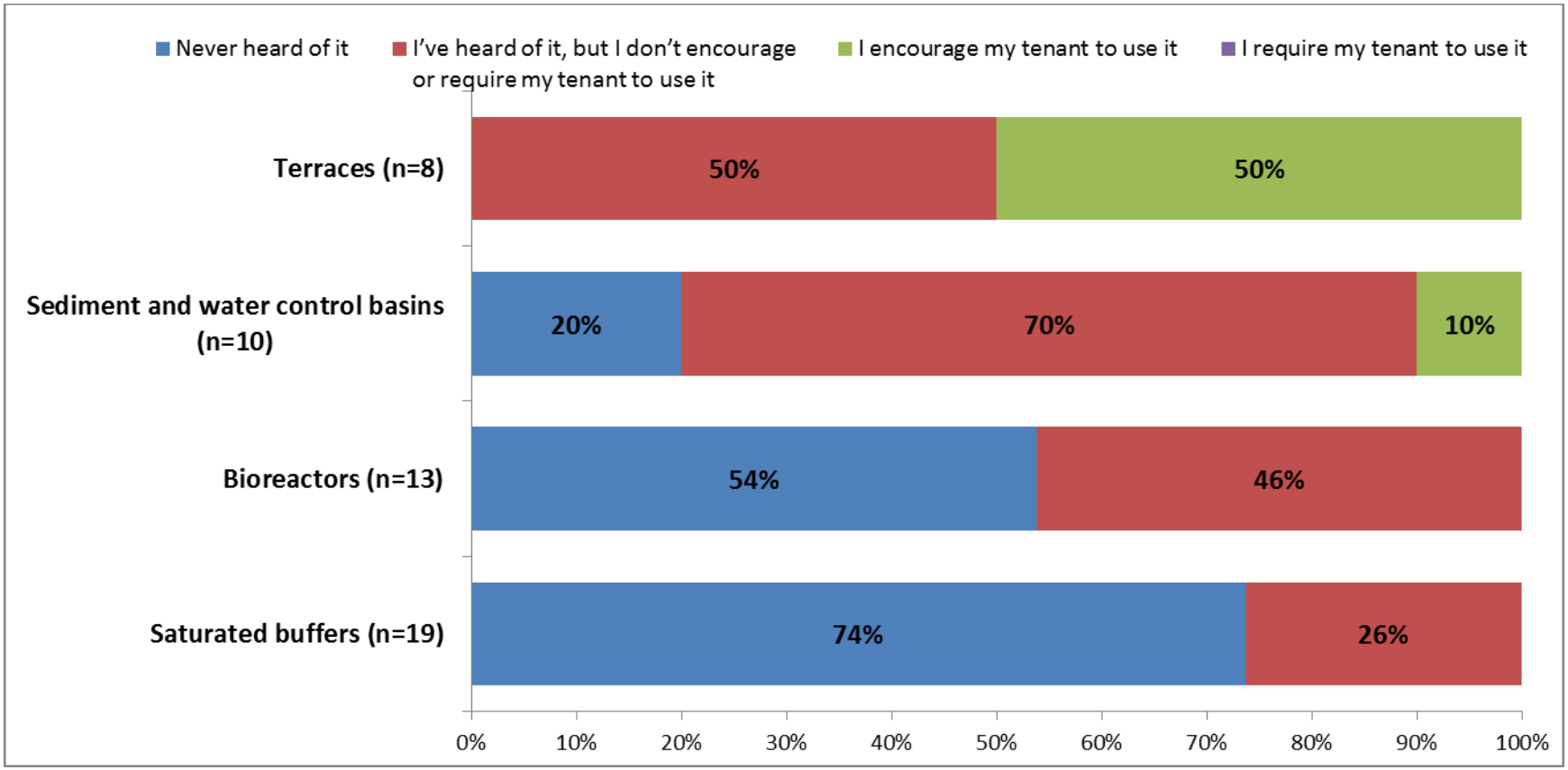


Q40. Please indicate your level of knowledge or experience with each of the following Soil and Water Conservation Practices.

Farm Owners – Helpful Practices (cont.)

Soil and Water Conservation Practices

Except for terraces, these practices were barely encouraged at all by Farm Owners.



Q40. Please indicate your level of knowledge or experience with each of the following Soil and Water Conservation Practices.

Farmers – Helpful Practices (cont.)

Overall List

Of all helpful practices, >80% of Farmers participated in those below.

PRACTICE	I currently do this
Rotate crops (n=31)	90%
Grassed waterway (n=30)	90%
Follow university recommendations for fertilization rates (n=29)	90%
Consider location and soil characteristics to minimize leaching or runoff (n=28)	89%
Maintain the calibration of fertilizer application equipment (n=22)	86%
Use variable rate application technology (n=28)	86%
Conduct regular soil tests for pH, phosphorus, nitrogen and potassium (n=29)	83%
Use nitrification inhibitor (n=26)	81%

Farmers – Helpful Practices (cont.)

Overall List

Of all helpful practices, 51-80% of Farmers participated in those below.

PRACTICE	I currently do this
No-till (n=31)	74%
Buffers (n=26)	73%
Adjust crops or fertilization in high-risk areas of a field (e.g., sink holes, shallow soils over fractured bedrock) (n=18)	72%
Follow a comprehensive nutrient management plan (n=30)	70%
Use anti-backflow devices on hoses used for filling sprayer misters (n=20)	70%
Drainage management (n=30)	70%
Terraces (n=20)	70%
Avoid fall application of manure or nitrogen fertilizer (n=26)	69%
Stream bank stabilization (n=23)	57%
Timber stand improvements (n=17)	53%
Contour farming (n=21)	52%

Farmers – Helpful Practices (cont.)

Overall List

Of all helpful practices, 31-50% of Farmers participated in those below.

PRACTICE	I currently do this
Tile intake protection (n=27)	48%
Mulch-till (n=34)	44%
Wetland protection/restoration/construction (n=26)	42%
Integrated perennial crops and/or land retirement (CRP) (n=28)	39%
Sediment and water control basins (n=27)	38%
Use living mulch (such as Kura clover) (n=26)	35%
Extended rotations (such as 2 years of alfalfa in a 4- or 5-year rotation) (n=26)	35%

Farmers – Helpful Practices (cont.)

Overall List

Of all helpful practices, 0-30% of Farmers participated in those below.

PRACTICE	I currently do this
Use cover crops (n=30)	30%
Long-term no-till (n=27)	26%
Herbaceous wind barriers (n=24)	21%
Cross-wind ridges, strip-cropping or trap strips (n=23)	17%
Bioreactors (n=26)	4%
Strip-till (n=27)	4%
Saturated buffers (n=27)	0%

Farm Owners – Helpful Practices (cont.)

Overall List

Of all helpful practices, >50% of Farmers participated in those below.

PRACTICE	I encourage or require my tenant to use it
Grassed waterway (n=14)	71%
Rotate crops (n=12)	67%
Avoid fall application of manure or nitrogen fertilizer (n=12)	58%
Consider location and soil characteristics to minimize leaching or runoff (n=12)	58%

Farm Owners – Helpful Practices (cont.)

Overall List

Of all helpful practices, 31-50% of Farm Owners participated in those below.

PRACTICE	I encourage or require my tenant to use it
Stream bank stabilization (n=8)	50%
Contour farming (n=10)	50%
Terraces (n=8)	50%
Follow a comprehensive nutrient management plan (n=12)	42%
Integrated perennial crops and/or land retirement (CRP) (n=12)	42%
Drainage management (n=12)	42%
Wetland protection/restoration/construction (n=10)	40%
Adjust crops or fertilization in high-risk areas of a field (e.g., sink holes, shallow soils over fractured bedrock) (n=13)	38%
Tile intake protection n=13)	31%

Farm Owners – Helpful Practices (cont.)

Overall List

Of all helpful practices, 11-30% of Farm Owners participated in those below.

PRACTICE	I encourage or require my tenant to use it
Buffers (n=10)	30%
No-till (n=11)	27%
Use cover crops (n=12)	25%
Mulch-till (n=14)	21%
Long-term no-till (n=11)	18%
Strip-till (n=12)	17%
Cross-wind ridges, strip-cropping or trap strips (n=12)	17%
Timber stand improvements (n=7)	14%

Farm Owners – Helpful Practices (cont.)

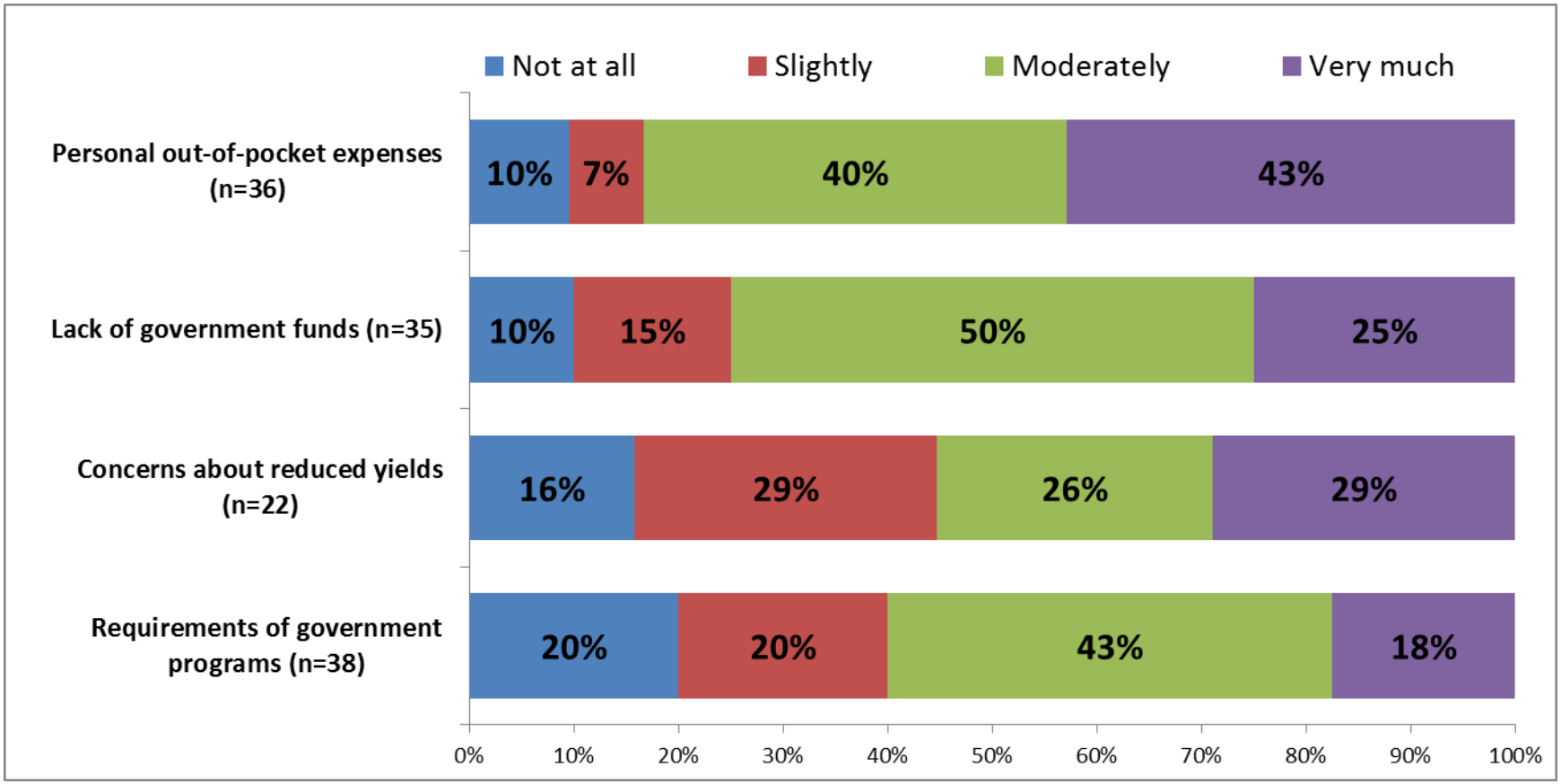
Overall List

Of all helpful practices, 0-10% of Farm Owners participated in those below.

PRACTICE	I encourage or require my tenant to use it
Extended rotations (such as 2 years of alfalfa in a 4- or 5-year rotation) (n=10)	10%
Sediment and water control basins (n=10)	10%
Herbaceous wind barriers (n=13)	8%
Conduct regular soil tests for pH, phosphorus, nitrogen and potassium (n=1)	0%
Follow university recommendations for fertilization rates (n=1)	0%
Use variable rate application technology (n=1)	0%
Use nitrification inhibitor (n=1)	0%
Use living mulch (such as Kura clover) (n=6)	0%
Maintain the calibration of fertilizer application equipment (n=1)	0%
Use anti-backflow devices on hoses used for filling sprayer misters (n=3)	0%
Saturated buffers (n=19)	0%
Bioreactors (n=13)	0%

Farmers – Barriers to Change

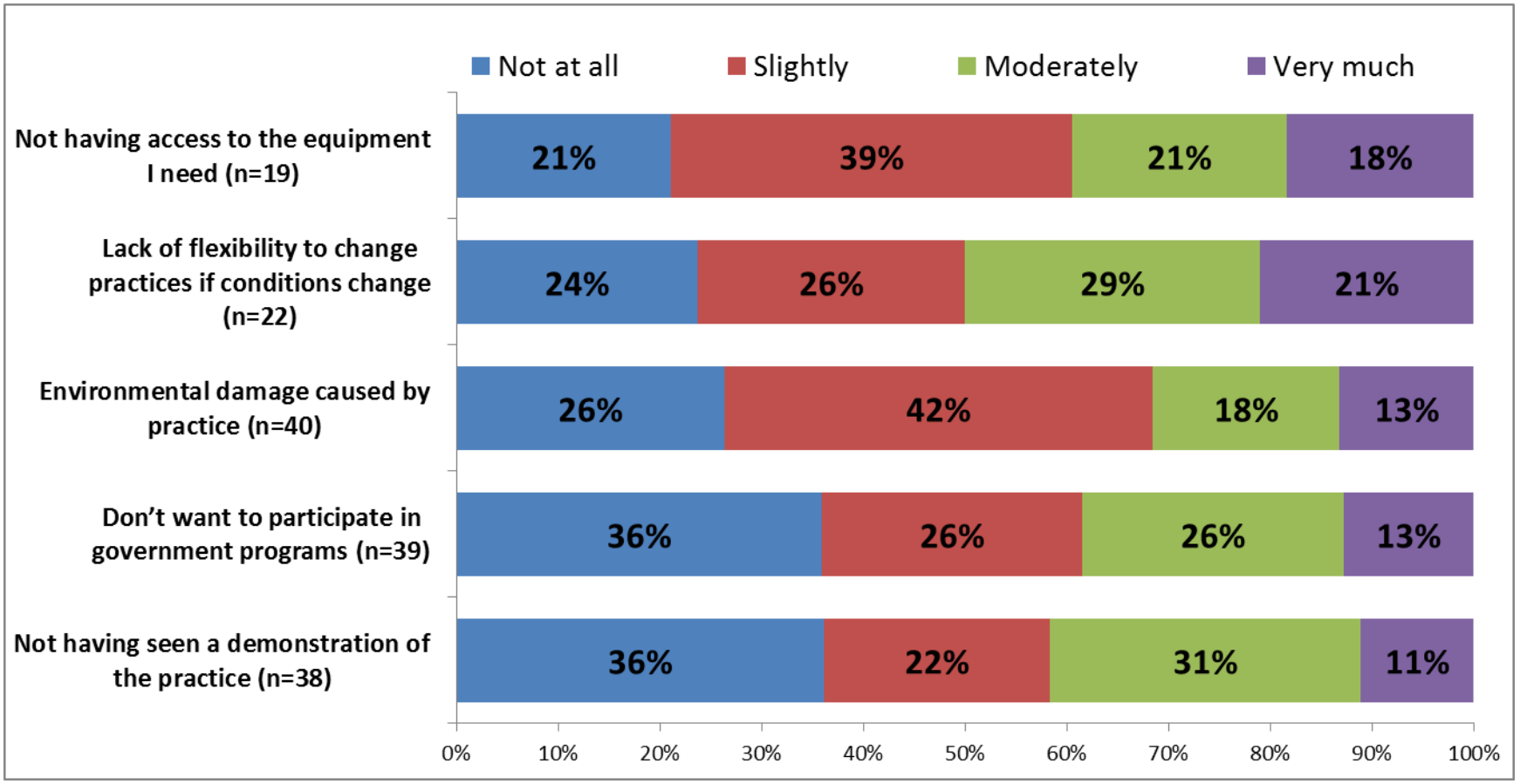
Personal out-of-pocket expenses was the greatest barrier to changing management practices.



Q42. How much do each of the following limit your ability to change your management practices?

Farmers – Barriers to Change (cont.)

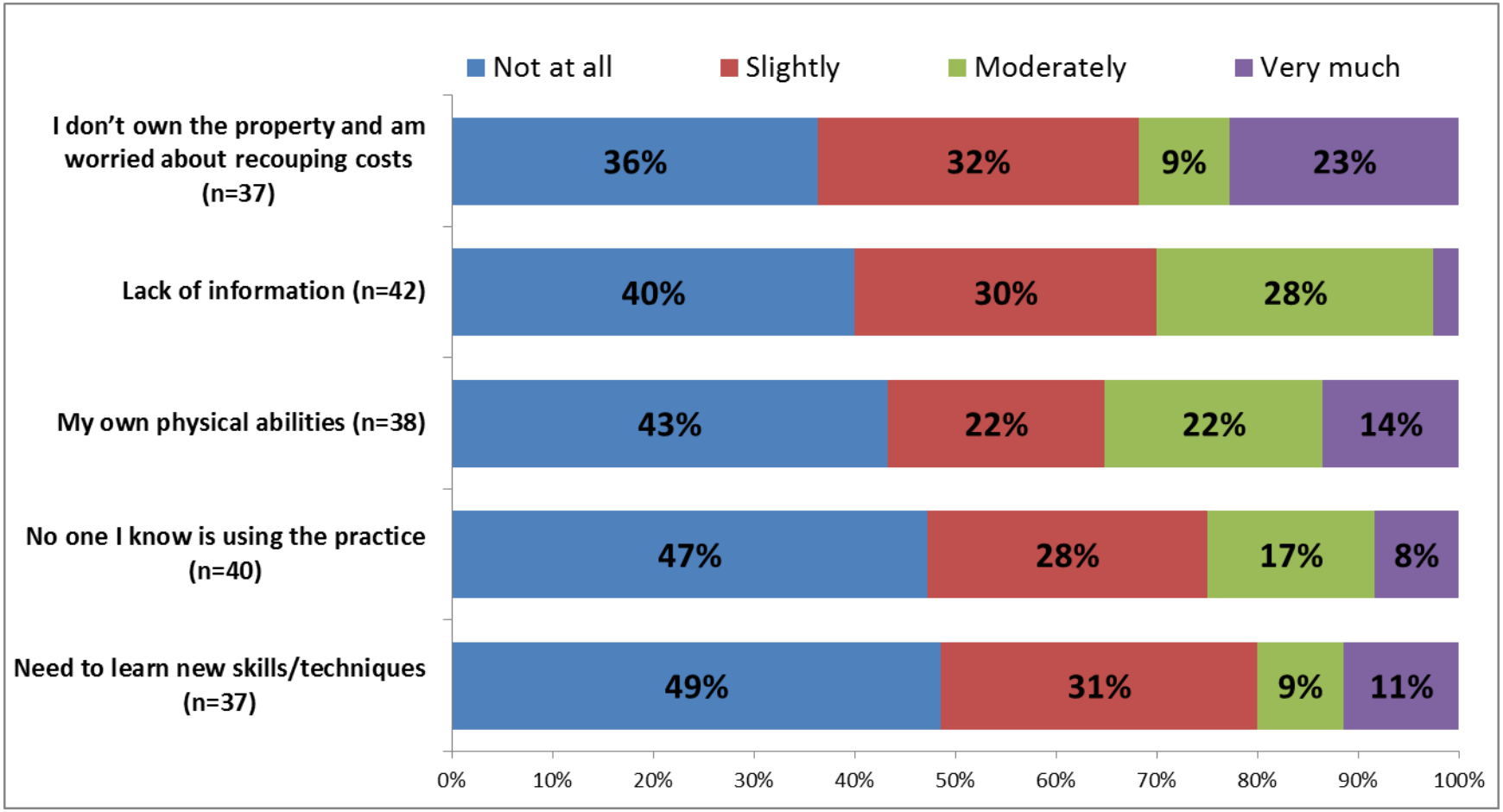
Several other aspects were, at a minimum, slight barriers to changing management practices.



Q42. How much do each of the following limit your ability to change your management practices?

Farmers – Barriers to Change (cont.)

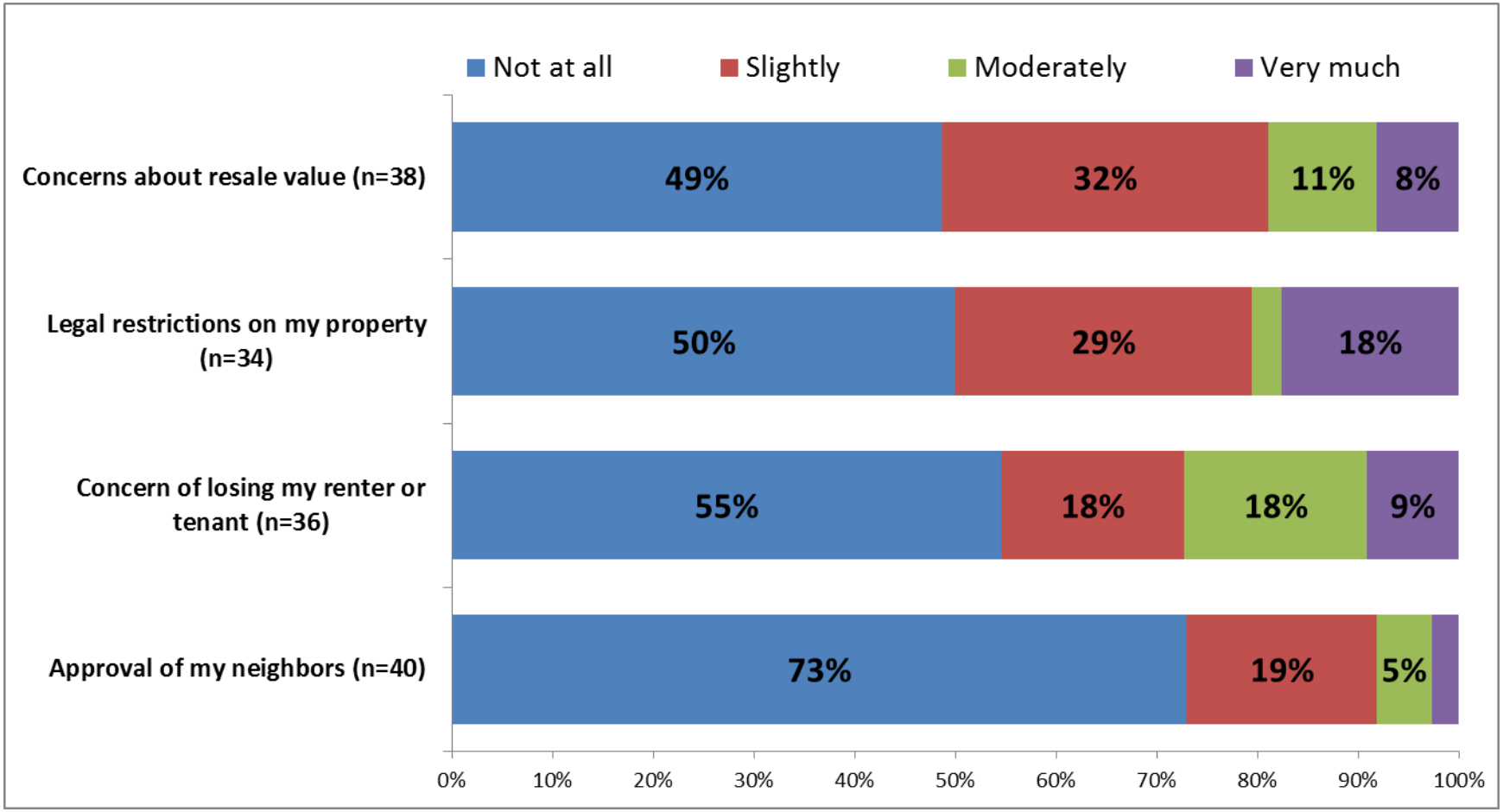
Most of these factors posed no to slight barriers for the majority of the Farmers.



Q42. How much do each of the following limit your ability to change your management practices?

Farmers – Barriers to Change (cont.)

Approval of neighbors was the smallest barrier to changing management practices.

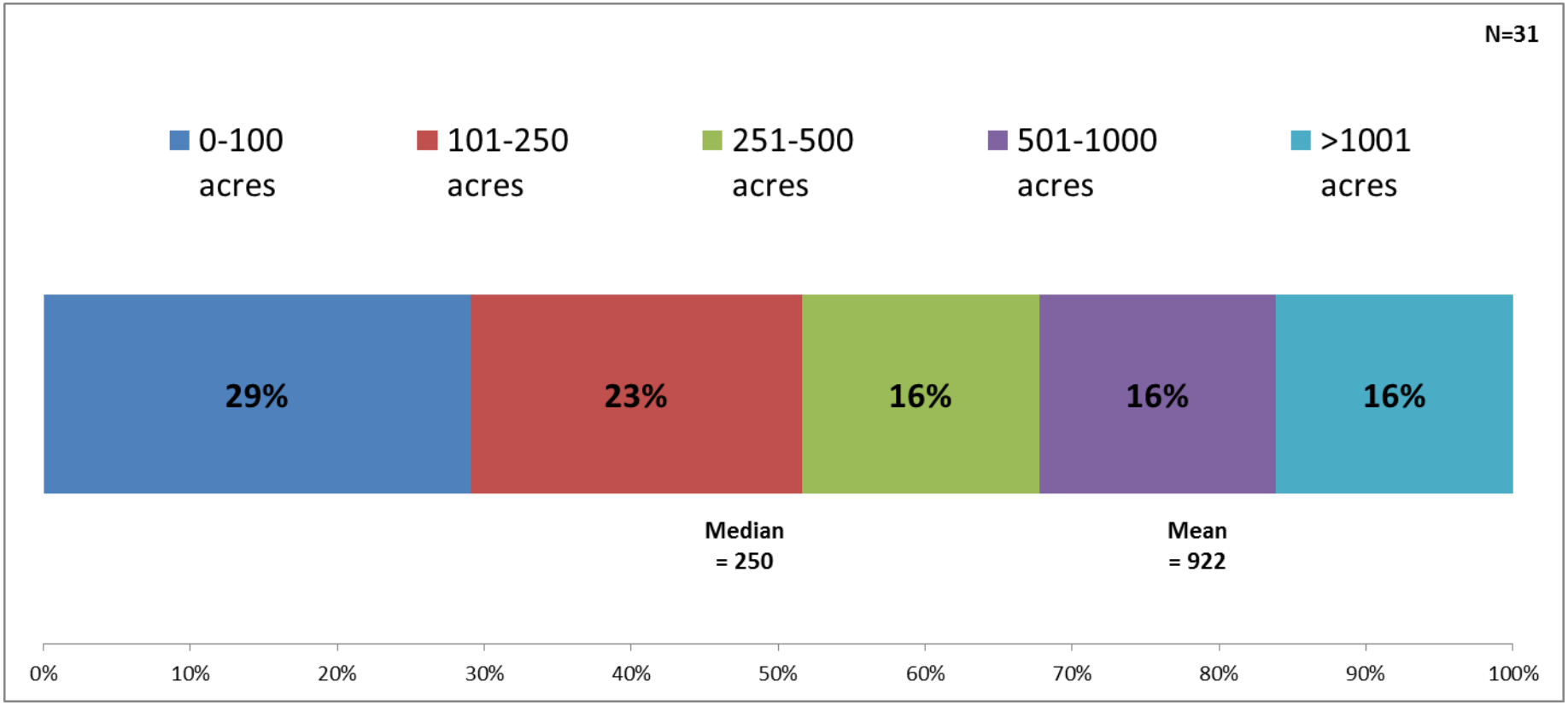


Q42. How much do each of the following limit your ability to change your management practices?

Demographics

Farmers – Tillable Acreage

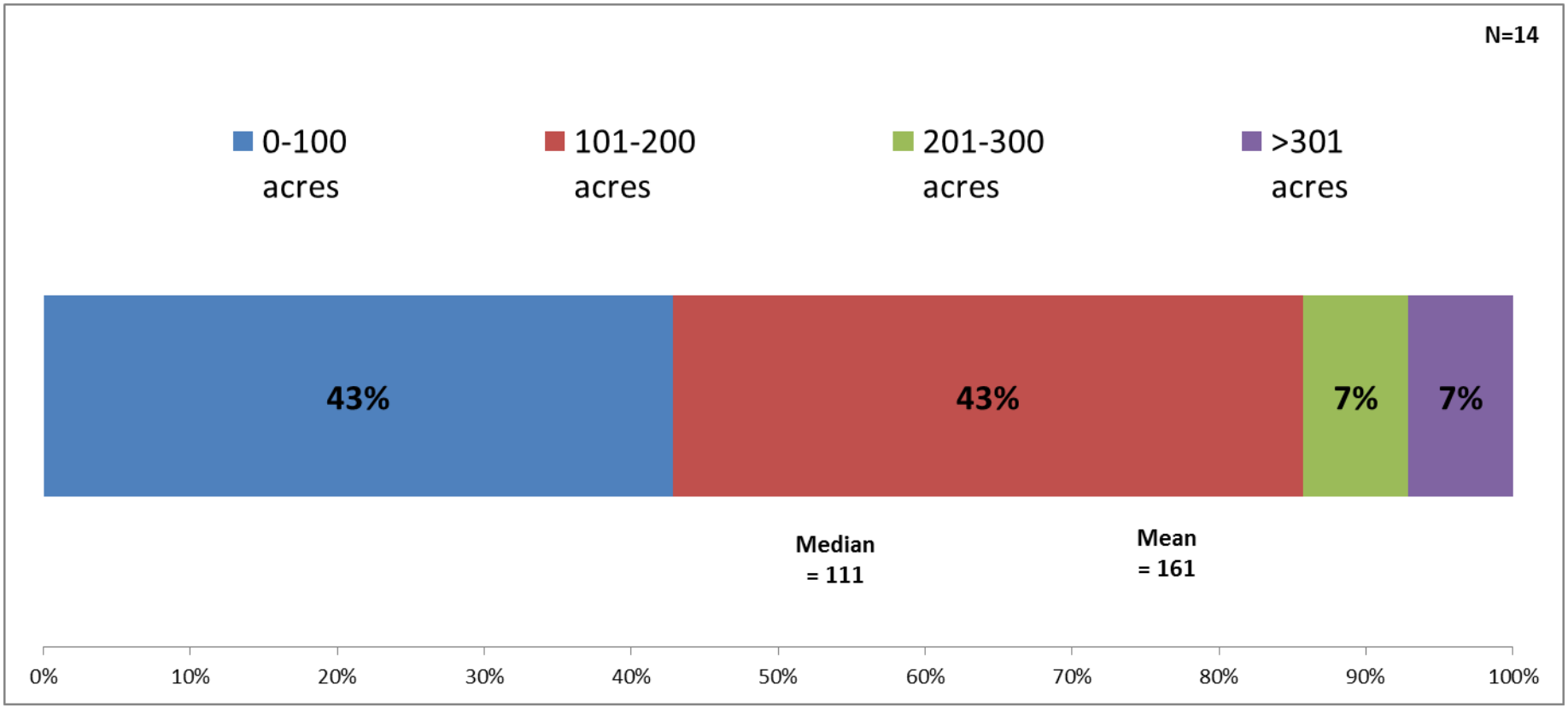
Watershed Farmers in the research owned and/or operated farms of largely-varying sizes.



Q43. What is the total tillable acreage (owned or rented) of your farming operation this year?

Farmers – Acreage Rented

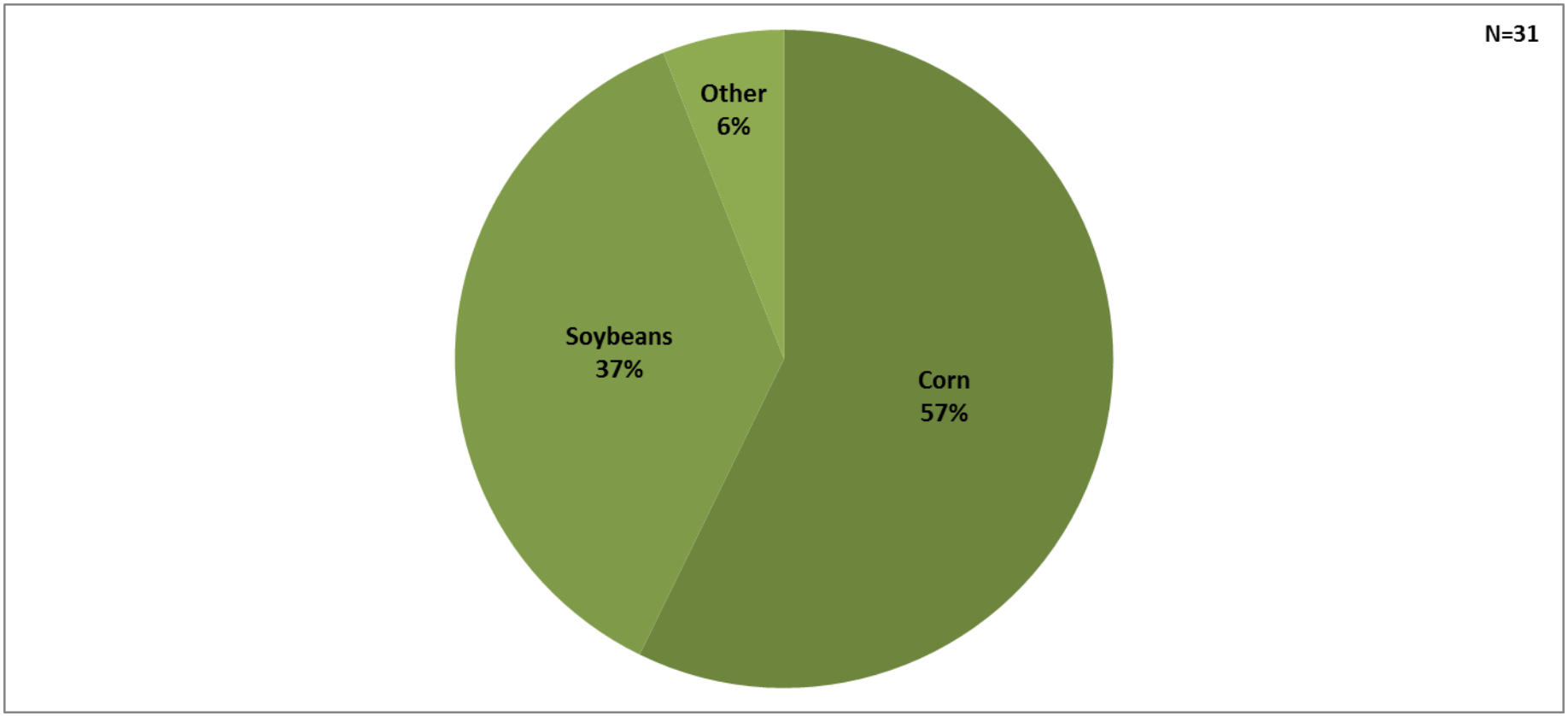
Farmers rented out much less acreage than they managed themselves.



Q44. What is the total acreage you rented out this year from this property?

Farmers – Crops

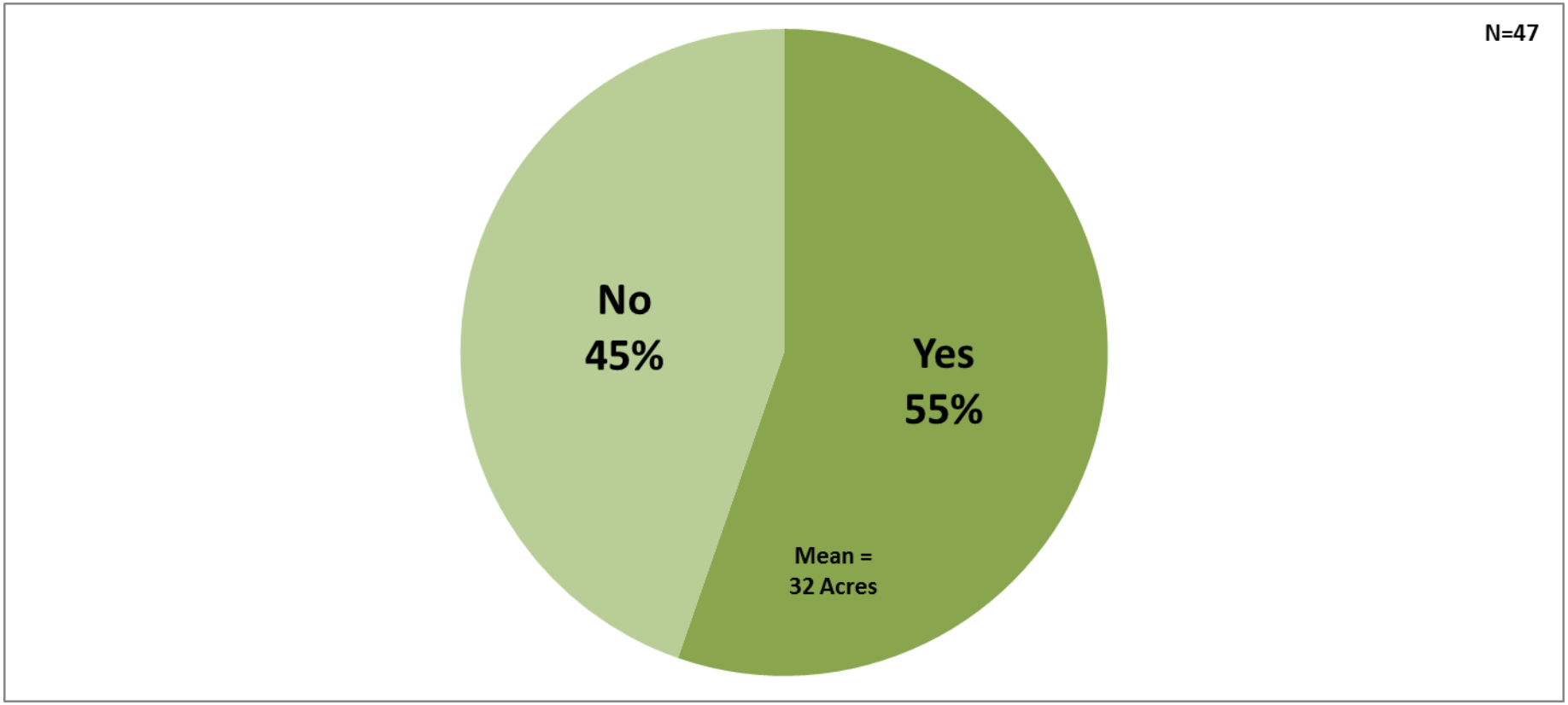
Farmers managed several different crops, but chiefly it was ***corn*** and ***soybeans***.



Q45. In 2013, how many acres of each crop did you manage?

Farmers – Reserve Program Enrollment (Current)

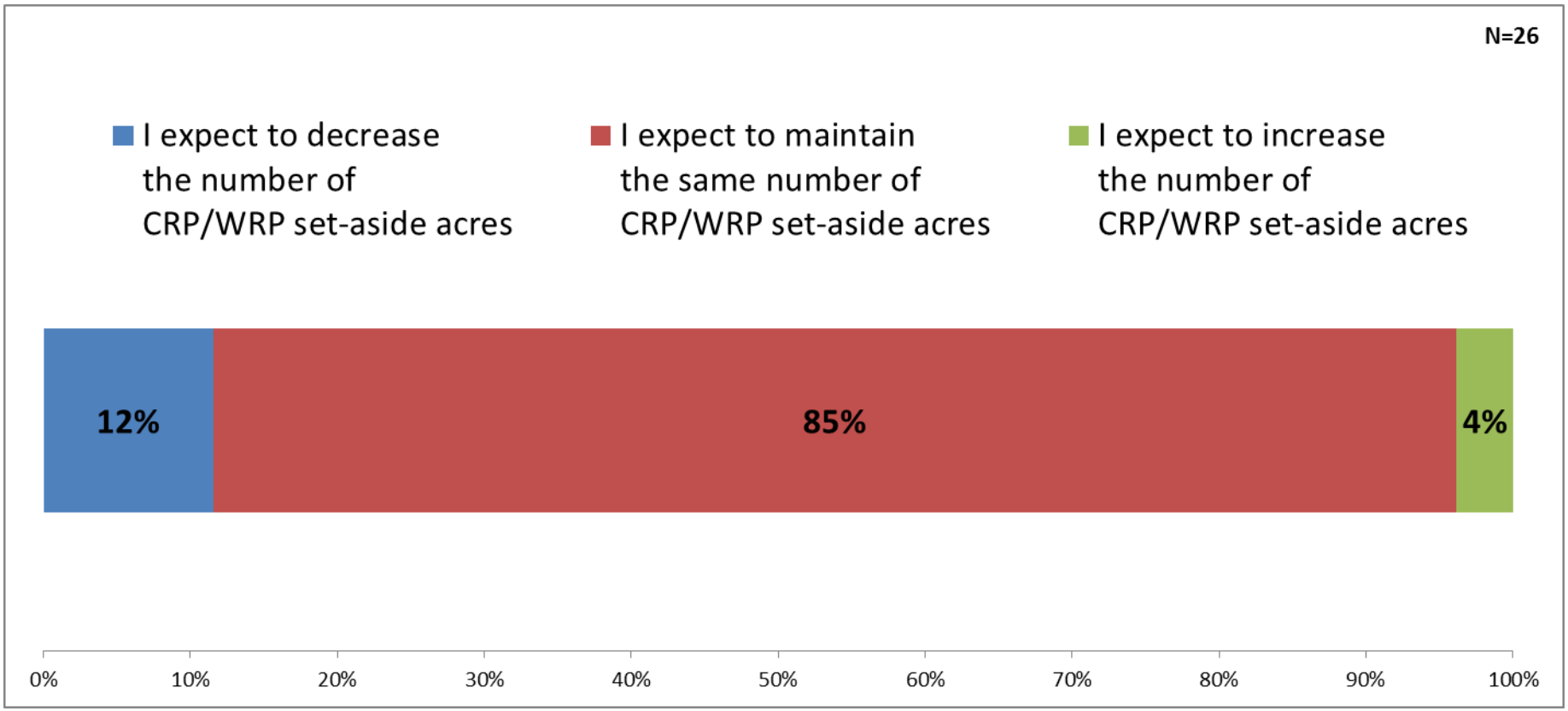
A majority of Farmers were enrolled in ***CRP*** and/or ***WRP***.



Q46. Last year, were you enrolled in the
Conservation Reserve Program (CRP) and/or the Wetland Reserve Program (WRP)?

Farmers – Reserve Program Enrollment (Future)

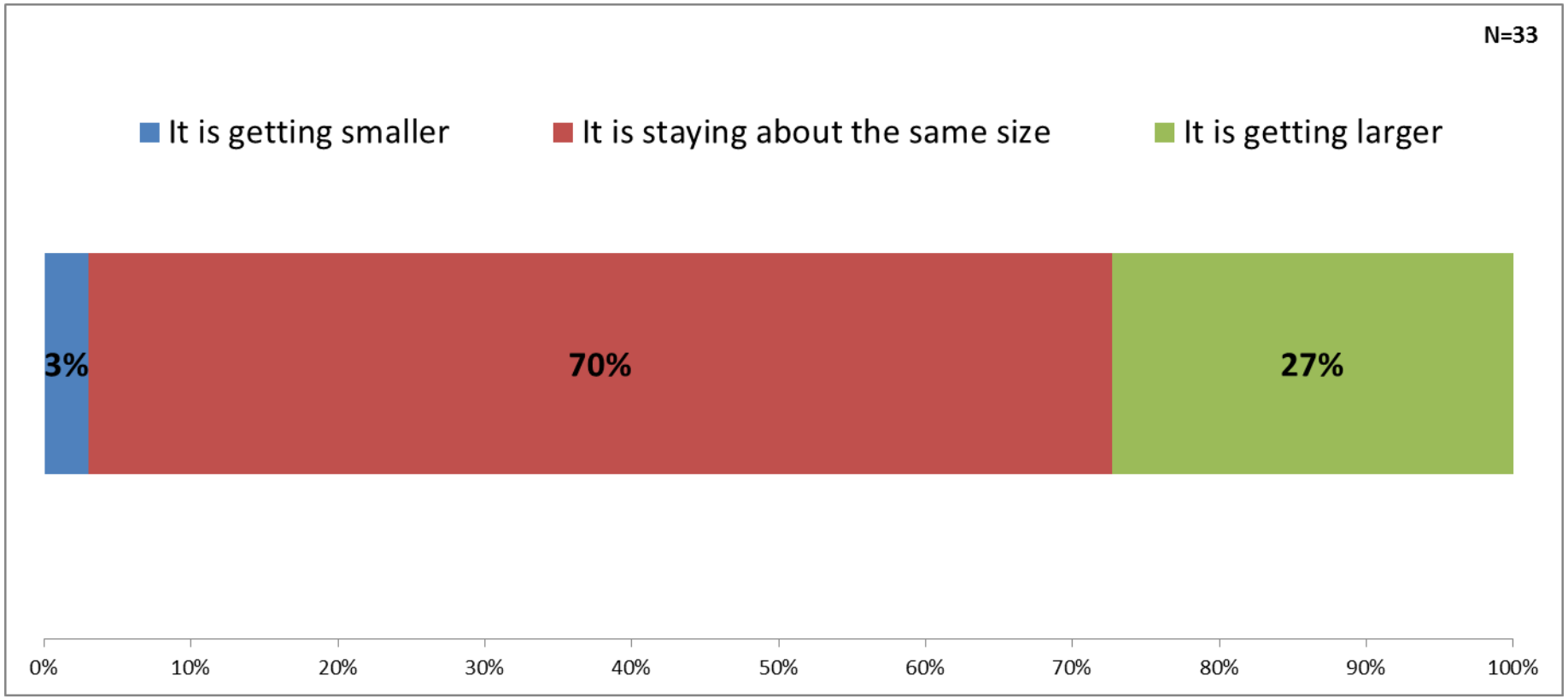
A large majority of Farmers expected to
maintain the same number of CRP/WRP set-aside acres for the next five years.



Q48. What do you expect with regard to your participation in the Conservation Reserve Program (CRP) and/or the Wetland Reserve Program (WRP) for the next five years?

Farmers – Personal Farming Futures

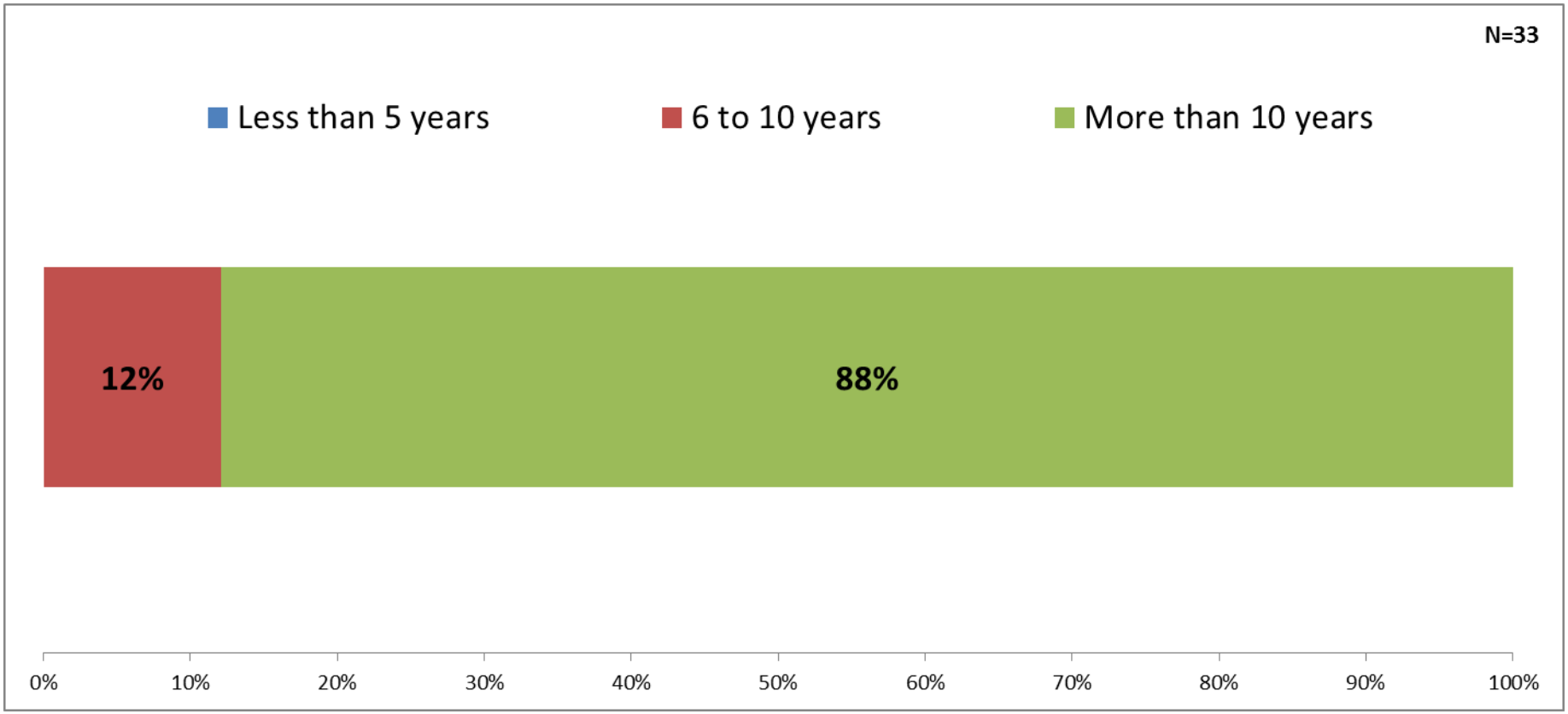
A majority of Farmers thought their operations will ***stay about the same size*** for the next five years. Roughly a quarter of Farmers said their operations will be ***getting larger***.



Q51. Will your operation be changing in size over the next 5 years?

Farmers – Years Spent Farming

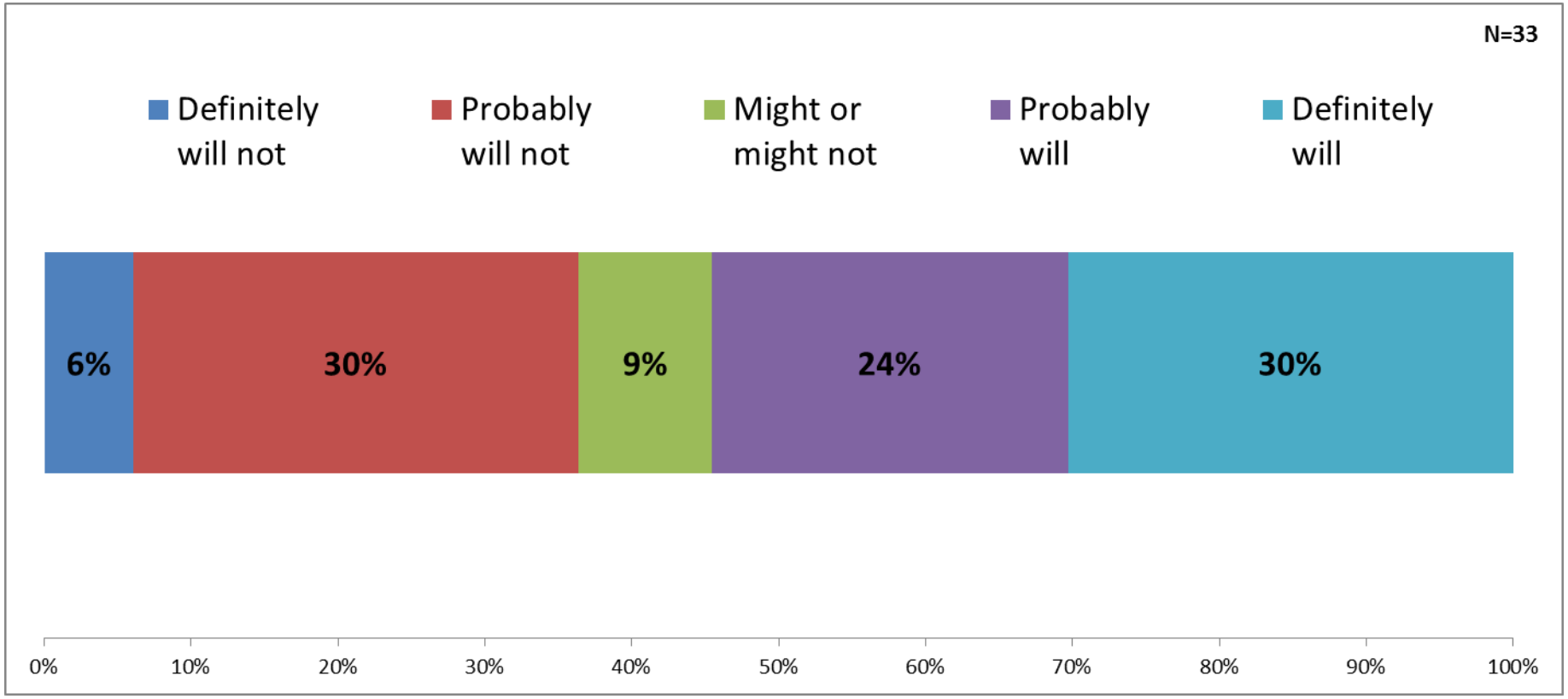
A large majority of the Farmers had been farming for more than 10 years.



Q49. How many years have you been farming?

Farmers – Family Farming Futures

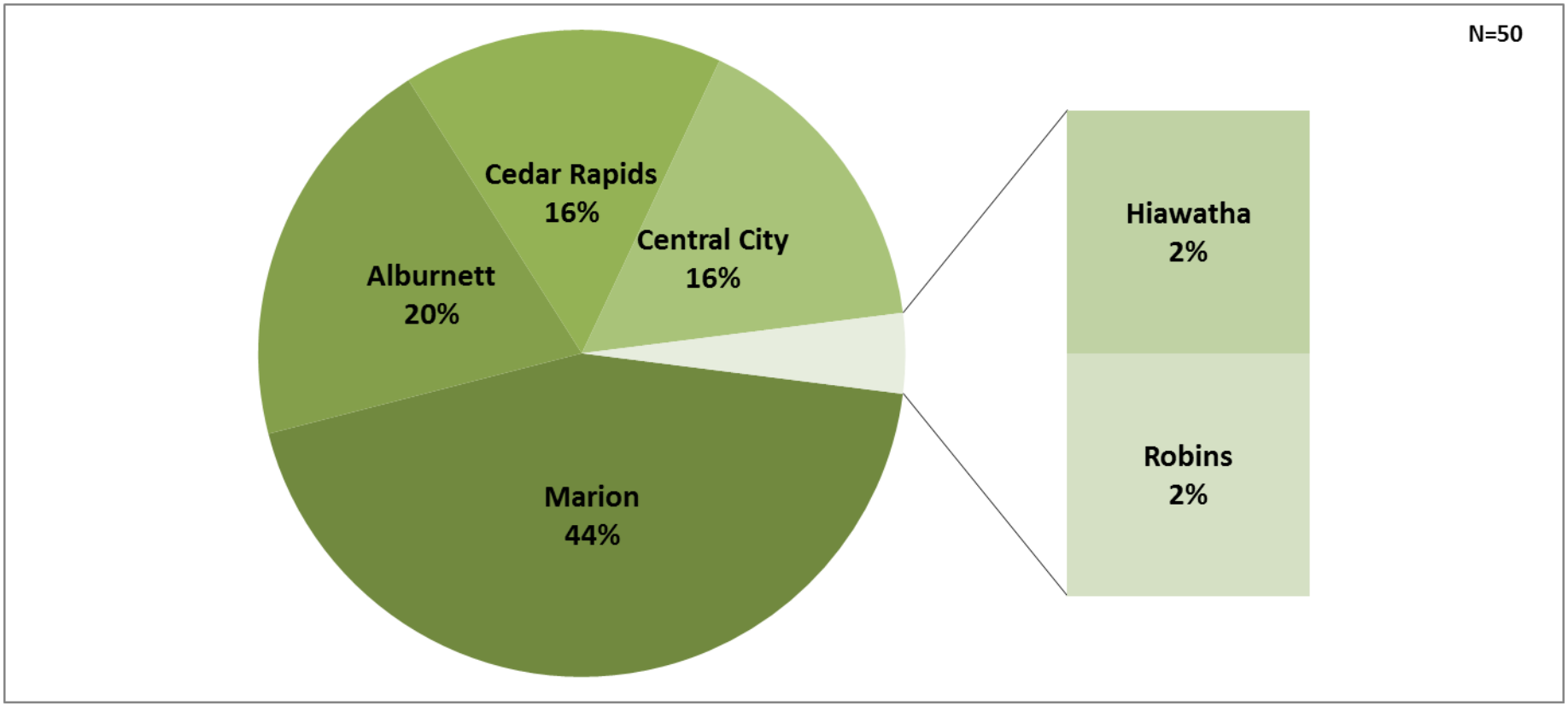
A slight majority (54%) of Farmers believed a family member either ***probably will*** or ***definitely will*** continue farming operations when the respondent retires.



Q50. How likely is it that a family member will continue farm operations after you retire?

Farmers – Community

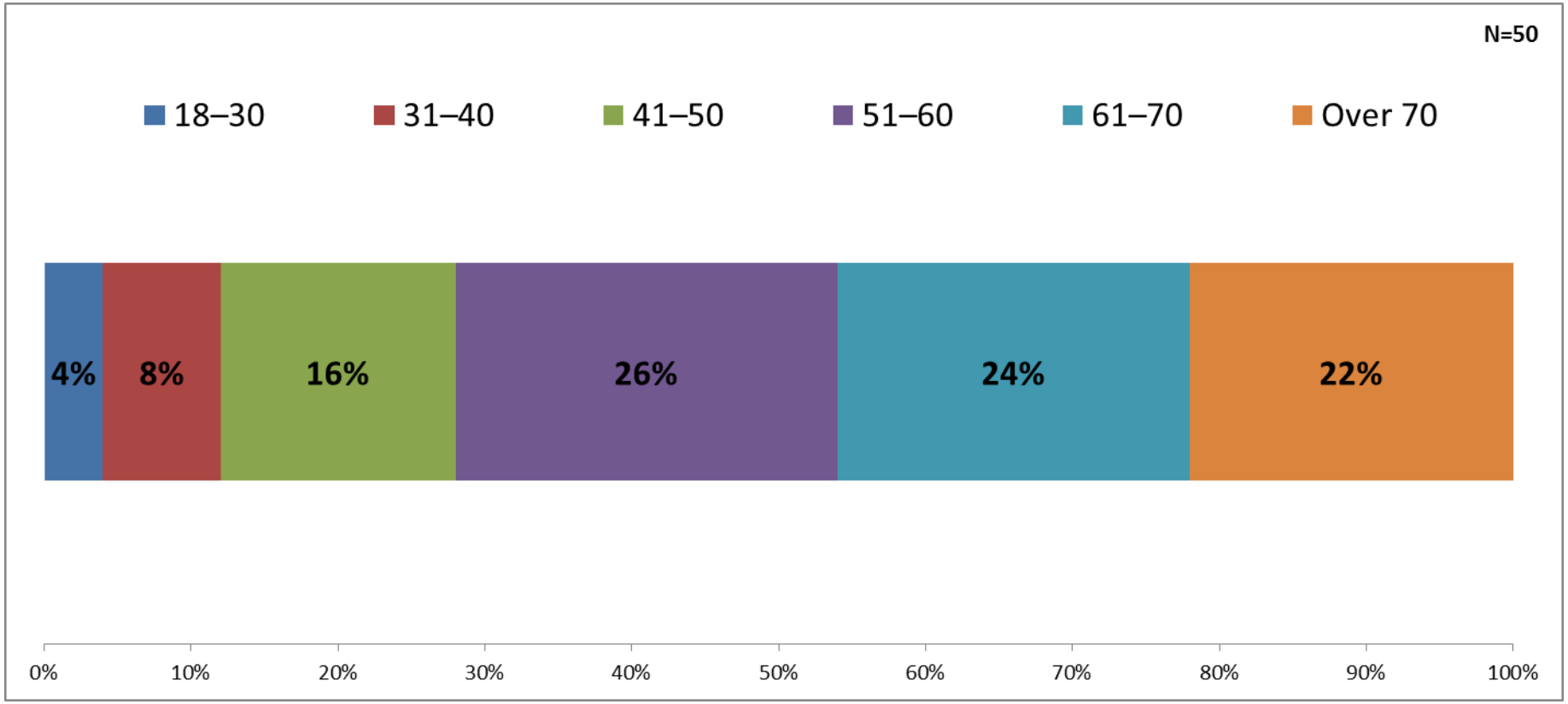
Respondents came from several communities, but chiefly ***Marion***.



Info from address given.

Farmers – Age

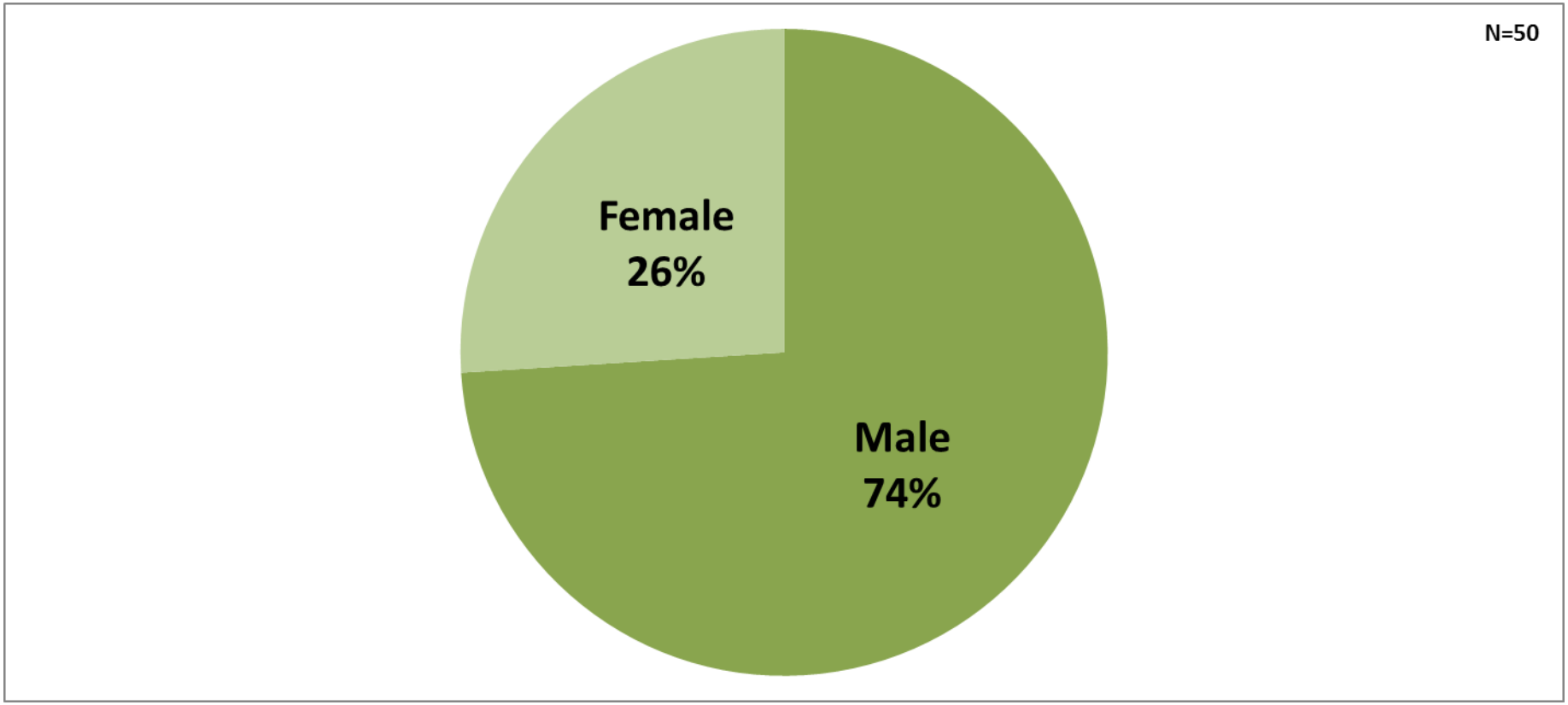
Farmers came from a good selection of age groups.



Q1. Which age range do you fall into?

Farmers – Gender

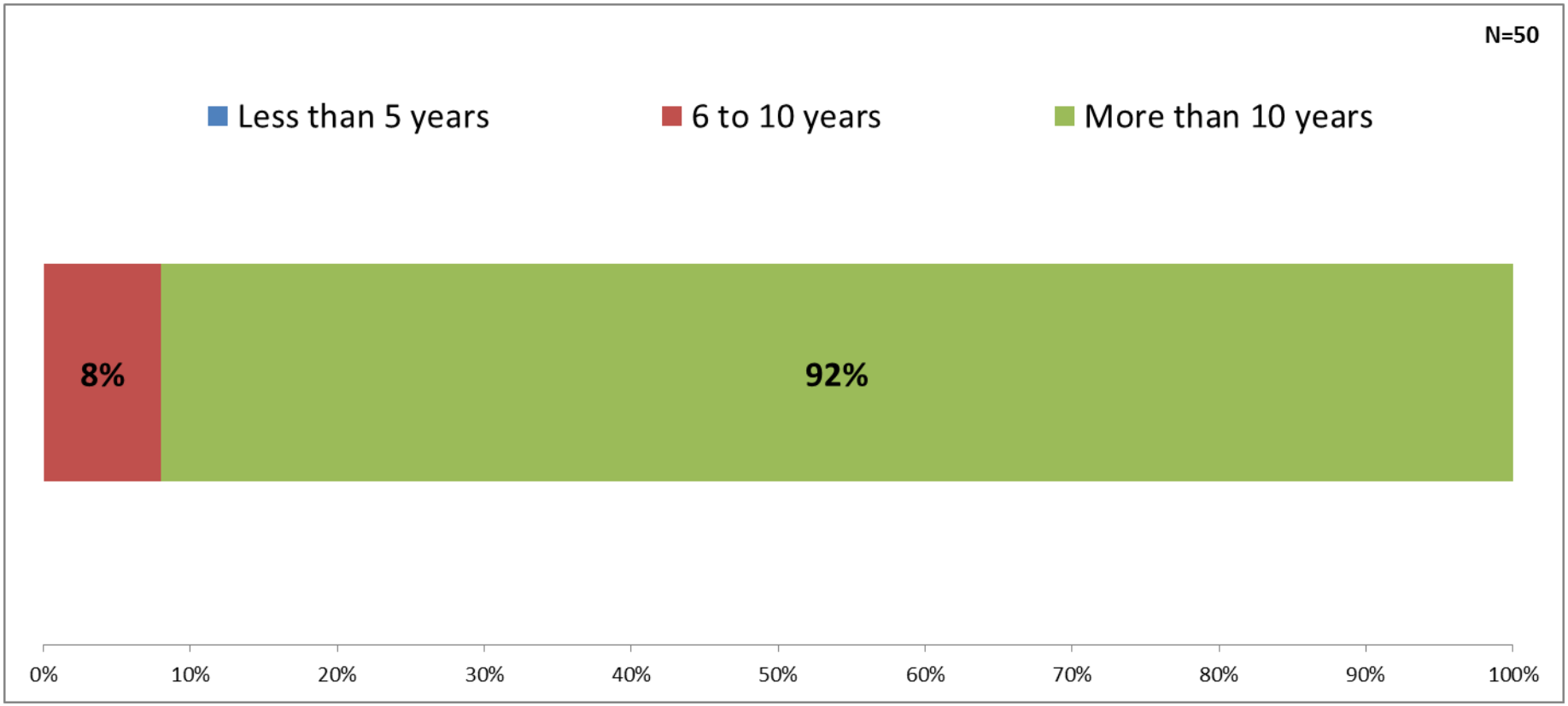
The Farmer sample included significantly more ***males*** than ***females***, which reflects the industry.



Q2. What is your gender?

Farmers – Linn County

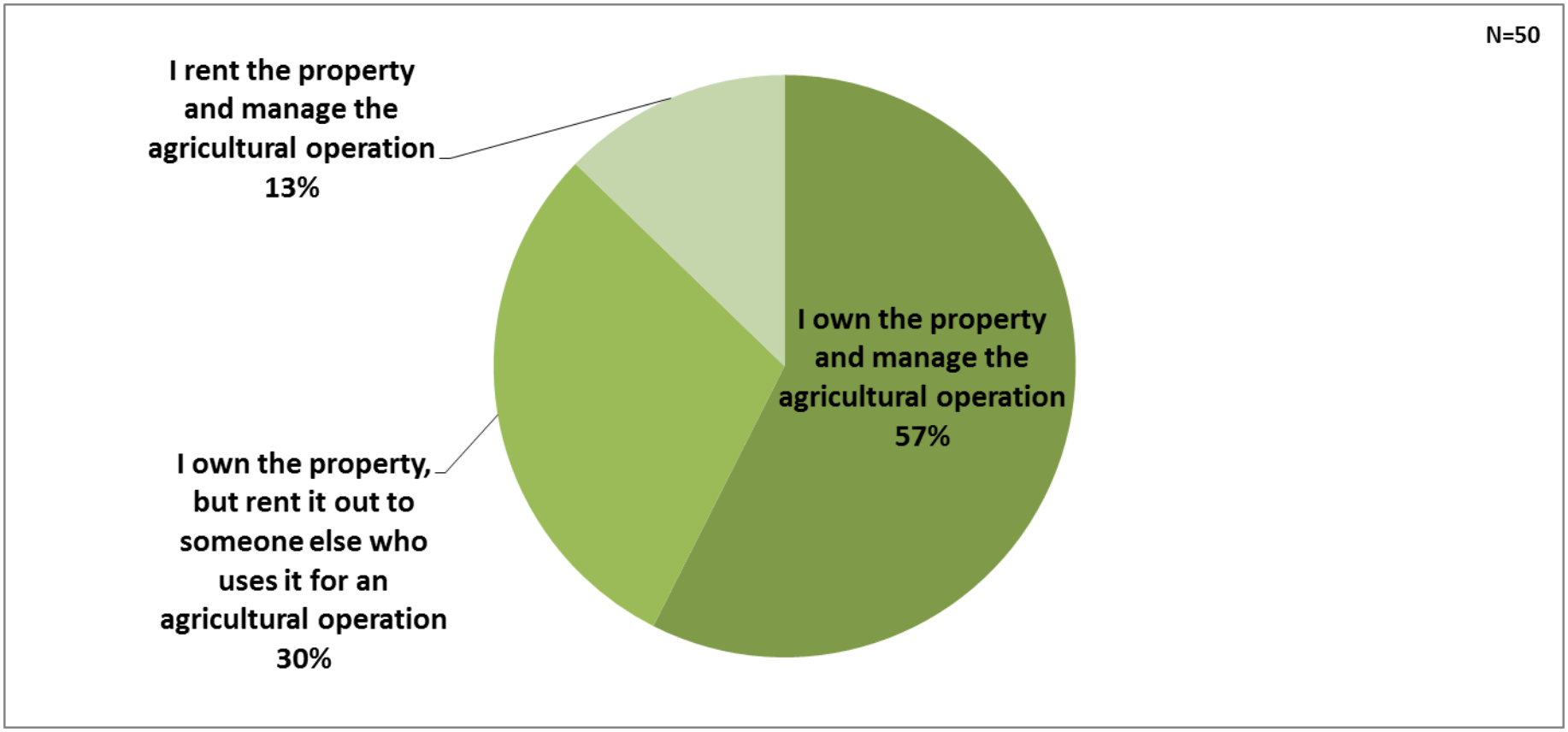
The very large majority of Farmers had lived in Linn County for ***more than 10 years***.



Q4. How long have you lived in Linn County?

Farmers – Owners/Renters

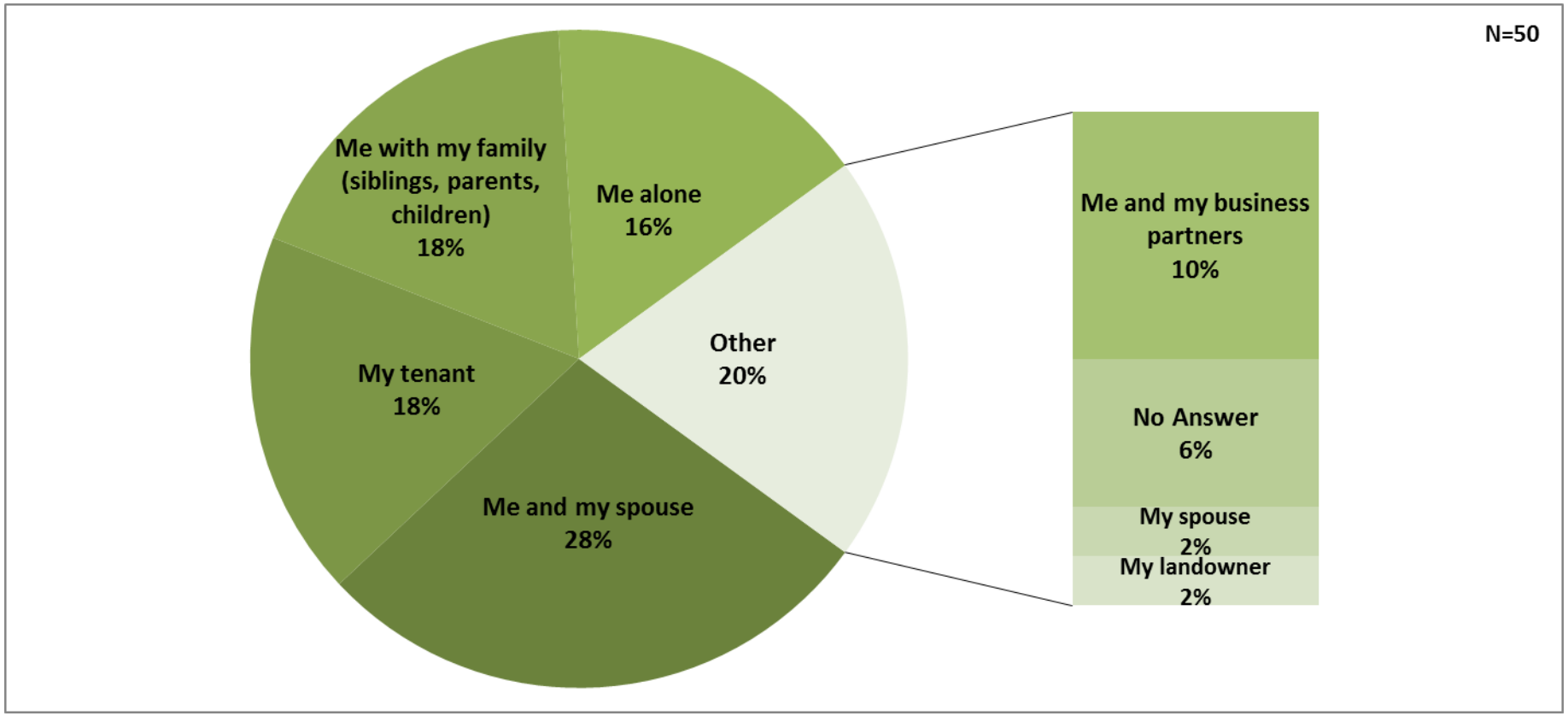
A little more than half of the Farmers in the survey
own the property and manage the agricultural operation.



Q32. Which of the following describes your situation best in relation to the property?

Farmers – Decision Makers

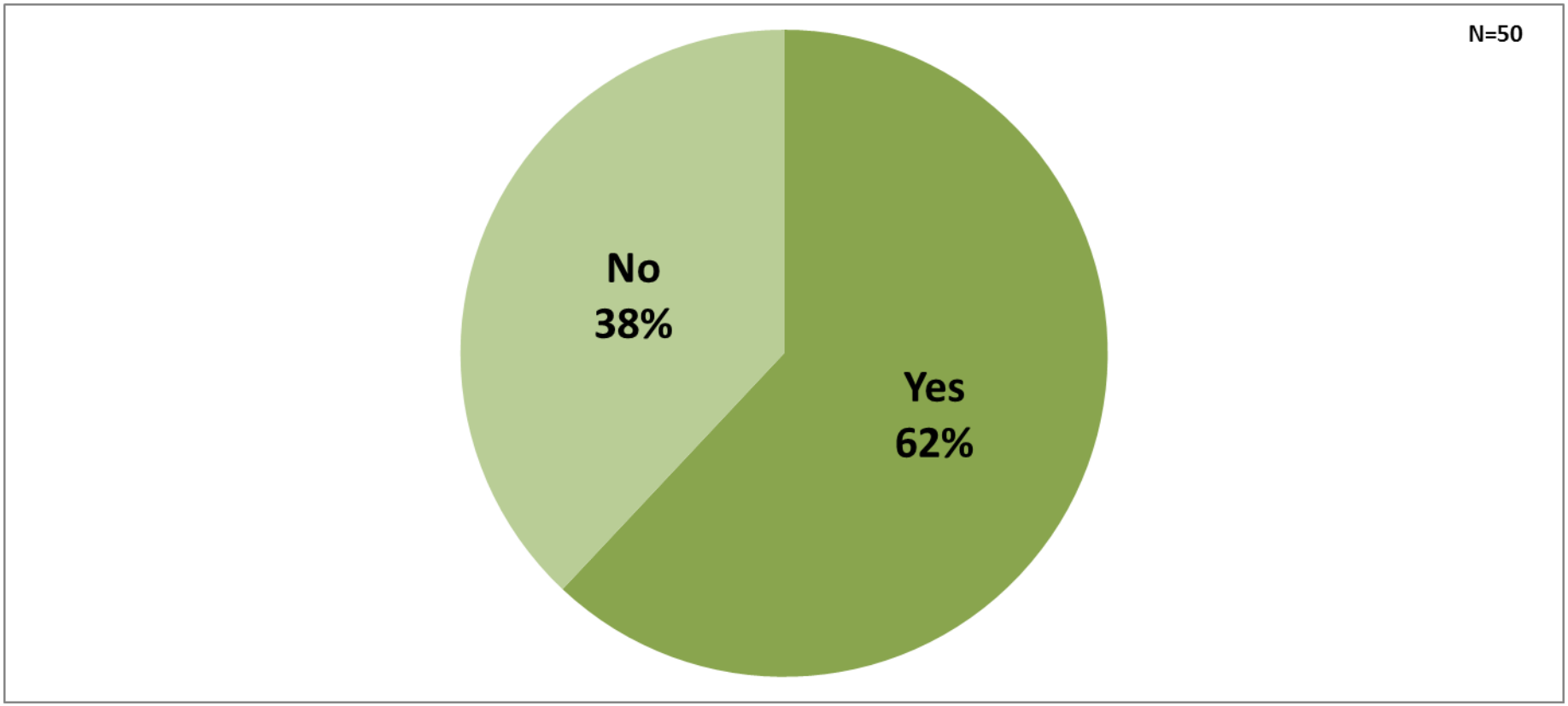
The farmland in the watershed is controlled by a variety of decision-making persons or groups but the majority included the respondent (Farmer).



Q33. Who generally makes management decisions for your agricultural operation?

Farmers – Live Near Water

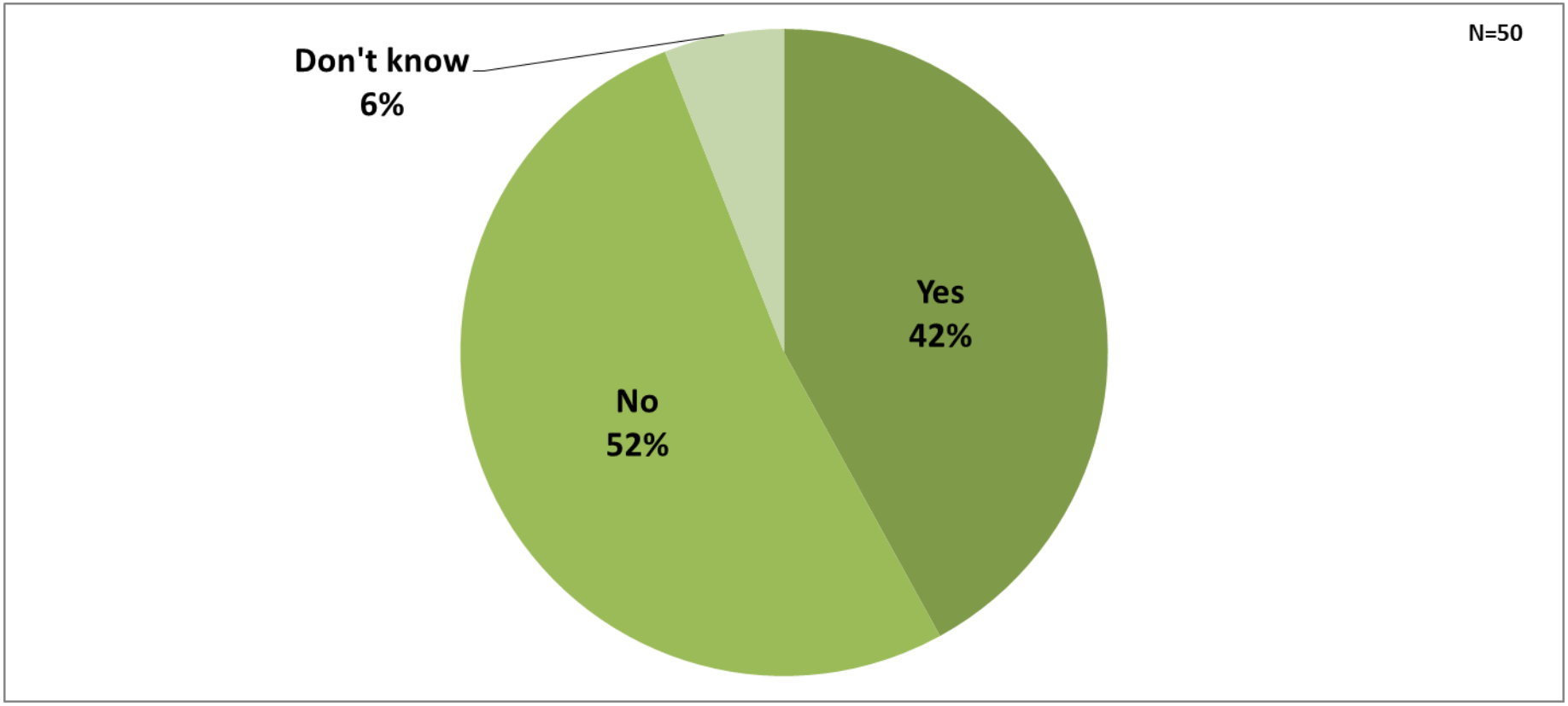
The majority of respondents answered that they do live on ***property that touches a creek, stream, river or wetland***.



Q10. Does the property you own/rent touch a creek, stream, river or wetland?

Farmers – Affected by Flooding

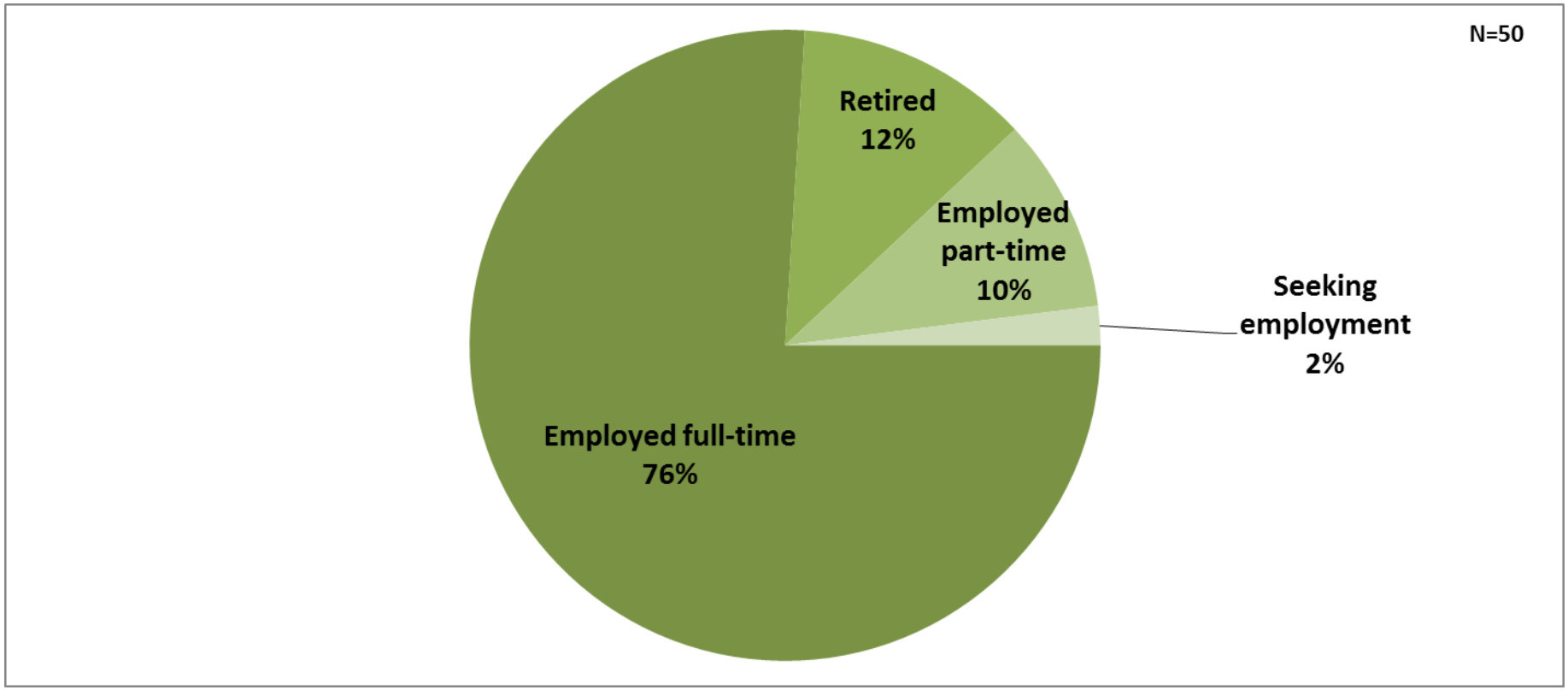
Still, a slim majority of respondents answered that their property has not ***been affected by flooding from Indian, Squaw and/or Dry Creeks***.



Q11. Has your property been affected by flooding from Indian, Squaw and/or Dry Creeks?

Farmers – Demographics (Employment Status)

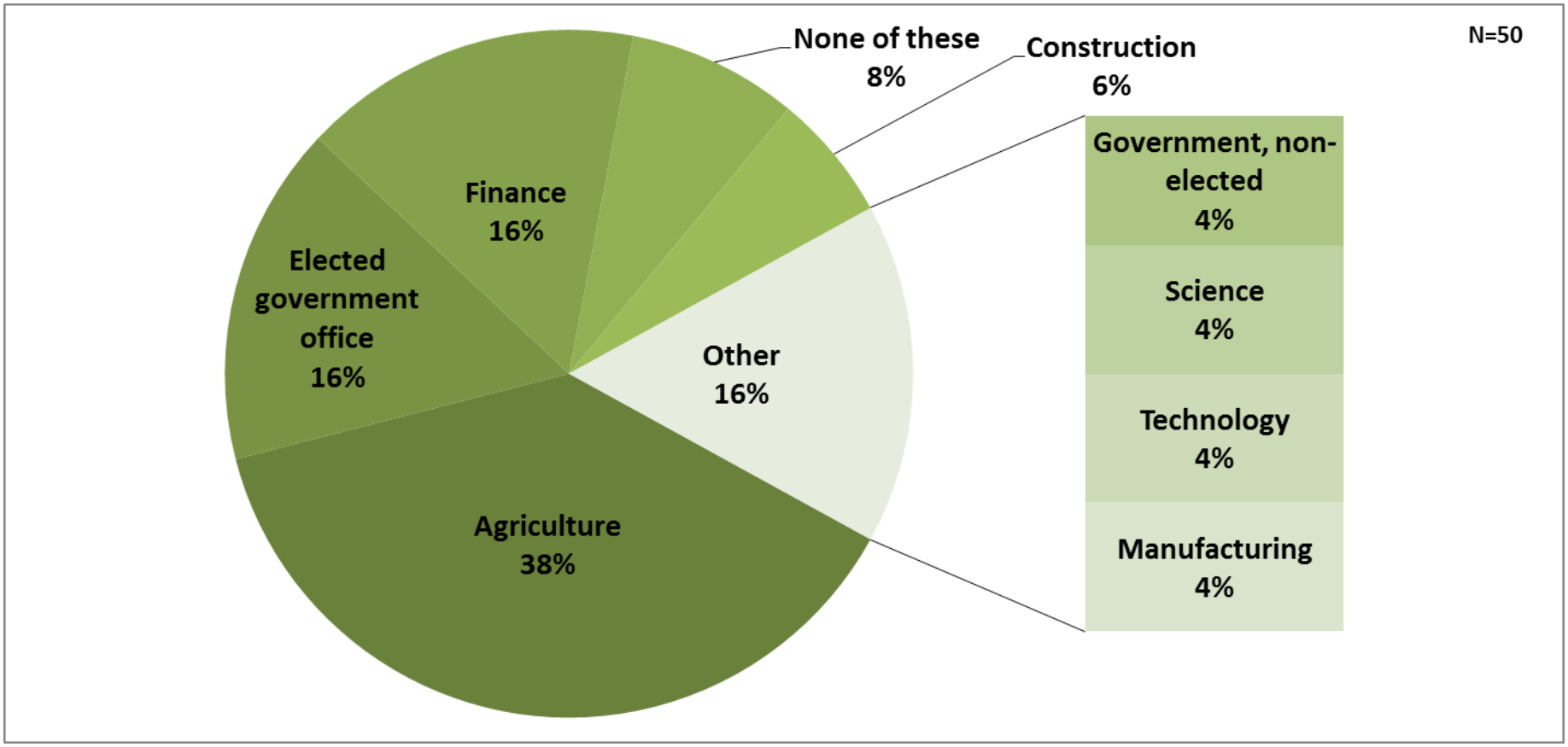
The majority of the Farmer sample was ***employed full-time***.



Q52. Which of the following best describes your current employment situation?

Farmers – Demographics (Employment Type)

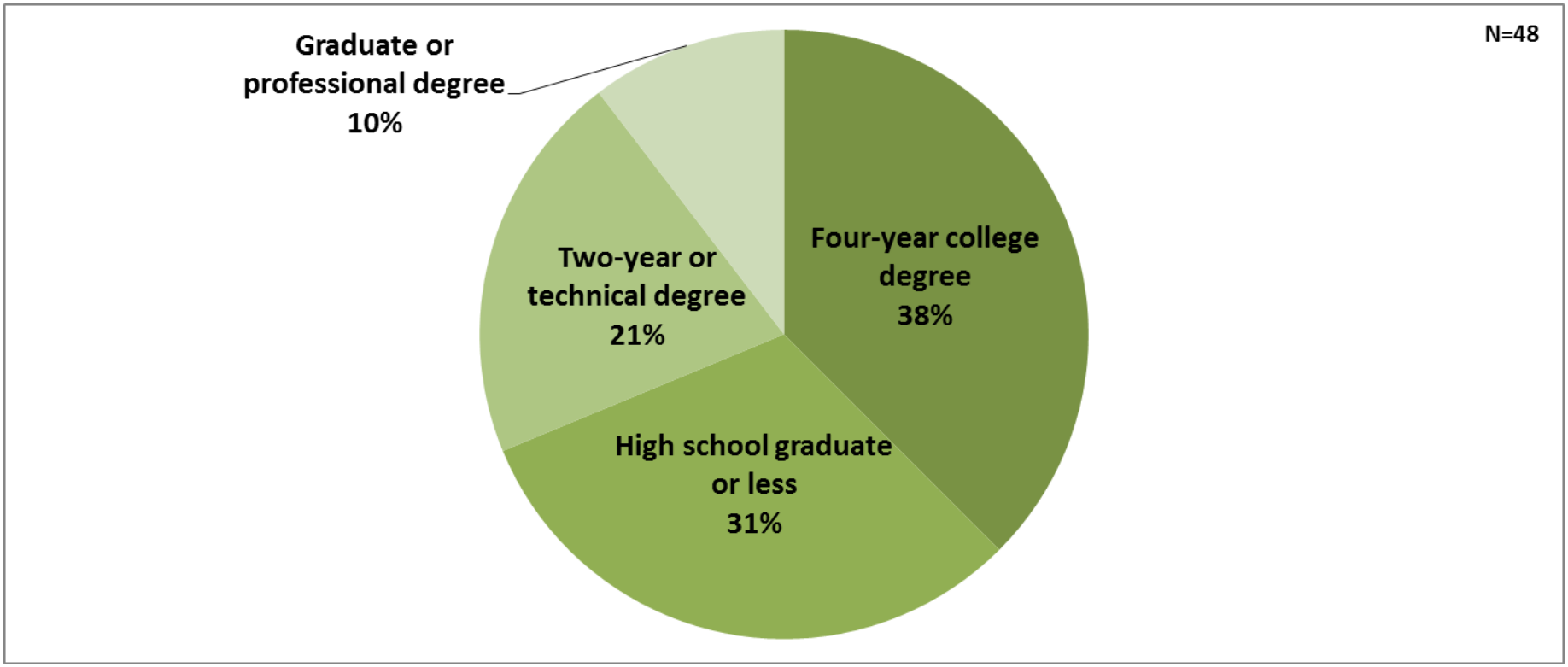
The sample of Farmers represented a good mix of industries, though ***38% come from agriculture***.



Q53. Which industry best describes the business/organization you work for?

Farmers – Demographics (Education)

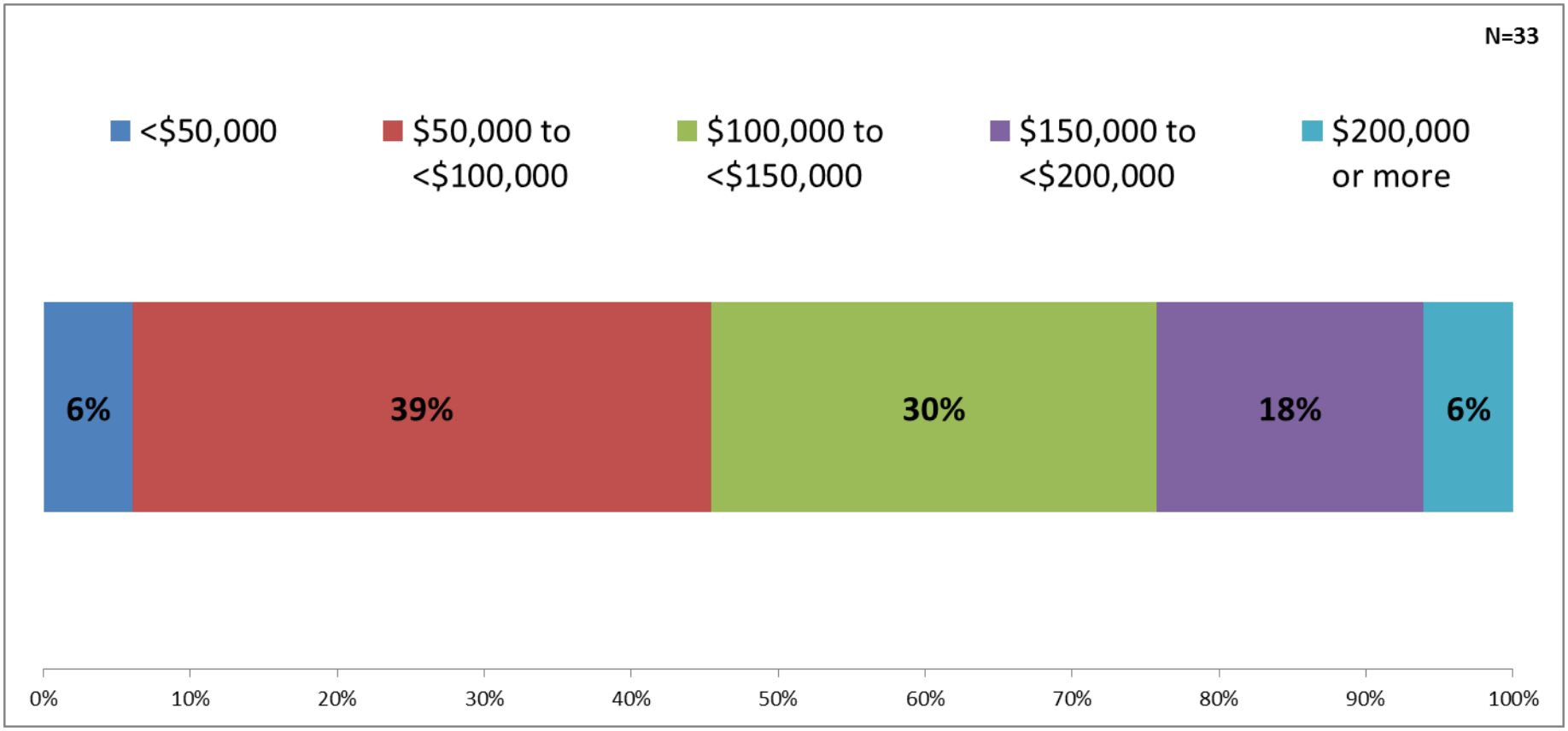
The sample of Farmers was better-educated than the known general population at the county level.



Q54. What was the last level of education that you completed?

Farmers – Demographics (Income)

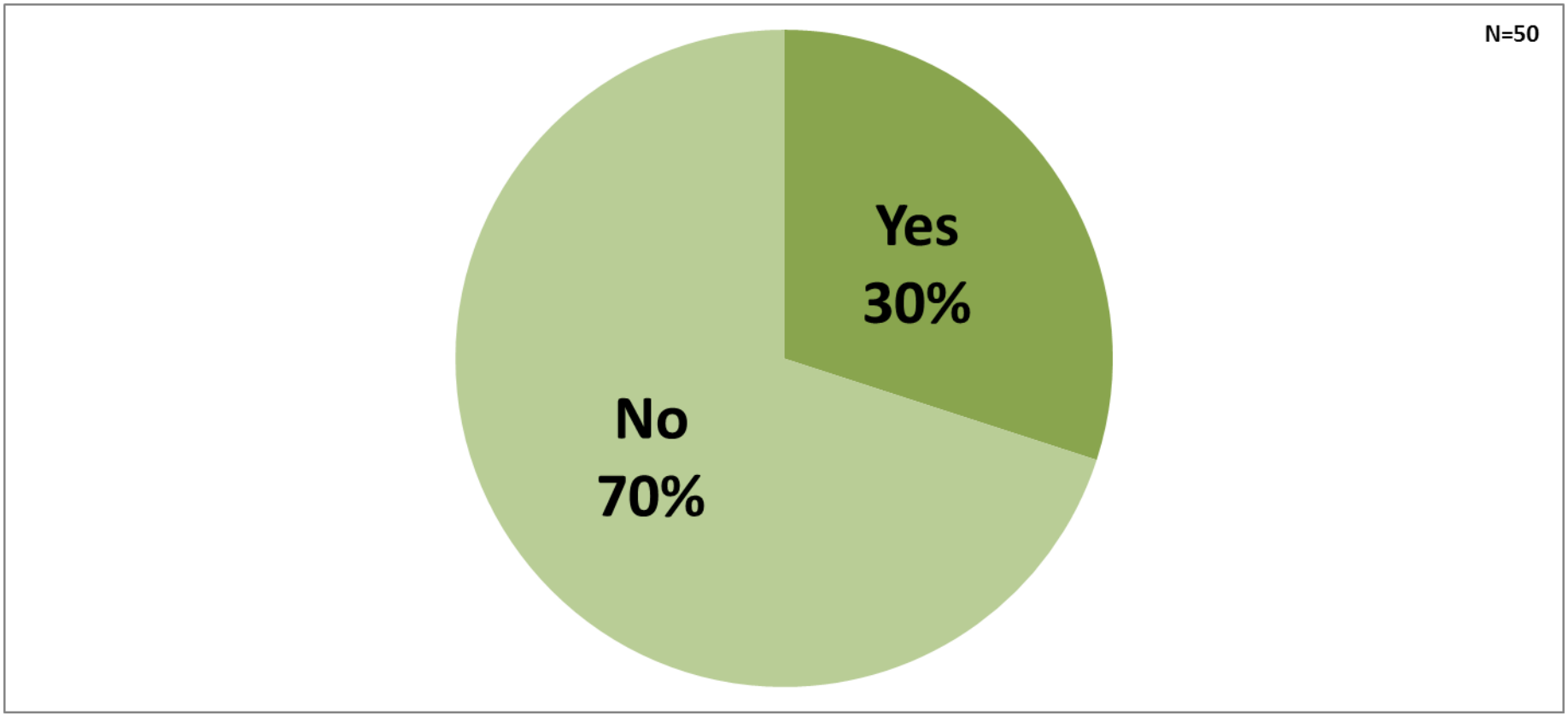
The sample of Farmers had a higher median household income than the known general population at the county level.



Q55. Which of the following categories best describes your annual household income before taxes?

Farmers – Demographics (Minors)

The sample of Farmers had a higher percentage of households including a person under the age of 19 than the known general population at the county level.



Q56. Do you have children under age 19 living in your home?

Business Owners

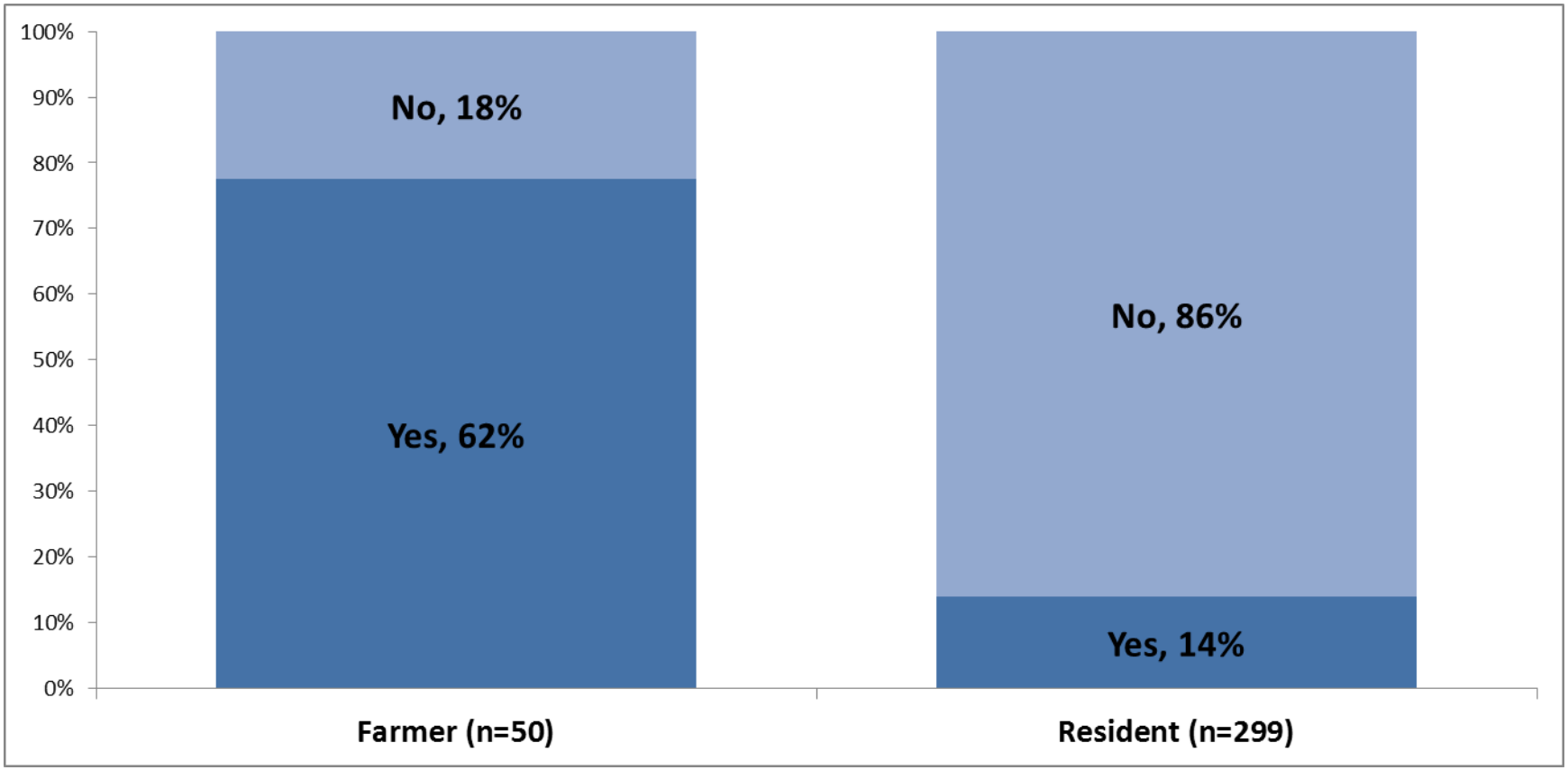
Indian Creek Watershed - Businesses

- Only 12 respondents qualified as “Business Owners” for the purposes of this study.
- Individually, the data from these 12 respondents did not appear to coalesce in any meaningful or substantial way.
- As a group, the data from these 12 respondents did not provide sufficient statistical power for comparison against other groups (Residents and/or Farmers).
- Due to the fact that the subset of “Business Owner” questions was practically identical to the subset of “Resident” questions, the data from these two groups were combined, creating a new, larger Resident group of 299 respondents.
- This new Resident group will be the one used going forward in the presentation.

Group Differences
Farmers compared to Residents

Groups – Live Near Water

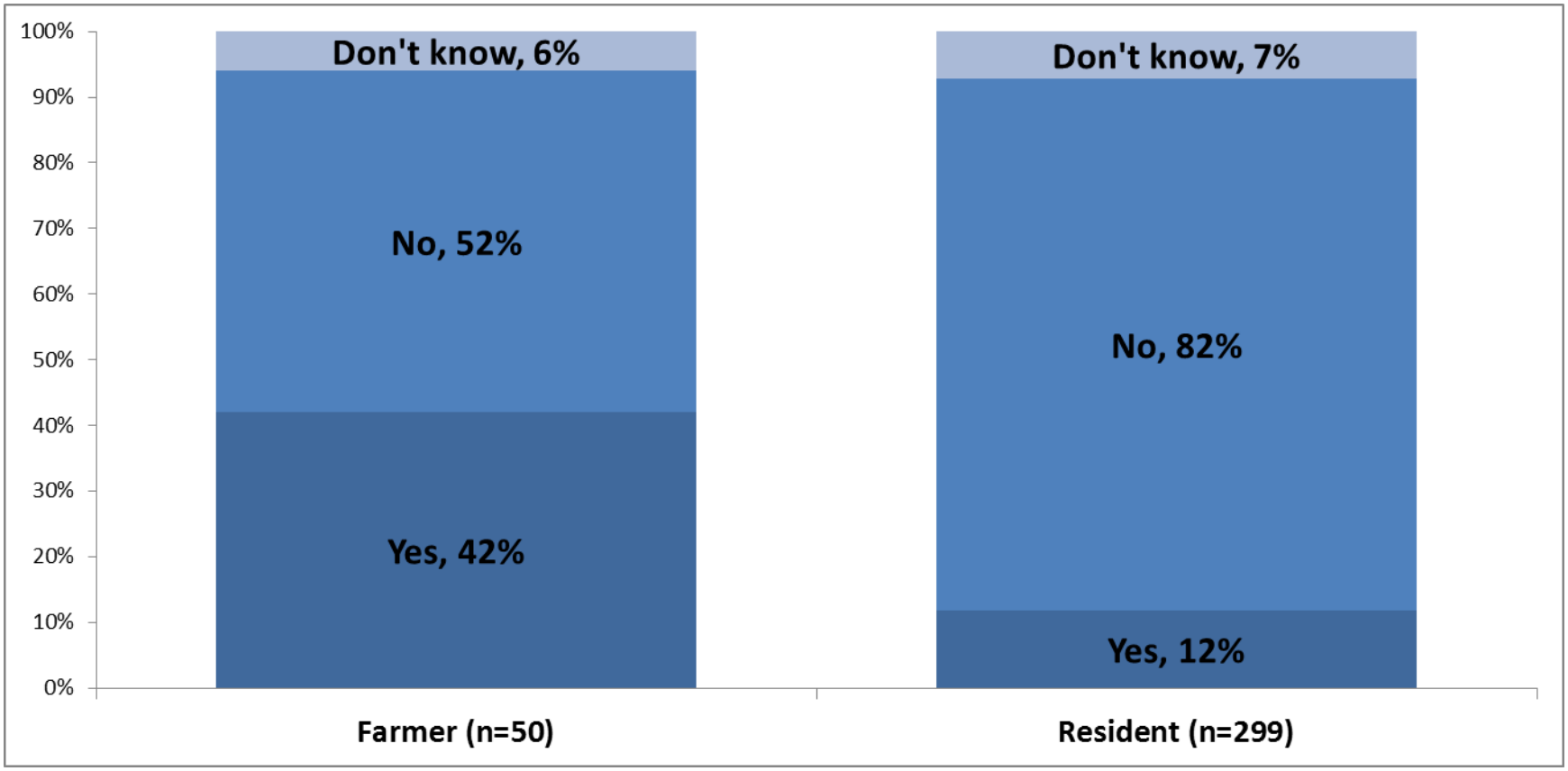
A significantly greater percentage of Farmers than Residents lived on ***property that touches a creek, stream, river or wetland***.



Q10. Does the property you own/rent touch a creek, stream, river or wetland?

Groups – Affected by Flooding

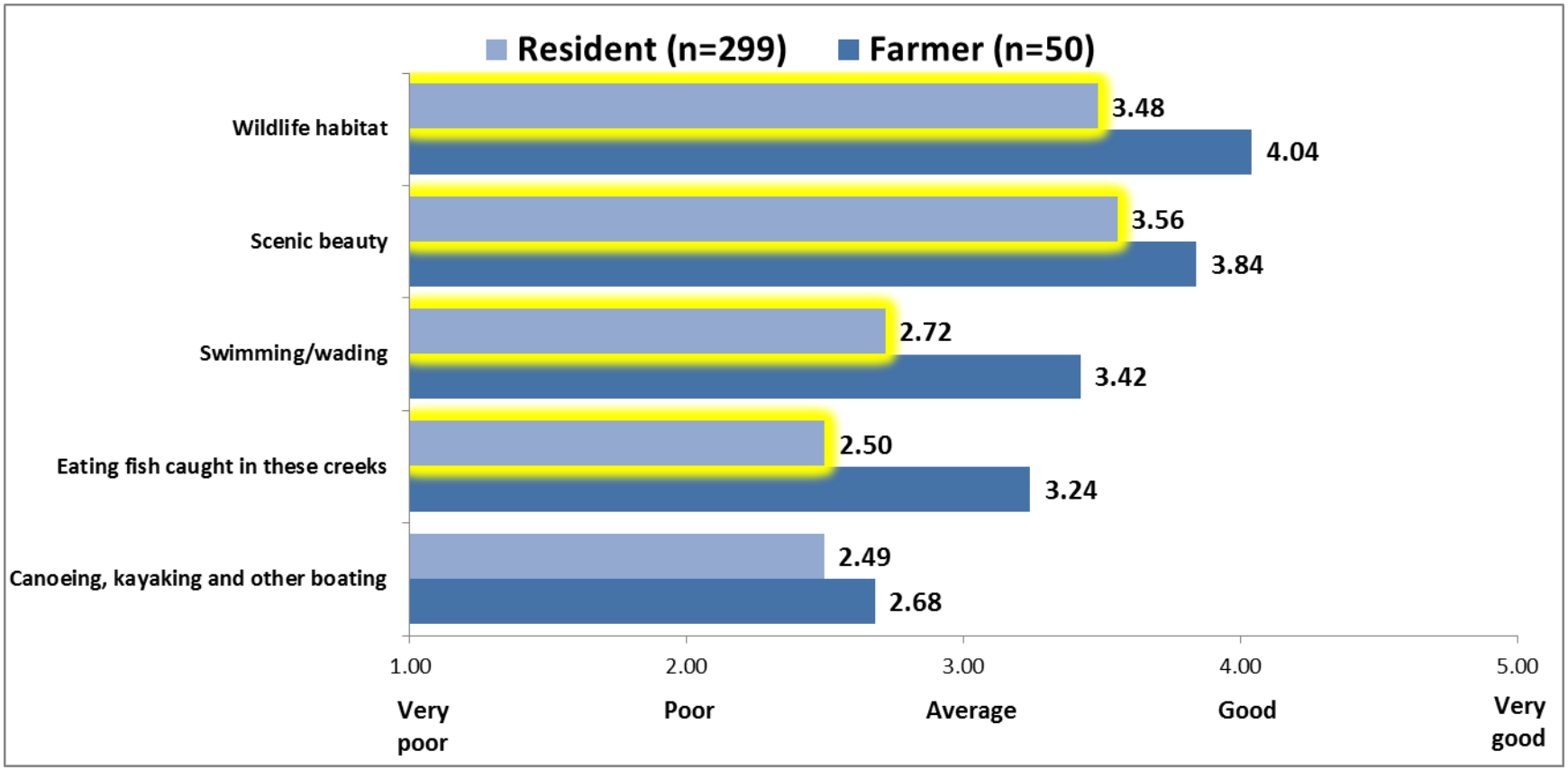
A significantly greater percentage of Residents than Farmers answered that their property ***has not been affected by flooding from Indian, Squaw and/or Dry Creeks***.



Q11. Has your property been affected by flooding from Indian, Squaw and/or Dry Creeks?

Groups – Water Quality

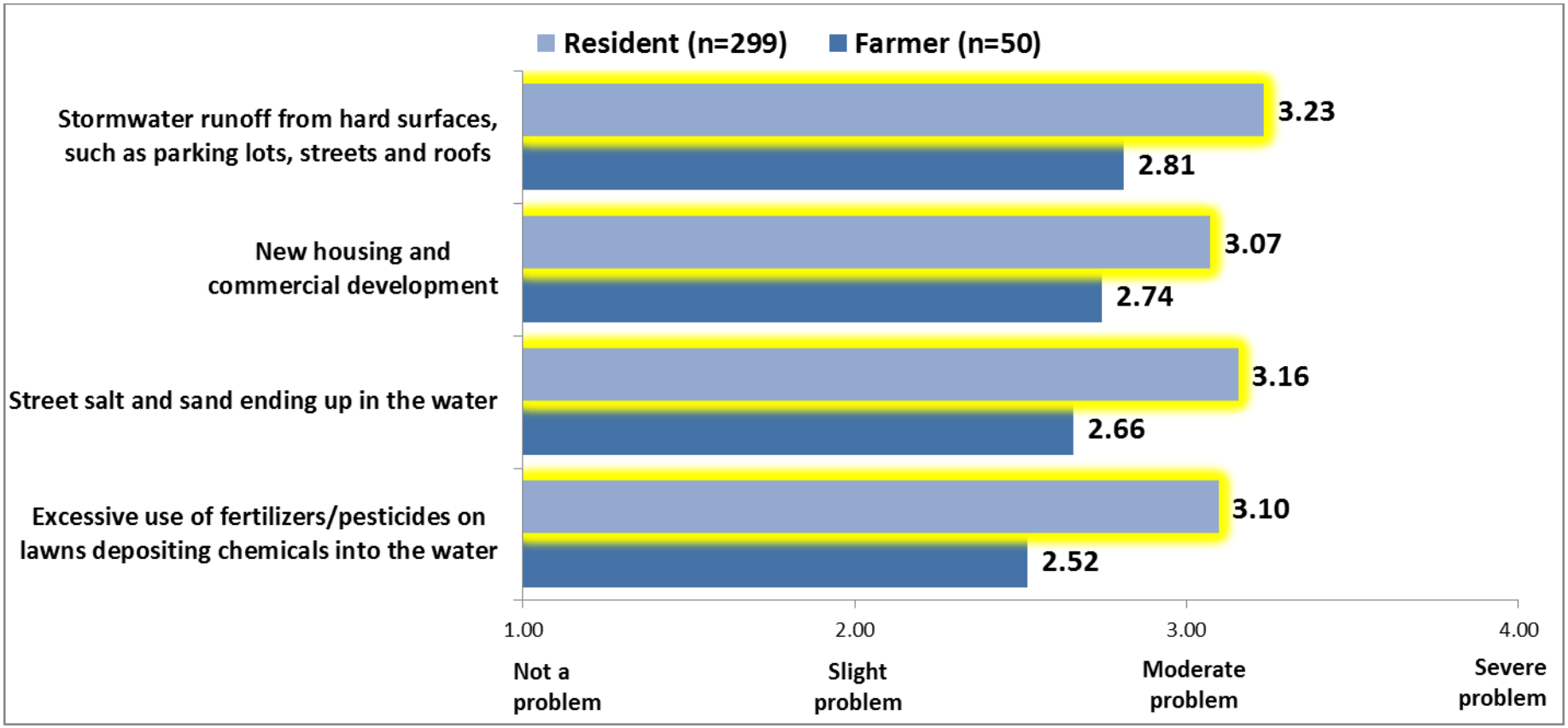
Farmers evaluated water quality significantly **more positively** than Residents for all activities except ***canoeing, kayaking and other boating***.



Q12. To the best of your knowledge, how would you describe the quality of water in **your area's streams** (Indian, Dry and Squaw Creeks) for the following activities?

Groups – Contributing Issues

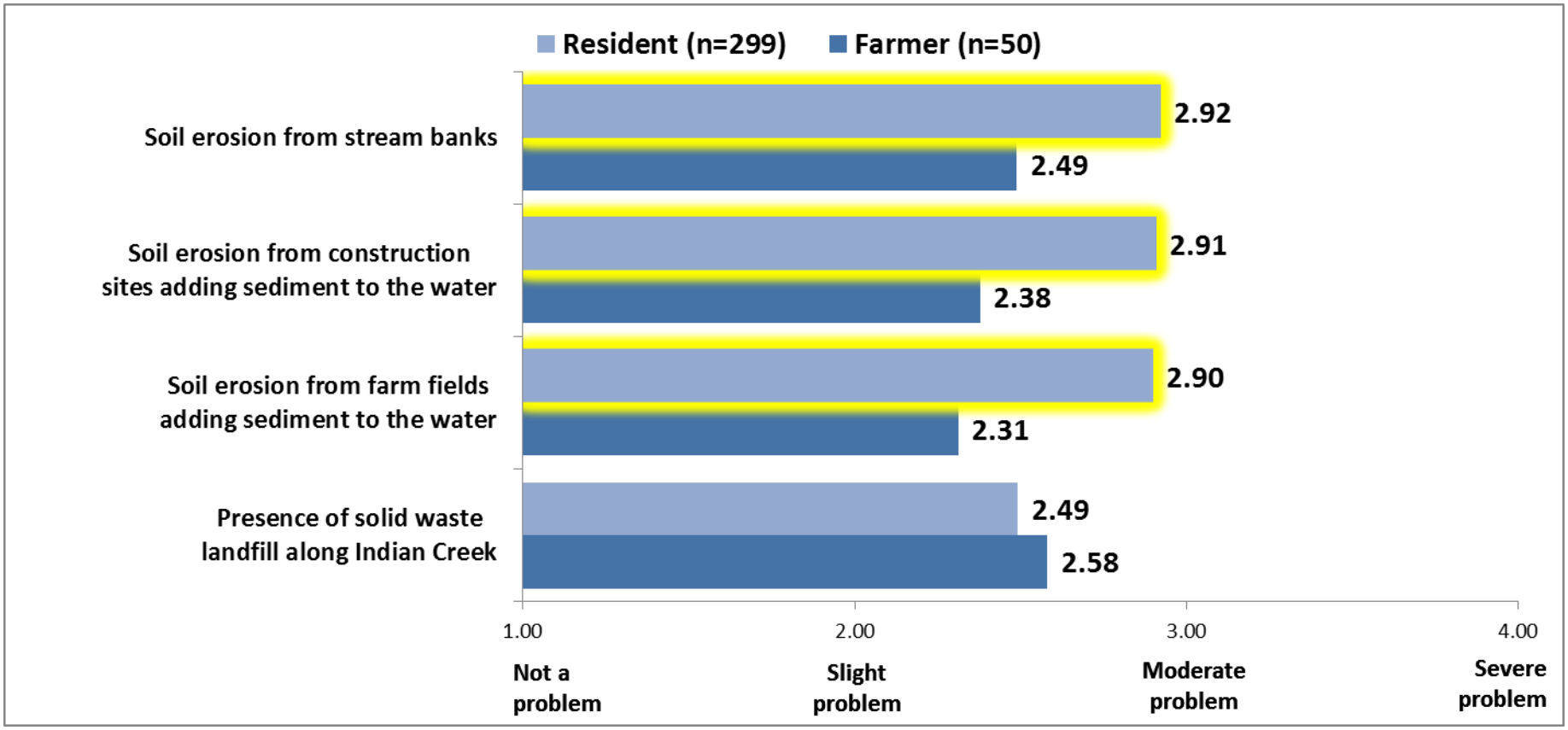
Residents scored most of the issues we tested as more problematic (statistically significant) than Farmers did.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Contributing Issues (cont.)

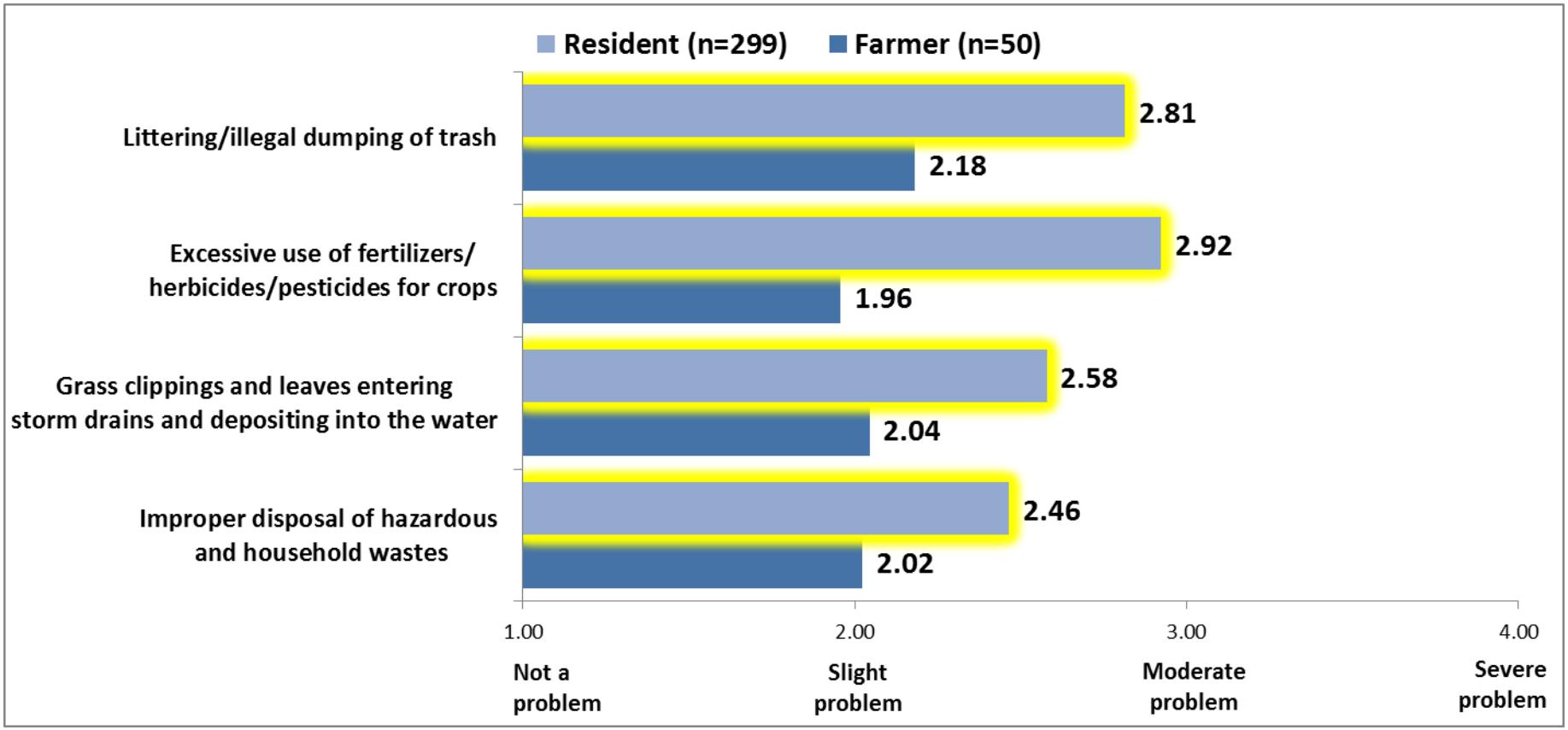
Residents also rated these soil erosion issues as more problematic (statistically significant) than Farmers did. The ***presence of solid waste landfill along Indian Creek*** is the exception.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Contributing Issues (cont.)

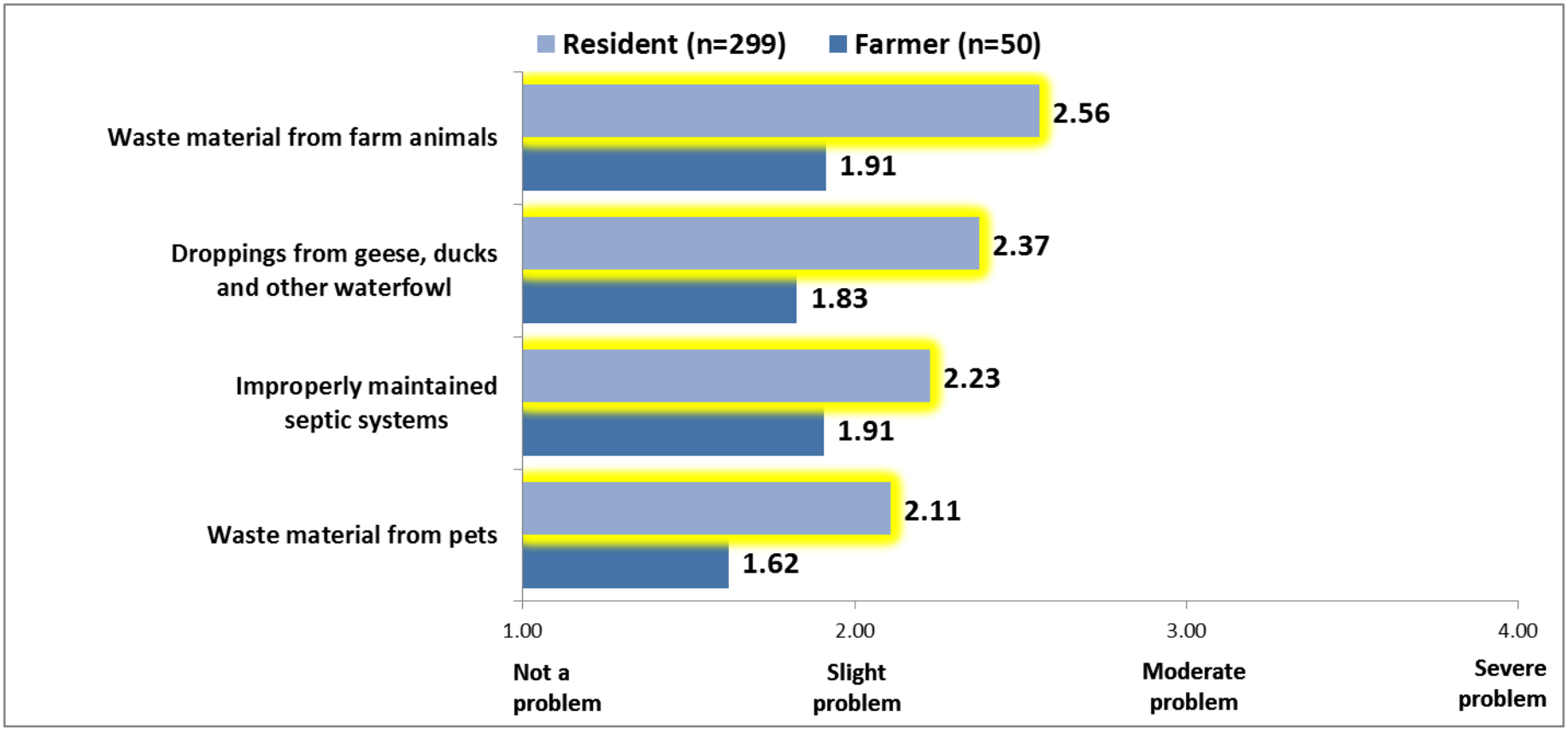
Residents scored all of these contributing issues as significantly more problematic than Farmers did.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Contributing Issues (cont.)

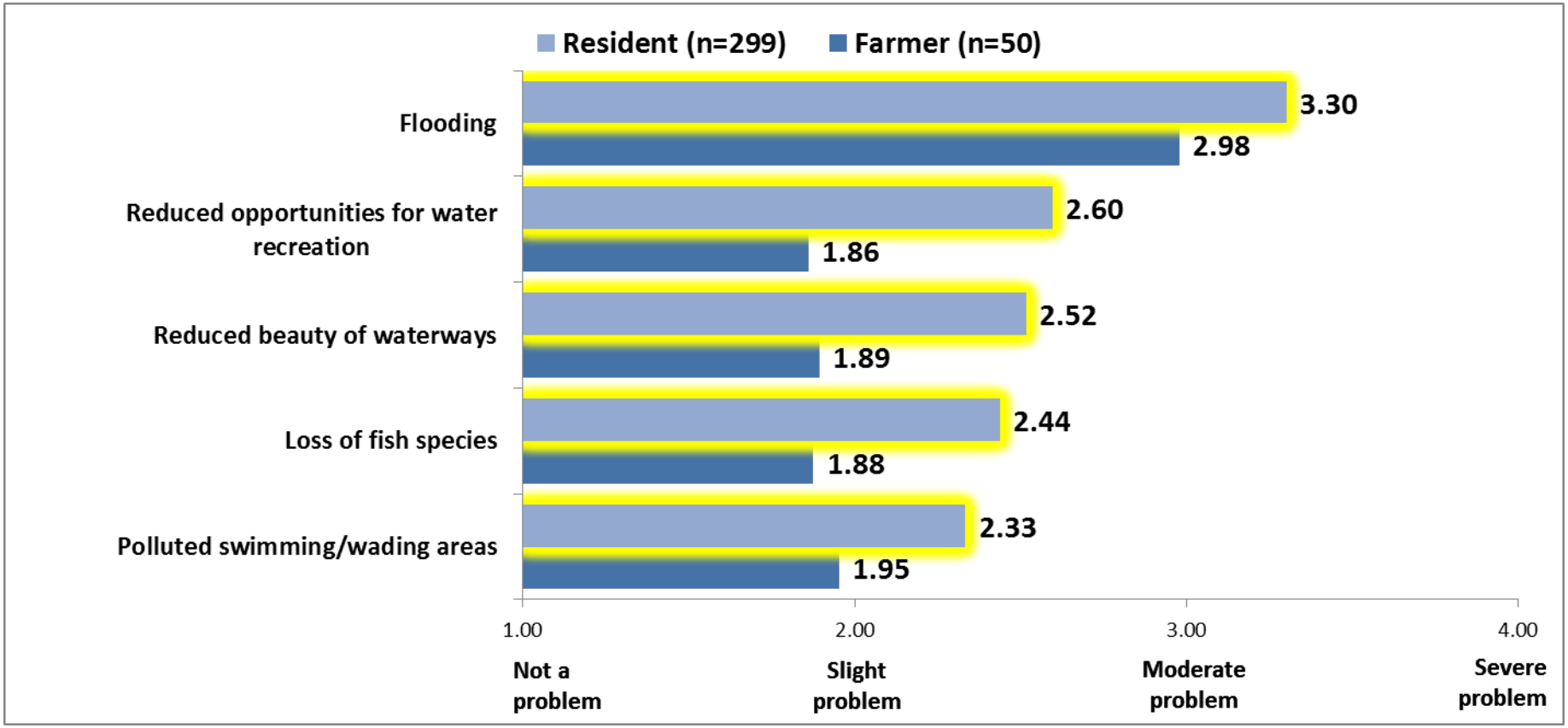
Trend for higher ratings by Residents continued, especially with waste material issues.



Q13. To the best of your knowledge, how much do each of the following issues or practices contribute to problems for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Ongoing Problems

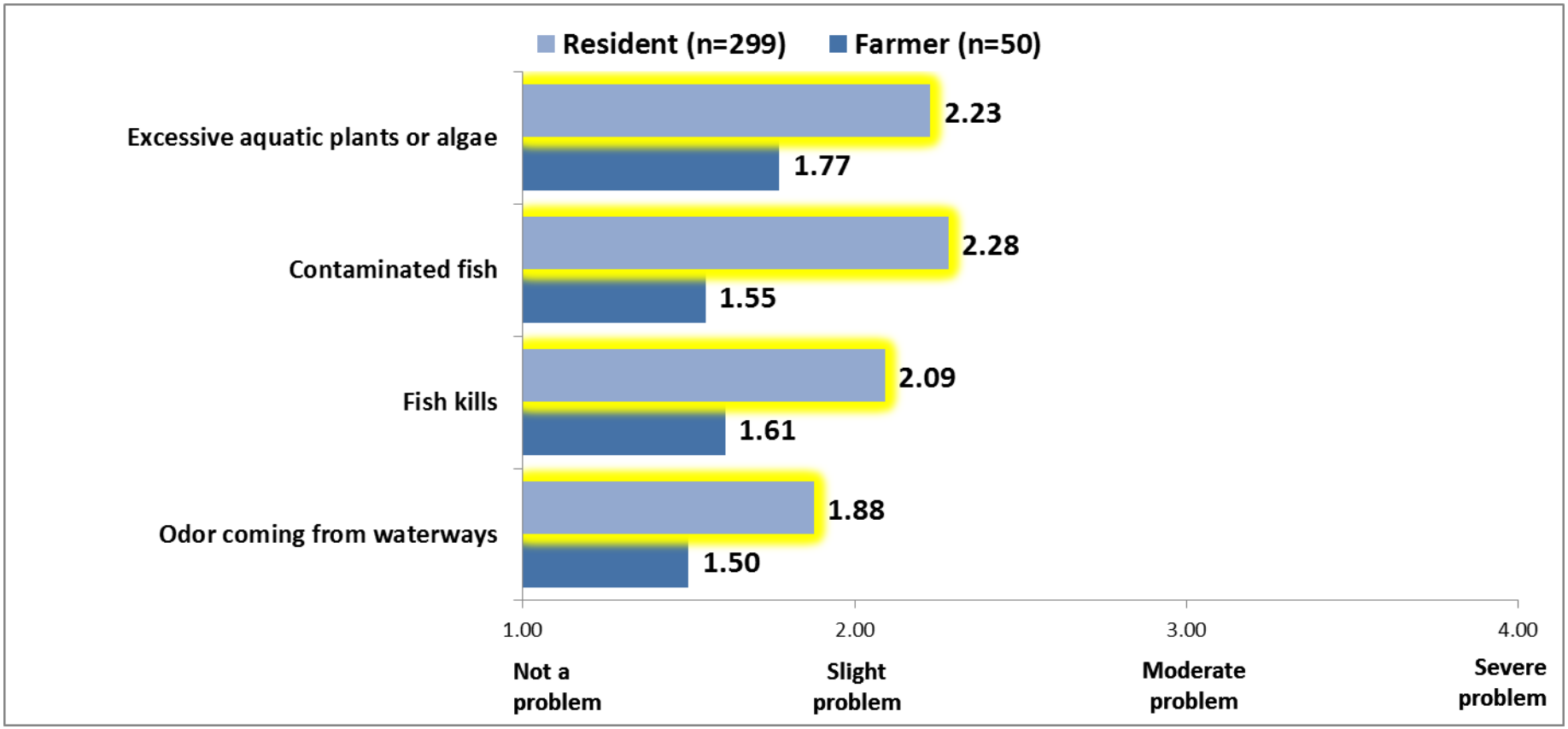
Residents scored **all** of these ongoing problems as significantly more problematic than Farmers did.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Ongoing Problems (cont.)

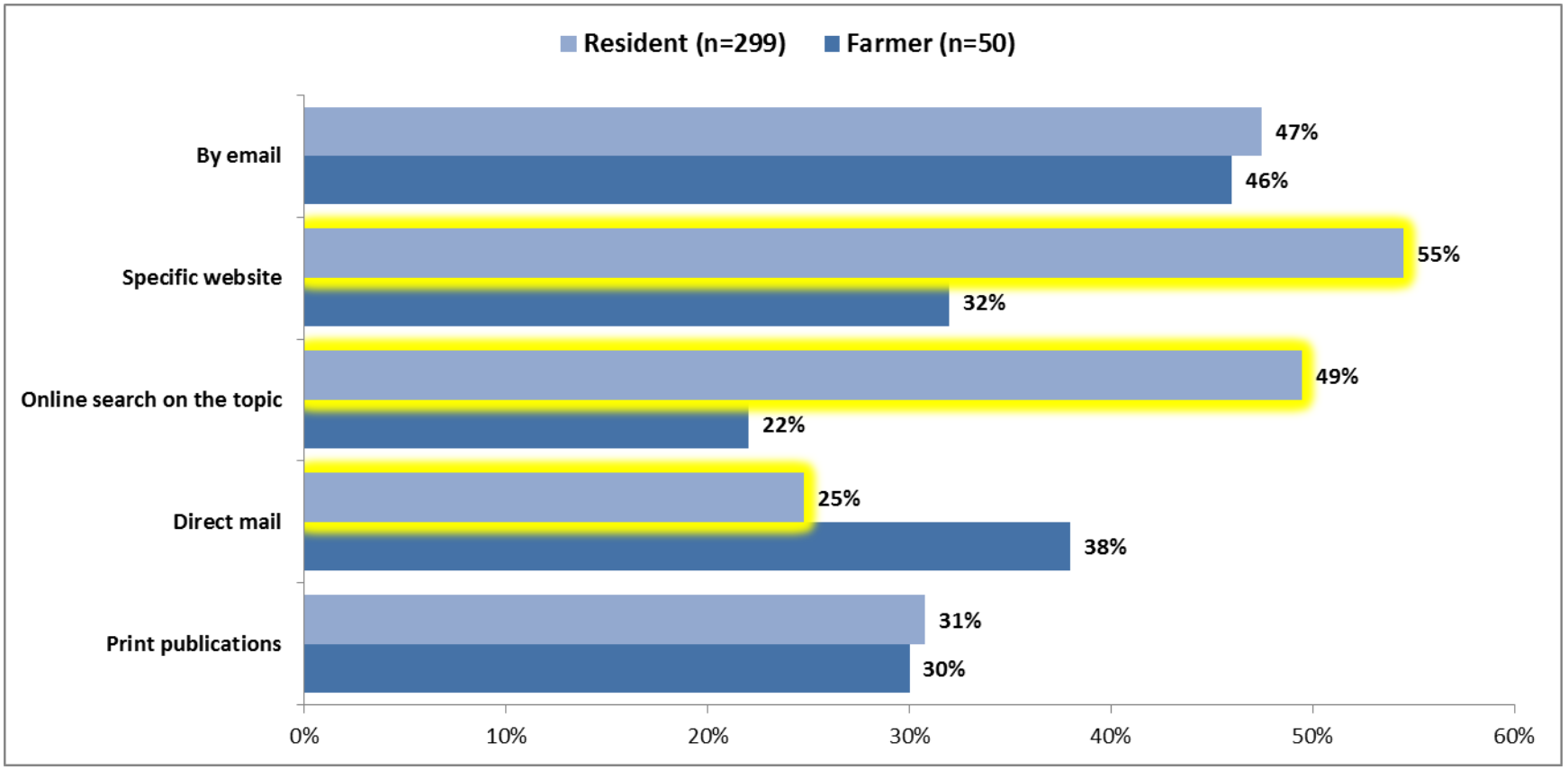
Residents scored **all** of these ongoing problems as significantly more problematic than Farmers did. Residents considered these ***slight problems***, while Farmers rated them closer to ***not a problem***.



Q14. From your viewpoint, how much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Groups – Communication Preferences

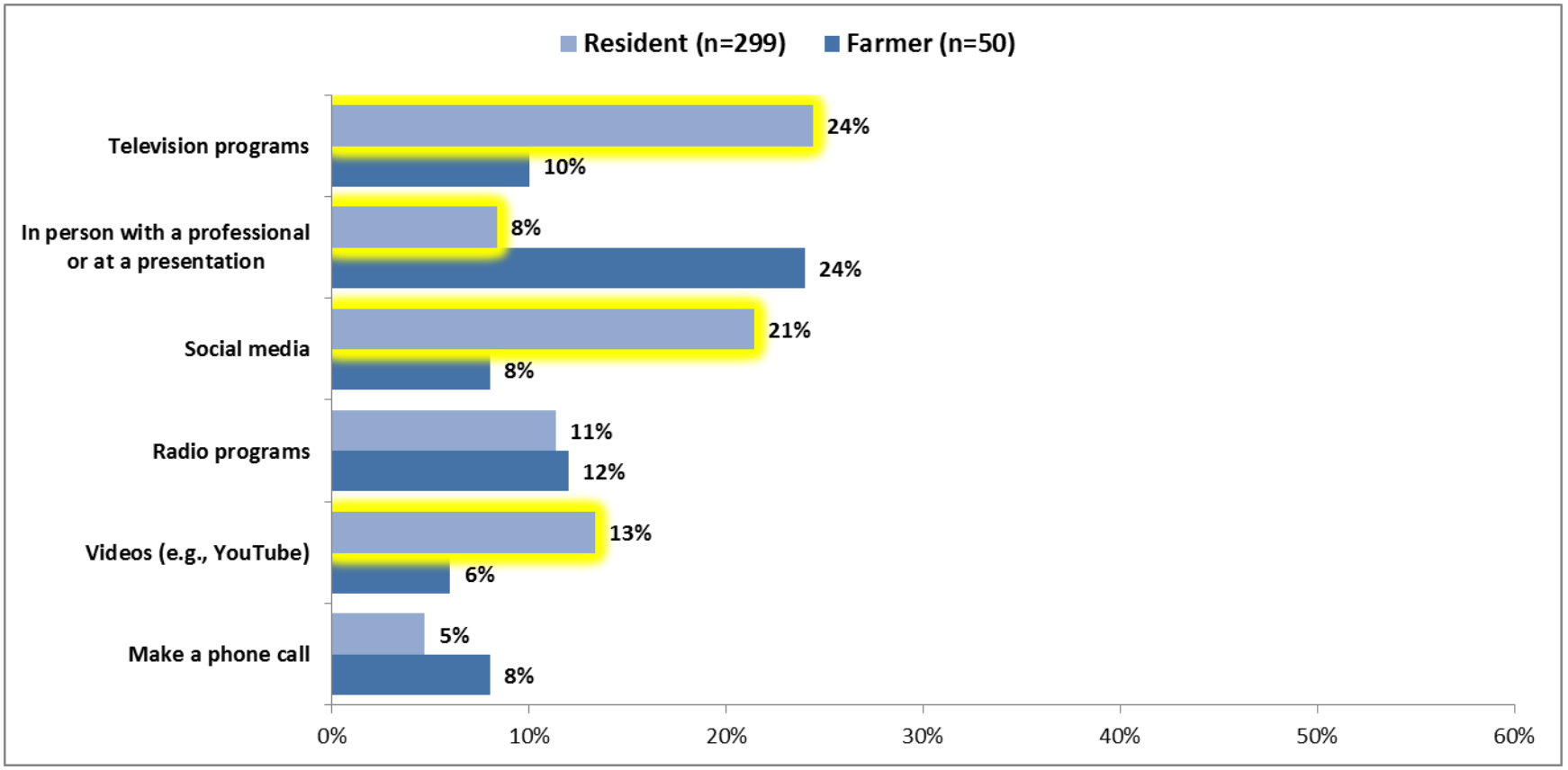
Residents preferred ***specific websites*** and ***online searches*** significantly more than Farmers.
Residents preferred ***direct mail*** significantly less than Famrers.



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Groups – Communication Preferences (cont.)

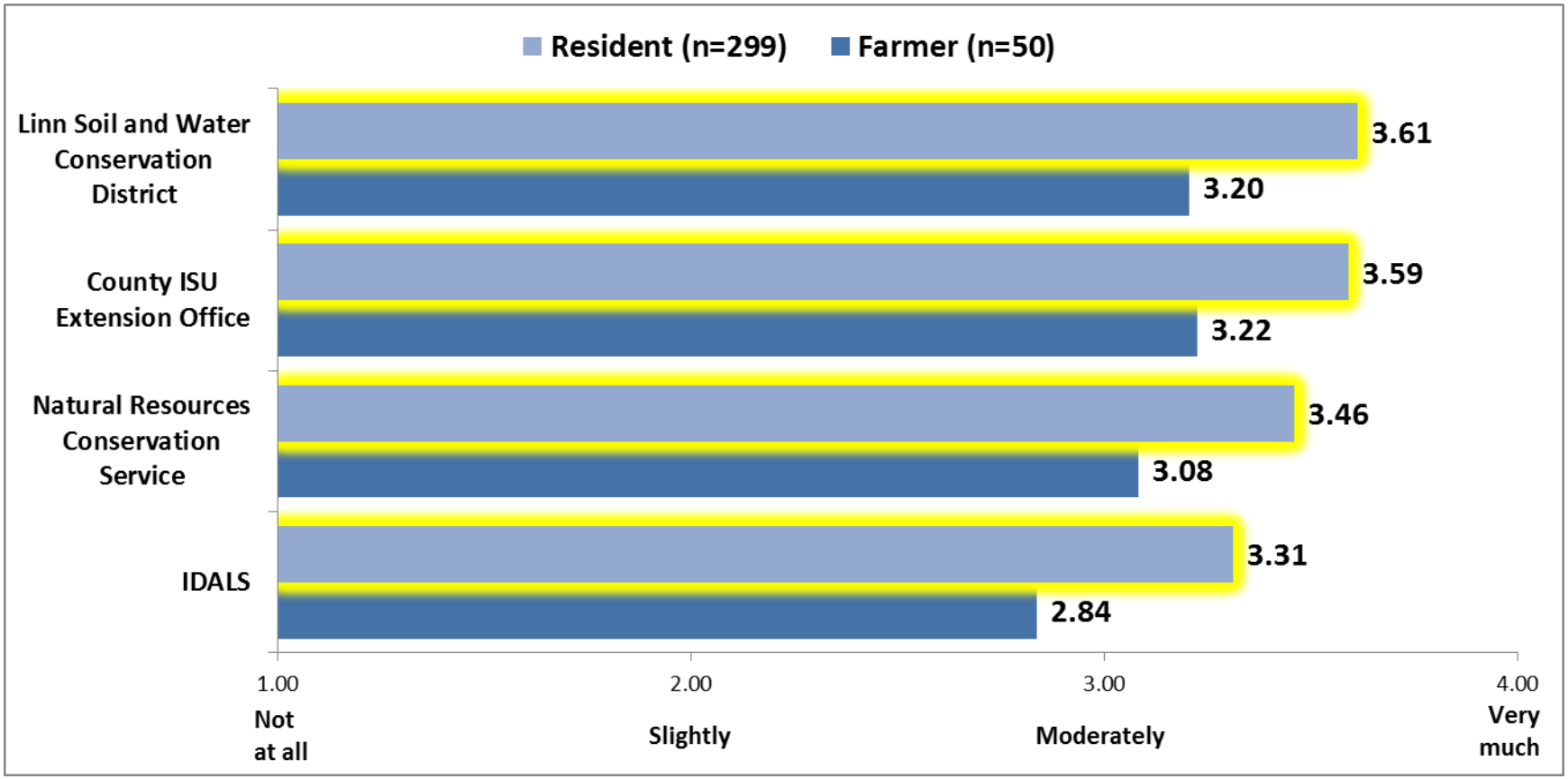
Residents preferred ***TV programs, social media*** and ***videos*** significantly more than Farmers. Farmers preferred ***communication in person*** significantly more than Residents.



Q15. How would you **prefer** to access information about soil and water resources and local streams? Please select as many as you prefer.

Groups – Trustworthy Sources

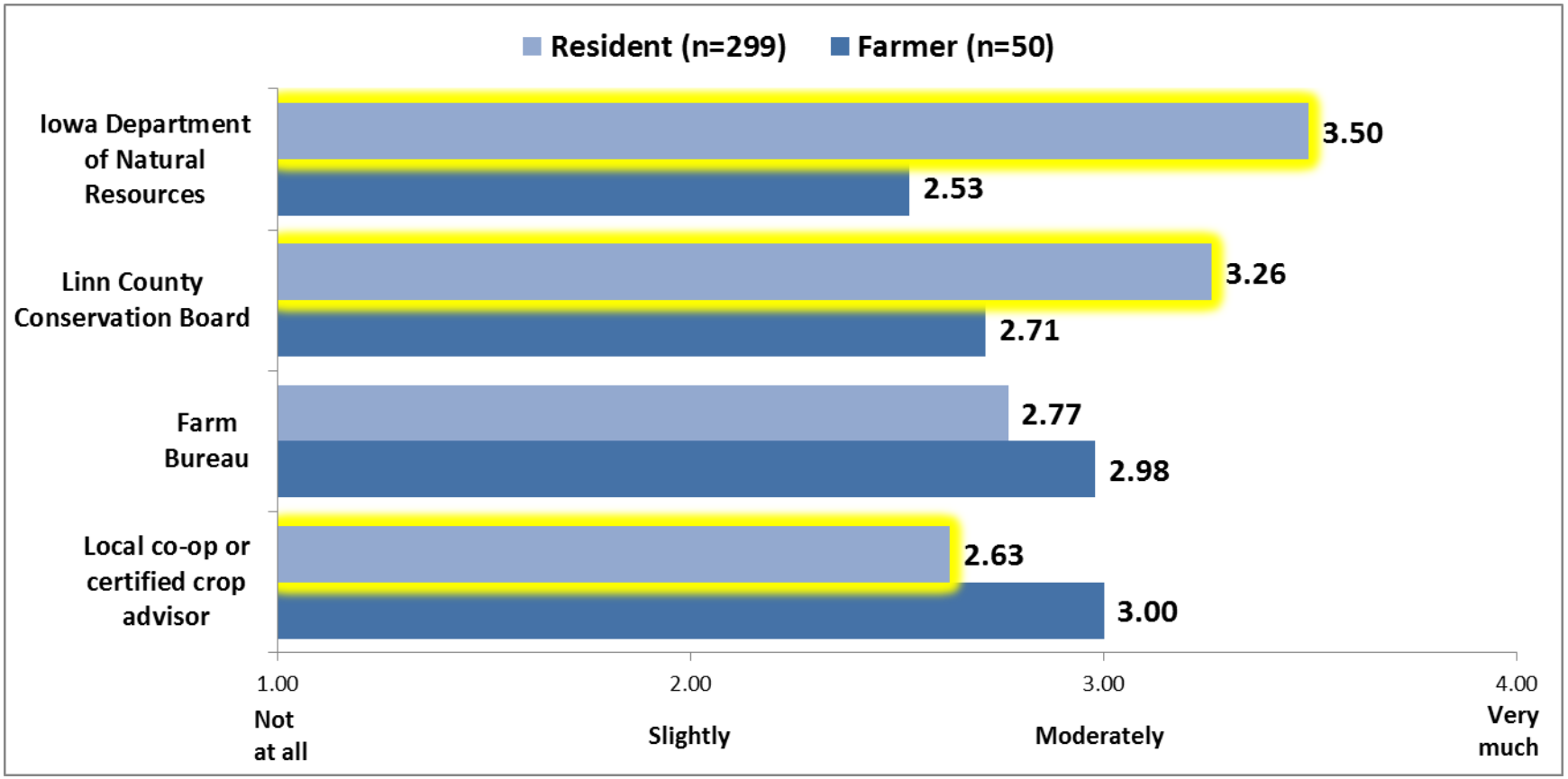
Residents trusted most sources significantly more than Farmers did.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Groups – Trustworthy Sources (cont.)

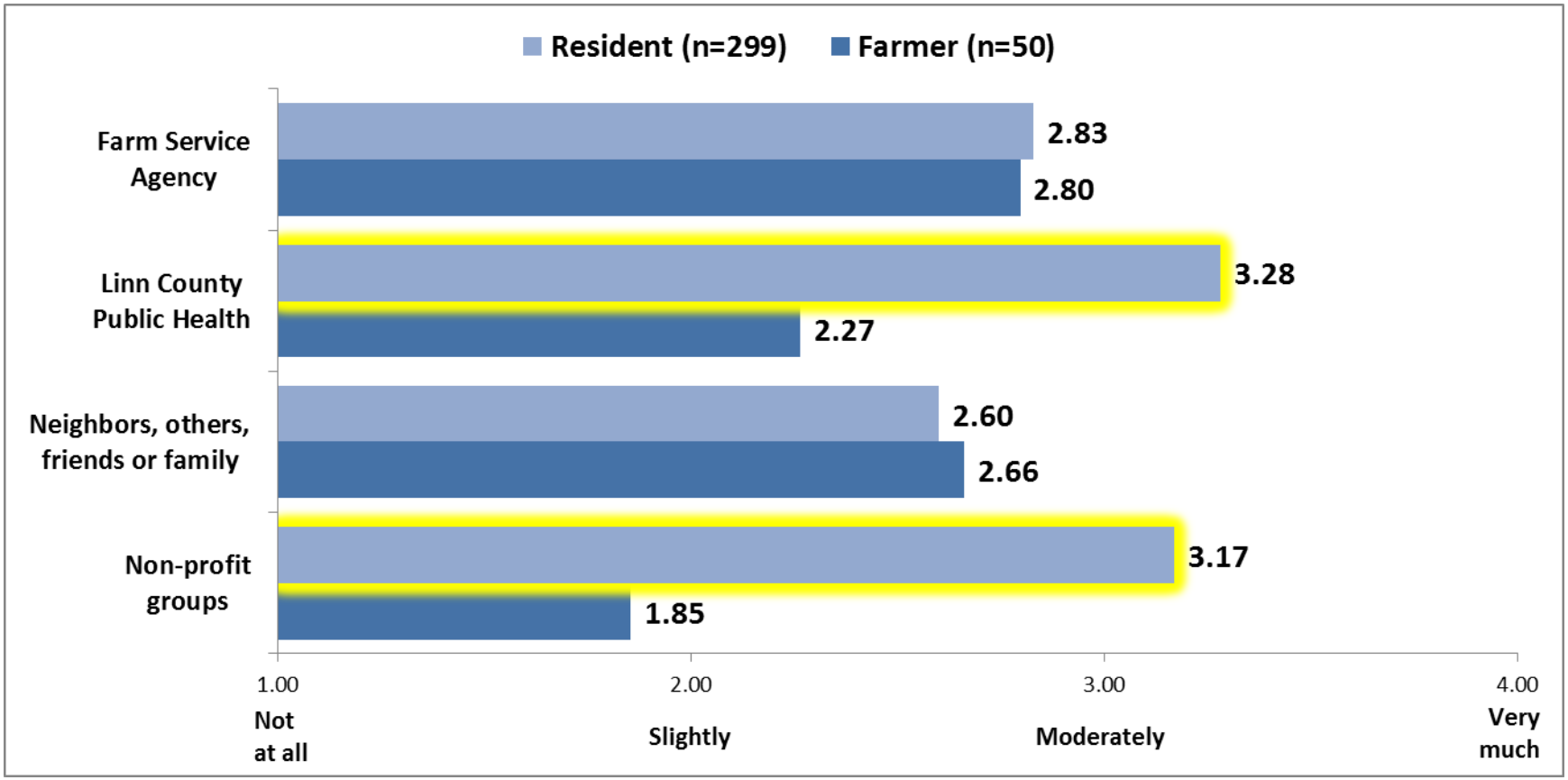
There is a large and significant gap between Residents and Farmers with the trust levels for the Iowa DNR.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Groups – Trustworthy Sources (cont.)

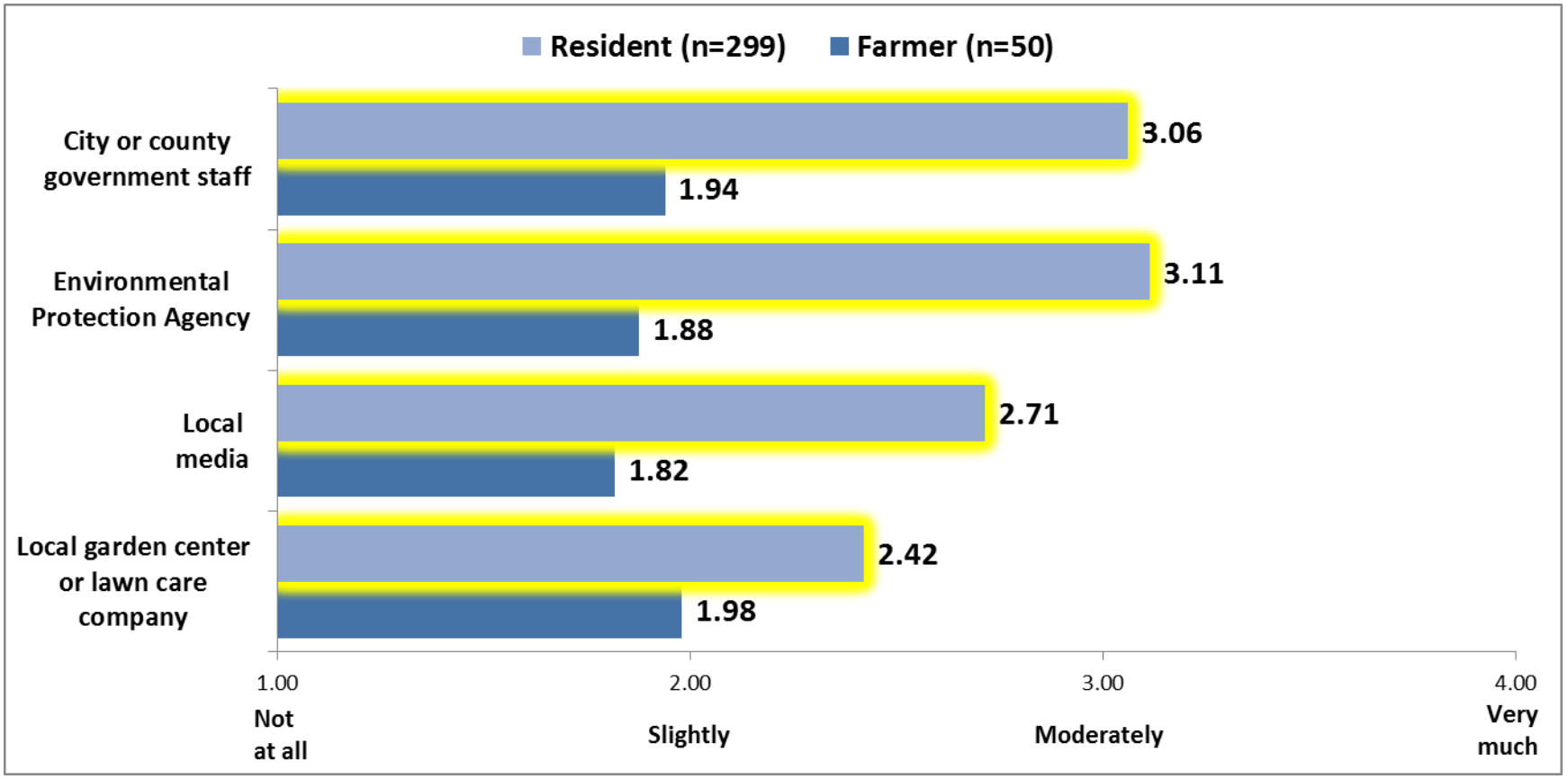
Residents trusted most sources significantly more than Farmers did, especially Linn County Public Health and non-profit groups.



Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Groups – Trustworthy Sources (cont.)

Farmers came close to not trusting these sources,
while Residents reported moderate trust for three of them.



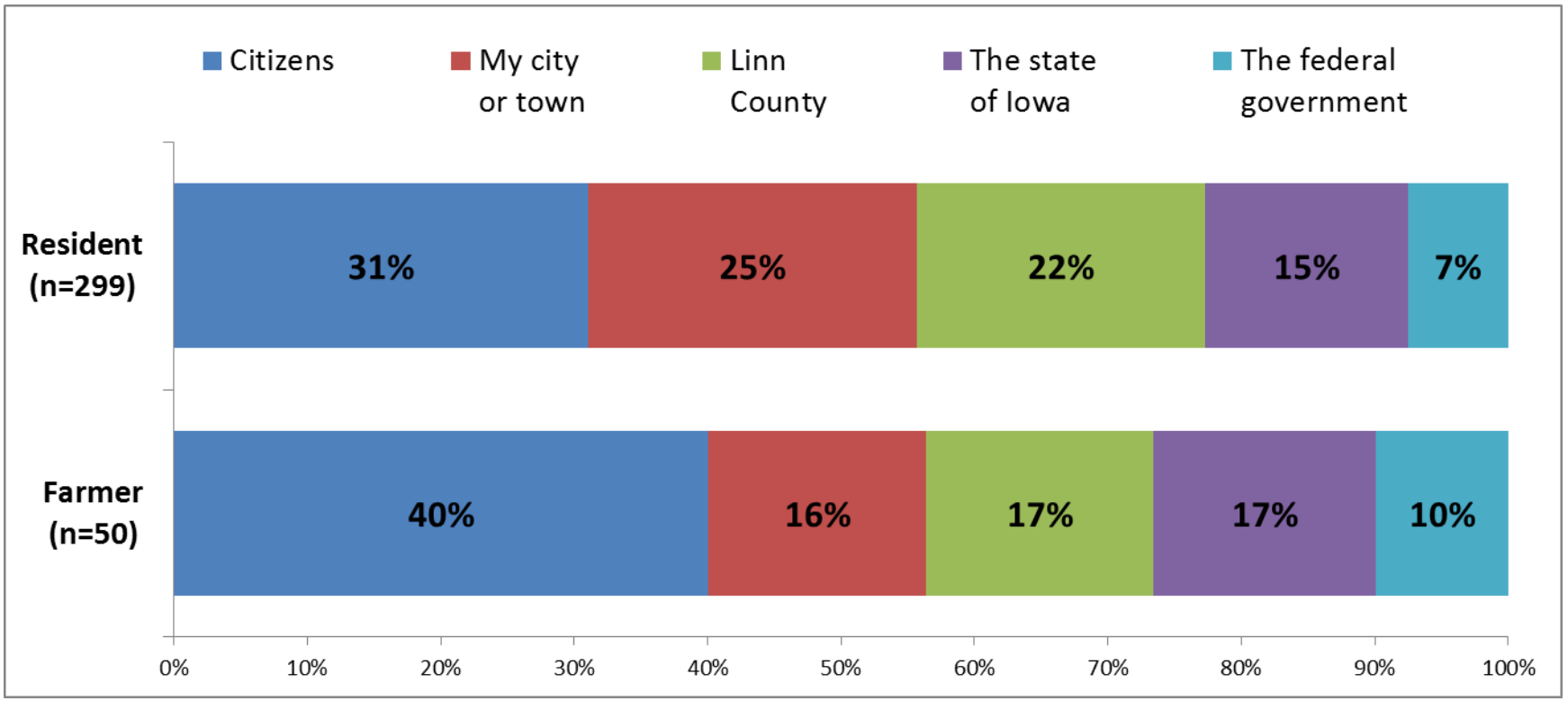
Q18. People get information about the quality of water resources from a number of different sources. To what extent do you trust those listed below as a source of information about water quality?

Groups – Trustworthy Sources (cont.)

- Generally, those who registered the most trust in the sources listed were also those most likely to know about and/or acknowledge the most issues on our lists of ongoing and contributing issues and ongoing problems.
- The above-mentioned trend holds truest for the Residents, who were not only more trusting of sources, in general, but also much more likely to believe that contributing issues and ongoing problems were ***severe***.
- The results were less striking for the Farmers, due—in part—to the lower group's sample size when compared to Residents. However, Farmers were significantly more likely to believe that ***waste material from farm animals, littering/illegal dumping of trash, and excessive use of fertilizers/ herbicides/pesticides for crops*** were ***severe*** problems if they placed more trust in regulatory agencies (Linn Soil and Water Conservation District, city or county government staff, U.S. Environmental Protection Agency, Iowa Department of Natural Resources (DNR), or Linn County Public Health).
- These results all make intuitive sense, as those who are more trusting of information sources are more likely to believe when those sources report issues and problems.

Groups – Responsibility for Water Quality

A significantly greater percentage of Farmers than Residents placed responsibility on ***citizens***. A significantly greater percentage of Residents than Farmers placed responsibility on ***their city or town***. Interestingly, both groups placed 56% total responsibility on ***citizens*** and ***their city or town***.



Q24. How much of the responsibility to help protect local water quality lies with each of the following entities? Assign a percentage to each, with the total adding to 100%.

Key Findings

Key Findings

Intercept:

- A minority of the respondents had ever been affected by flooding at home or work.
- Indian Creek was the most-visited local creek.
- Summer was the most popular season for creek visits, followed by spring, then autumn.
- A third of respondents visited local creeks during just one season, and 22% visited local creeks year-round.
- Most people in the group used the creeks for multiple activities and 37% have used it for 5 or more activities.
- The mean distance respondents drove to creeks was 7.2 miles, though the majority of respondents drove less than 5 miles to go to creeks.

Key Findings

Intercept (cont.):

- Nature enjoyment and running/jogging/walking were the most frequent activities at local creeks.
- Fishing/hunting, swimming/wading and kayaking/canoeing were all infrequent activities at local creeks.
- Drinking water protection was unmistakably the most important issue to the overall group.
- Having nature areas that are free of pollution and trash were also highly important to the group.
- Notably, opportunities to canoe/kayak near home was the only issue a majority of respondents rated “Not Important.”

Key Findings

Residents:

- A majority of Residents indicated that they do know where rainwater goes when it runs off their properties. The two most common responses for where rainwater goes were Indian Creek and storm sewer/gutter.
- Roughly half of Residents evaluated water quality positively for activities that do not require touching the water and negatively for activities that do require touching the water.
- Residents scored stormwater runoff from hard surfaces, such as parking lots, streets and roofs most severe problem. The slightest problem is waste material from pets. Fully half of all Residents did not know about the issue of improperly maintained septic systems.
- Flooding was the only ongoing problem that scored within the moderate-to-severe problem range. This is a standout ongoing problem.
  - Over 40% of Residents showed unawareness of three related issues: loss of fish species, contaminated fish and fish kills.

Key Findings

Residents (cont.):

- Residents recognized the relationship between their lawn care practices and the health of local streams. Residents want to protect creeks and are willing to be part of that effort.
  - Large majorities of Residents currently practice several helpful behaviors.
  - Using rain barrels and having a rain garden are practices Residents were familiar with, but had never tried.
- Web-based methods (specific website, online search and by email) were the most preferred methods of accessing information about soil and water resources.

Key Findings

Residents (cont.):

- Linn Soil and Water Conservation District and County ISU Extension Office were the most highly-trusted sources of information about the quality of water resources.
  - Local garden centers or lawn care companies were the least-trusted sources of information about the quality of water resources.
  - Over 40% of Residents registered unfamiliarity with local cooperatives or certified crop advisors and the Farm Service Agency.
- Residents placed the bulk of the responsibility to help protect local water quality on citizens, followed by their city or town, followed by Linn County. They did not feel it was a federal issue.

Key Findings

Famers:

- Farmers evaluated water quality more positively for activities that do not require touching the water than for activities that do require touching the water.
- Farmers scored most issues as slight-to-moderate problems. Of these, the most severe problem was stormwater runoff from hard surfaces, such as parking lots, streets and roofs.
  - The least severe problem was waste material from pets.
  - 18% did not know about improper disposal of hazardous and household wastes.
- Flooding was the only ongoing problem that scored within the slight-to-moderate problem range. This is a standout ongoing problem perception.
  - 18-20% showed unawareness of three related issues: loss of fish species, contaminated fish and fish kills.

Key Findings

Famers (cont.):

- Farmers prefer either web-based (email, specific website) or print (direct mail, print publications) formats. Almost a quarter enjoy in-person presentations.
- Linn Soil and Water Conservation District and County ISU Extension Office were the most highly-trusted sources of information about the quality of water resources.
  - Non-profit groups and local media were the least-trusted sources of information about the quality of water resources.
  - 14% registered unfamiliarity with the Iowa Department of Agriculture and Land Stewardship (IDALS).
- Farmers agreed most with the statement: “My intent is to leave the land as good as or better than when I started managing or working it.”
  - Farmers agreed least with the statement: “Management practices that improve water quality are too costly for my operation.”

Key Findings

Famers (cont.):

- Farmers placed the bulk of the responsibility to help protect local water quality on citizens, then split relatively equally between their city or town, Linn County and the state of Iowa, with the remaining tenth of the responsibility a federal government issue.
- A substantial majority of applicable Farmers performed helpful practices.
  - The helpful practice with the lowest Farmer usage was using living mulch (such as Kura clover).
  - No Farmers have tried saturated buffers and only two have used bioreactors.
  - Some Farm Owners reported requiring (or encouraging) the usage of some of these same practices. For instance, a majority of Farm Owners required/encouraged the use of grassed waterways.

Key Findings

Famers (cont.):

- Personal out-of-pocket expenses was the greatest barrier to changing management practices.
  - Several other aspects were, at a minimum, slight barriers to changing management practices.
  - Approval of neighbors was the smallest barrier to changing management practices.

Key Findings

Groups:

- A significantly greater percentage of Farmers than Residents lived on property that touches a creek, stream, river or wetland.
- A significantly greater percentage of Residents than Farmers answered that their property has ***not*** been affected by flooding from Indian, Squaw and/or Dry Creeks.
- Farmers evaluated water quality significantly more positively than Residents for all activities except canoeing, kayaking and other boating.
- Residents scored most of the issues we tested as more problematic than Farmers did.
  - Residents scored **nearly all** contributing issues as significantly more problematic than Farmers did. The presence of solid waste landfill along Indian Creek is the exception.
  - Residents scored **all** of these ongoing problems as significantly more problematic than Farmers did.

Key Findings

Groups:

- Residents preferred specific websites, online searches, TV programs, social media and videos significantly more than Farmers.
  - Farmers preferred direct mail and communication in person significantly more than Residents.
- Residents trusted most sources significantly more than Farmers did, especially Linn County Public Health and non-profit groups.
  - There is a large and significant gap between Residents and Farmers regarding their trust for the Iowa DNR.
- A significantly greater percentage of Farmers than Residents placed responsibility on citizens.
  - A significantly greater percentage of Residents than Farmers placed responsibility on their city or town. Interestingly, both groups placed 56% total responsibility on citizens and their city or town.

Recommendations

Recommendations

Publicize & commend practitioners of helpful agricultural and urban landscape behaviors

- Reinforce continued use of positive practices by publicizing the high percentages of citizens and managers/owners of agricultural land who currently engage in them.
- Publicizing current usage rates will encourage some of those who are not practicing to start (peer/social acceptance effect) and will help educate those who are not familiar with any specific practice.
- Develop tactics that promote current practitioners, e.g., annual awards, monthly online profiles.

Recommendations

Emphasize that residents and farmers share many opinions and priorities and view urban issues as more problematic than farm practices

- The issues perceived by both groups as the most problematic for water quality (top 4) were urban issues.
- Both Residents and Farmers valued water quality and believed their practices make a difference.
- It is important to be aware, however, that overall the Farmers saw watershed water quality more positively than Residents and Residents rated several farm practices as more problematic than the Farmers did.

Recommendations

Address concerns about contact with creeks

- Looking at the usage and perceptions of the watershed streams, it appears that people hesitate to engage in activities that involve contact with the water, e.g., wading, fishing and boating.
- Identify problems and work on solutions. If there are no problems, or times of the year when there are no problems, use communication channels to inform the public and creek users.
- Consider special events or publicity tied to these types of activities (e.g., fishing, kayaking) to send the message that the water is safe.

Recommendations

Watershed programs will be most effective if they are more local in scope or origin – leverage local and trusted organizations

- Both Residents and Farmers believe the responsibility rests first with citizens and then local or county level agencies or government.
- The organizations that both Residents and Farmers trust most are:
  - Linn Soil and Water Conservation District
  - Linn County ISU Extension Office
  - Natural Resources Conversation Service (federal but not regulatory)

Recommendations

More education is needed regarding the role and health of fish in the watershed's creeks

- About 40% of Residents and 20% of Farmers lacked knowledge of these issues.
- Farmers and Residents did not see these issues as problematic - if they are, this message needs to be delivered.

Recommendations

Education efforts targeting residents of the watershed should focus on septic system issues, phosphate-free fertilizers and rain harvesting (barrels, gardens)

- These practices have the lowest usage rates and higher unfamiliarity rates.

Recommendations

Education is needed on the problem of pet waste and its effects on watershed creeks

- Both Residents and Farmers rated this as the least problematic of all the contributing issues tested in the study.
- Both Residents and Farmers had low perceptions or low knowledge of biological creek problems that are impacted by pet waste.

Recommendations

Any practices that can be correlated with the prevention or mitigation of flooding should be emphasized in programs and communications

- Flooding was the only moderate to severe problem identified by both Residents and Farmers in the study. Even those people not affected directly by flooding are aware of it.

Recommendations

Improvements and amenities to trails, paths, picnicking and observation areas along the watershed will be utilized

- There is a high usage rate for these types of activities near watershed creeks and they are visited year-round.

Recommendations

Offering farmers and landowners monetary incentives or partial funding will boost participation in practices – remember to publicize existing programs and explain long-term ROI

- Out-of-pocket expenses and lack of government funding were the top barriers.

Recommendations

Communications plans targeting residents should emphasize web-based channels, supplemented by TV and direct mail

- Top information sources are email, specific websites and online search.
- Maximize search engine optimization and investigate online advertising for promotions.
- Share content and links across websites of watershed-related organizations and local/county government agencies or offices.
- Consider seasonal or special promotions via direct mail and/or TV. Pitch TV news stories and provide stock footage and experts for watershed-related stories.

Recommendations

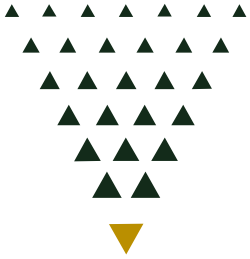
Communications plans targeting farmers or owners of agricultural land should be multi-faceted, using email, websites, direct mail/print and in-person presentations

- Except for email, there is no major segment of Farmers that preferred any one media/source.
- Share content and links across websites that reach Farmers, emphasizing sites from the most trusted organizations.
- Identify existing opportunities for in-person presentations, e.g., field days, producer association meetings, co-op events.

Recommendations

Identify opportunities to partner with local and youth agricultural groups

- Education and improvement projects with 4-H and FFA (donating to these organizations was a popular incentive in our study).
- Education and improvement projects with local parks, churches, schools, etc.



VERNON

RESEARCH GROUP

Public Outreach Lunch, Learn & Input Session

September 24, 2014

Purpose

- Present survey results used to understand residents & farmers in the watershed
- Present public outreach recommendations from Vernon Research
- Begin to make connections to previous goals and public outreach activites
- Gather input on public outreach activities

ICWMA Members

- Linn County
- City of Marion
- City of Cedar Rapids
- City of Hiawatha
- City of Robins
- Linn SWCD

Draft Goal & Objectives

- Research driven
- Technical Team input
- Draw from other plans
- Goals are not final
- Exercise in small groups designed to further develop goals and set objectives

Framework for goals & objectives

1. Communication & education about plan goals and objectives
2. Develop or update policies to implement plan goals and objectives
3. Implement practices to implement plan goals and objectives in both urban and rural areas
4. Develop a process to monitor and measure progress toward goals & objectives

Question 1:

How should we best harness the belief that we all contribute to local water quality & flooding and that we all need to be part of the solution?

Question 2:

Assuming the Plan identifies practices based on both the watershed assessment and the survey results, how do we encourage those practices to those best able to use the information?

Question 3:

How should we structure a program(s) to recognize those implementing positive practices in our watershed?

Question 4:

Given the infrequent use of the creeks for activities involving contact with the water, is this an issue that we need to address? Should we be promoting use of the creek that way?

Question 5:

Contamination from pet/animal/human waste was viewed as the least problematic. However, Dry & Indian creeks are on the Impaired Waters List for bacteria. Since we do not know the source from our data is this an issue to convey to the public and if so, how?

Question 6:

The number of landowners that require or encourage practices is a good start. How do we increase that number?

Next Steps

- Goal setting process (finishing today)
- Develop Implementation sections (Sept. – Nov.)
  - Lunch & Learn in Nov. or Dec. to review goals, objectives and implementation plan sections
- Public comment on the draft plan
- Final plan to policy makers for adoption

Questions or comments?

Jennifer Fencl

East Central Iowa Council of Governments

319-365-9941 ext. 131

jennifer.fencl@ecicog.org

ICWMA Website

www.indiancreekwatershed.weebly.com

VERNON
RESEARCH GROUP

Community Assessment Summary

Indian Creek
Watershed Management Authority

COOPERATION • FLOOD MANAGEMENT • CLEAN WATER

ABOUT THE STUDY

Study Participants

- ***Users*** **of watershed creeks (onsite intercept study conducted by Coe College students) - 99**
- ***Residents*** **and** ***owners of businesses*** **in watershed (online survey sent by Vernon Research) - 297**
- ***Farmers or owners*** **of agricultural land located in the watershed (online survey sent by Vernon Research and mailed survey sent by Farm Bureau) - 50**

ABOUT THE STUDY

Data Collection

- Residents, business owners, farmers and owners of agricultural land surveying open from April 26 through August 31, 2014
- User intercepts conducted Fall 2013, Winter and Spring of 2014

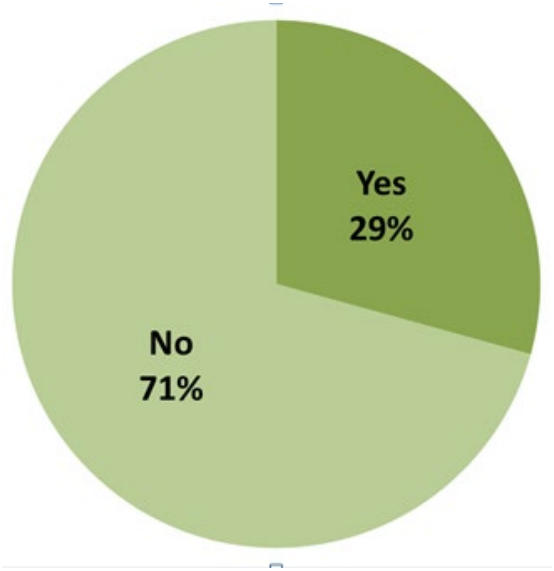
Study Goals

- Gain data and insights on awareness, perceptions, usage, practices, barriers and information sources

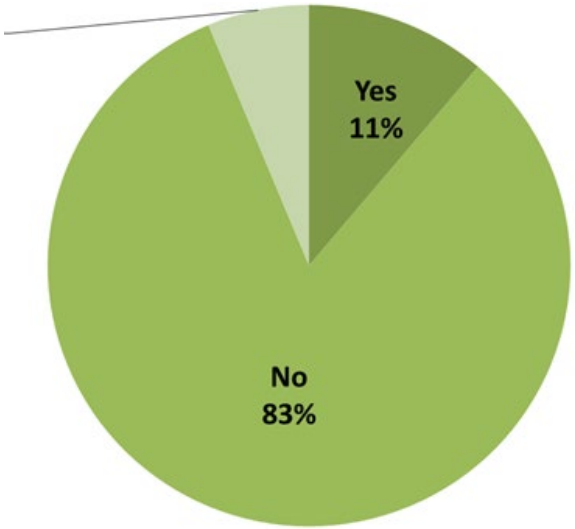
ABOUT THE STUDY - Participant Demographics

Affected by Flooding

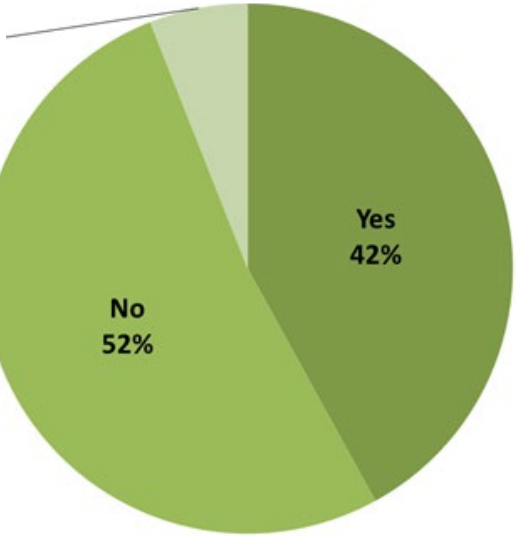
Intercepts



Residents



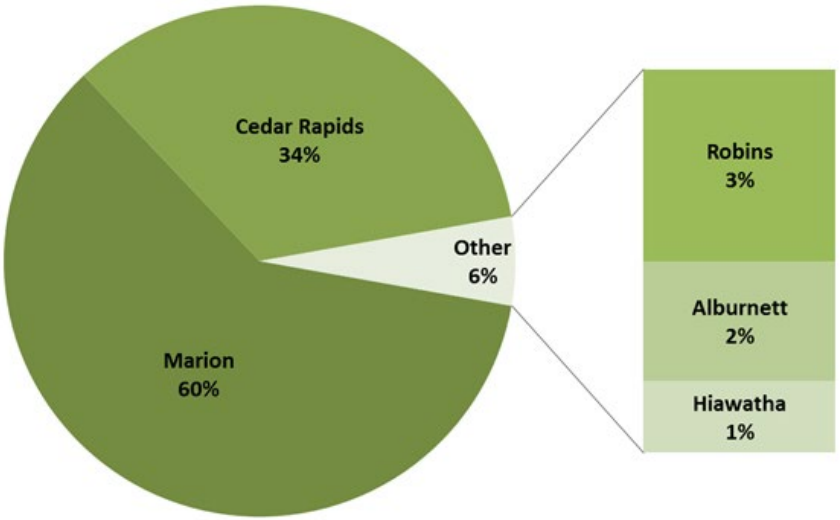
Farmers/Owners



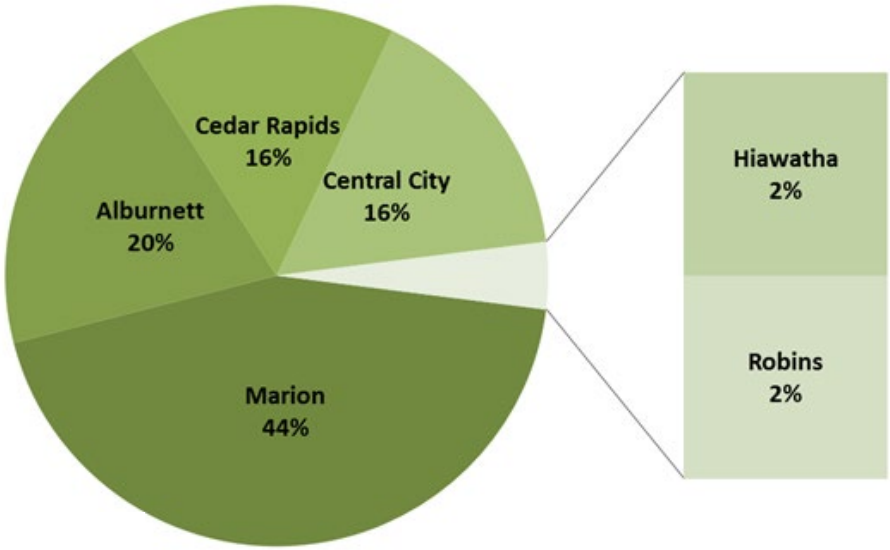
ABOUT THE STUDY - Participant Demographics

Community Representation

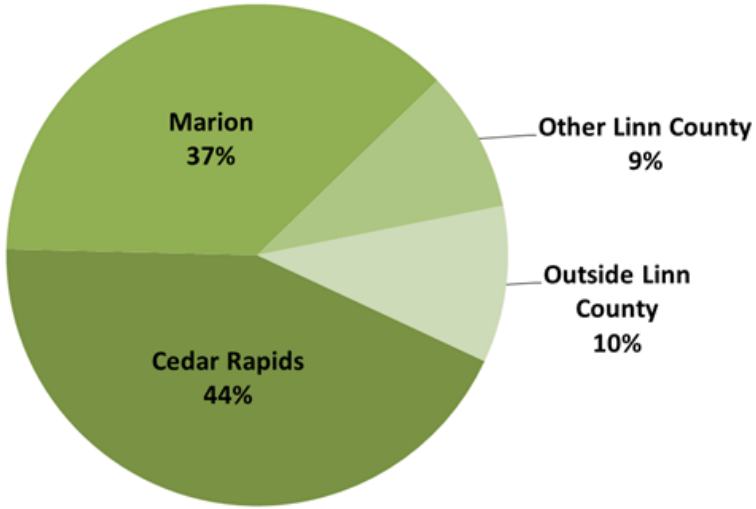
Residents



Farmers/Owners

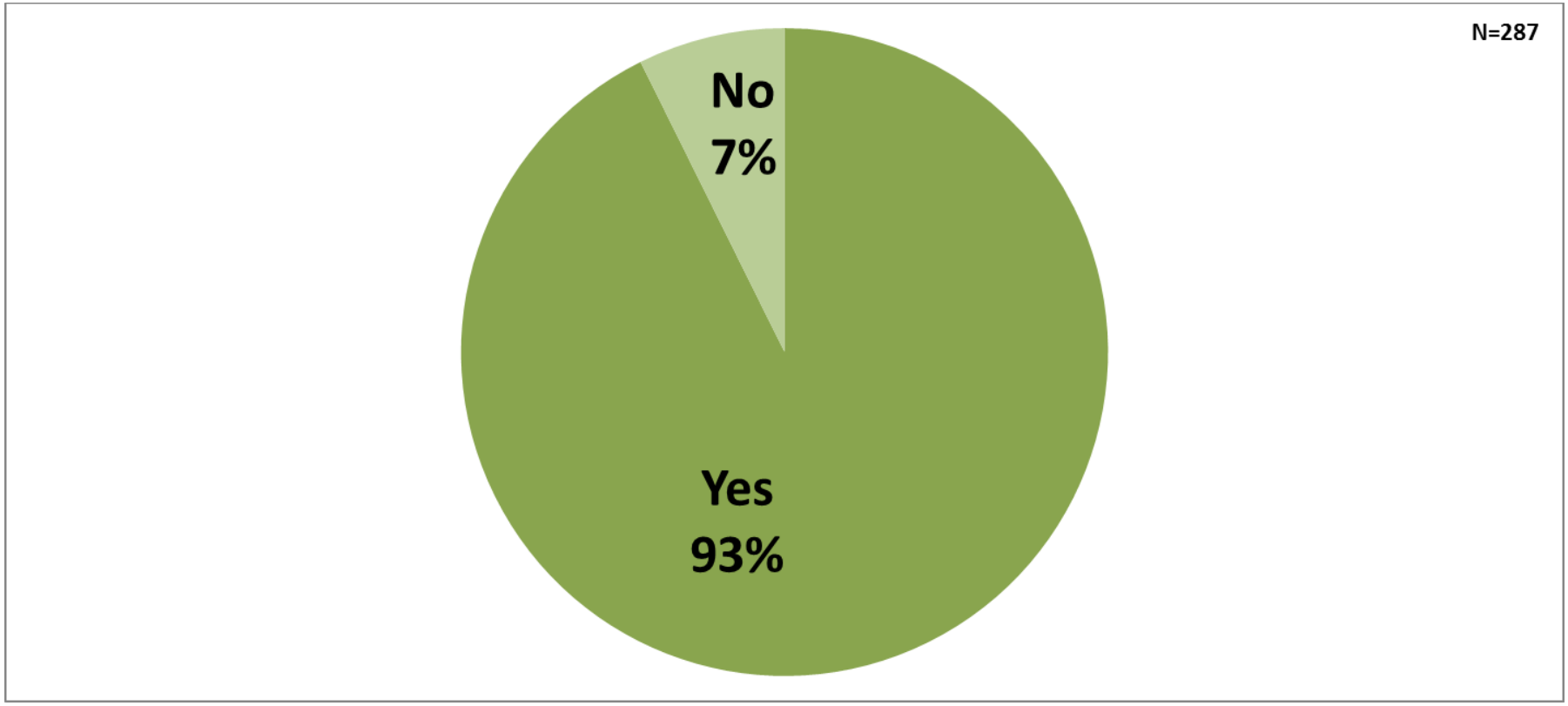


Creek Users



ABOUT THE STUDY - Participant Demographics

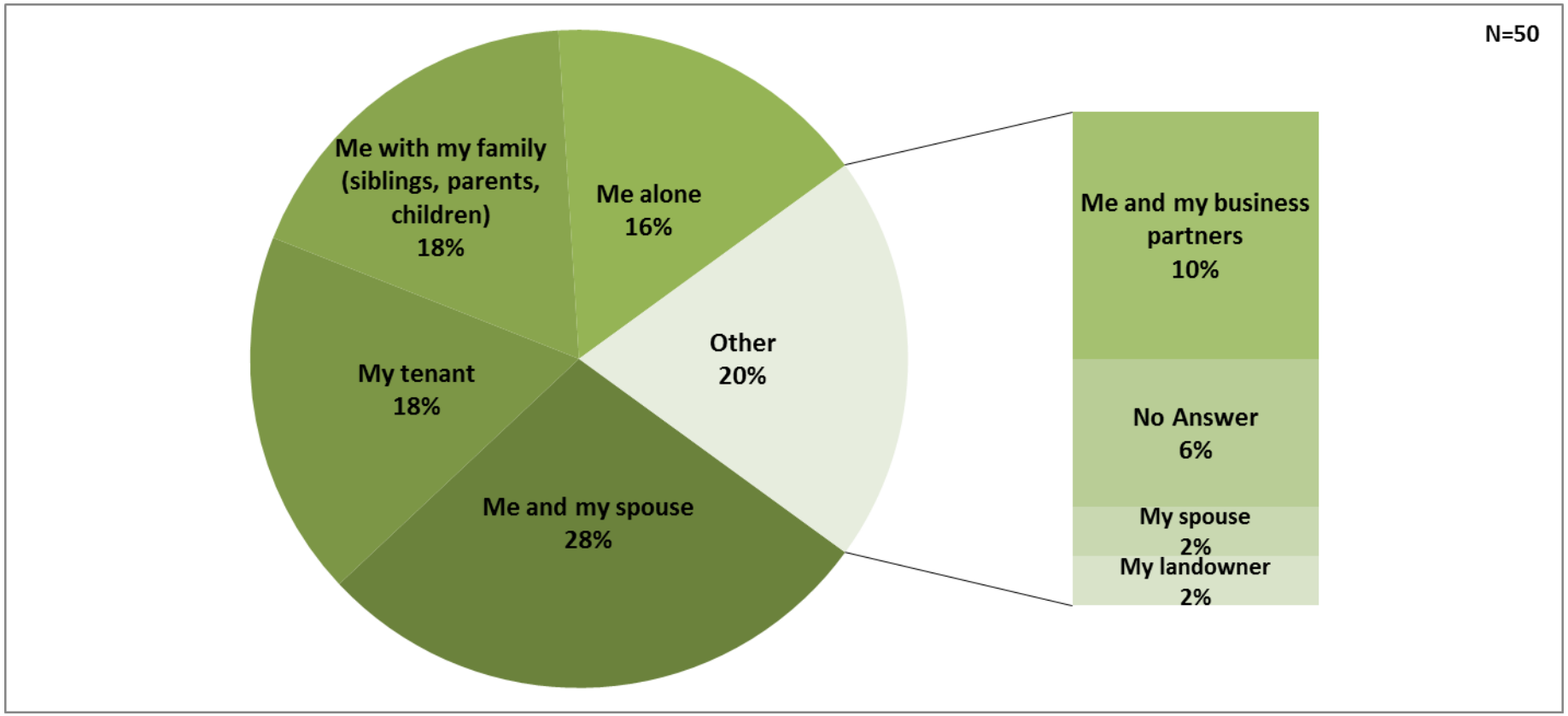
Resident Sample – Decision Influence



Do you make the lawn care decisions for your property?

ABOUT THE STUDY - Participant Demographics

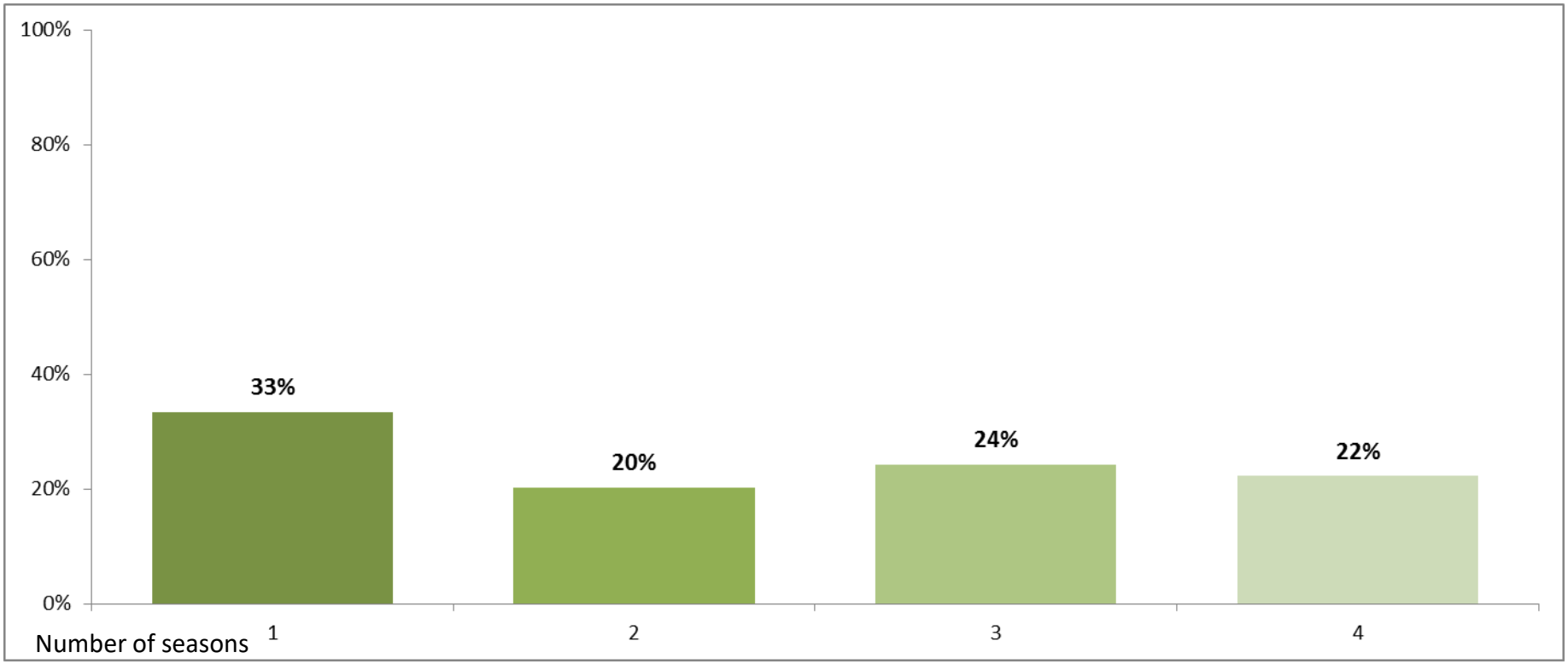
Farmer Sample – Decision Influence



Who generally makes management decisions for your agricultural operation?

ABOUT THE STUDY - Participant Demographics

Creek Usage - Intercepts



In what seasons do you visit the creek(s)? (Check all that apply)

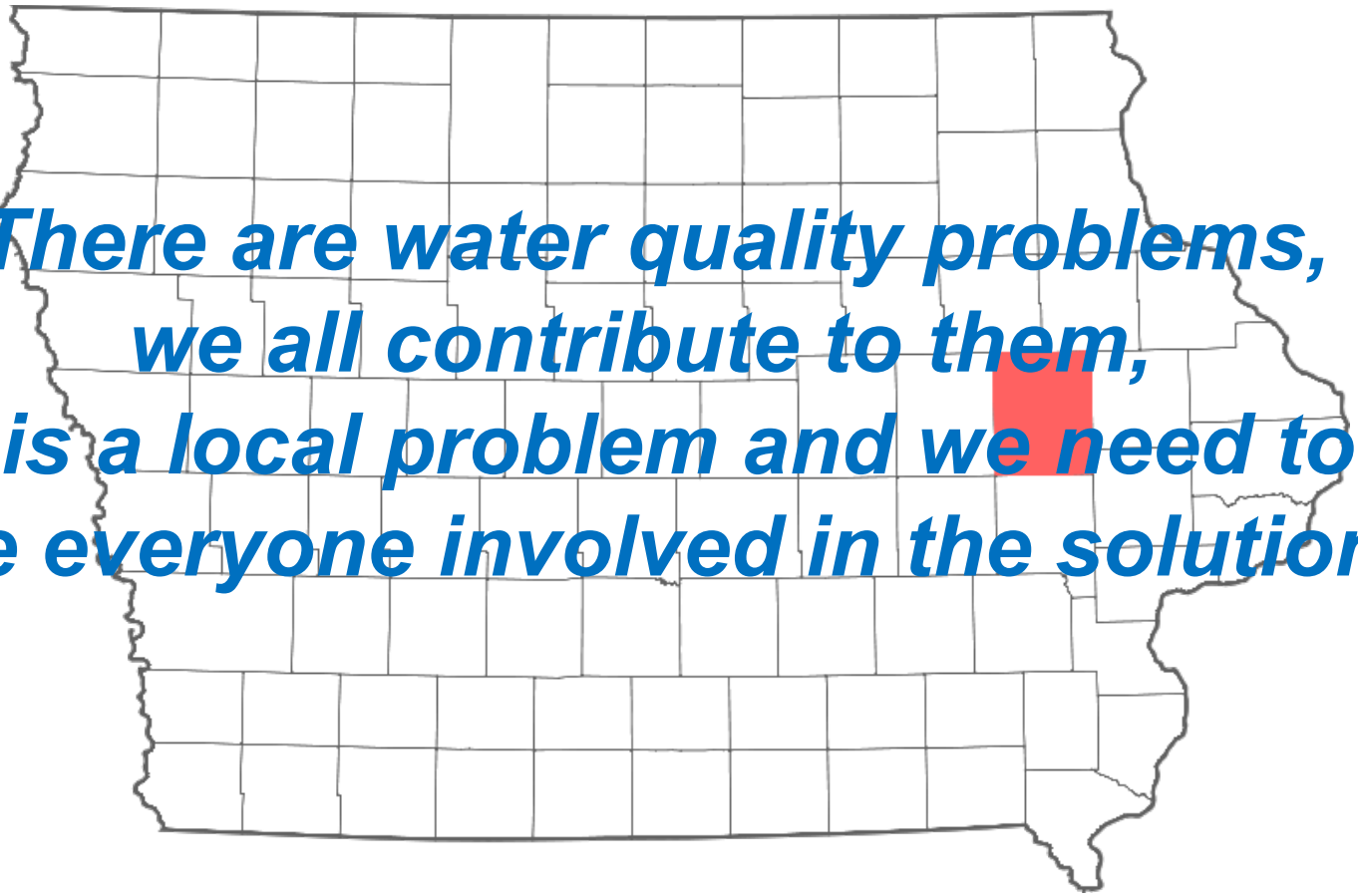
ABOUT THE STUDY - Participant Demographics

- **Mix of participants by age, gender, education, household income, employment status and children in the home**
- **Farmer sample: 57% own and manage the operation, 13% rent it from owner and manage the operation and 30% rent it out to tenant**
- **Resident sample: 93% own, 4% rent, 3% live with family/friend**

Key Findings

Key Findings - Top Takeaway

Users, Residents, Farmers and Landowners agreed



There are water quality problems, we all contribute to them, it is a local problem and we need to have everyone involved in the solutions.

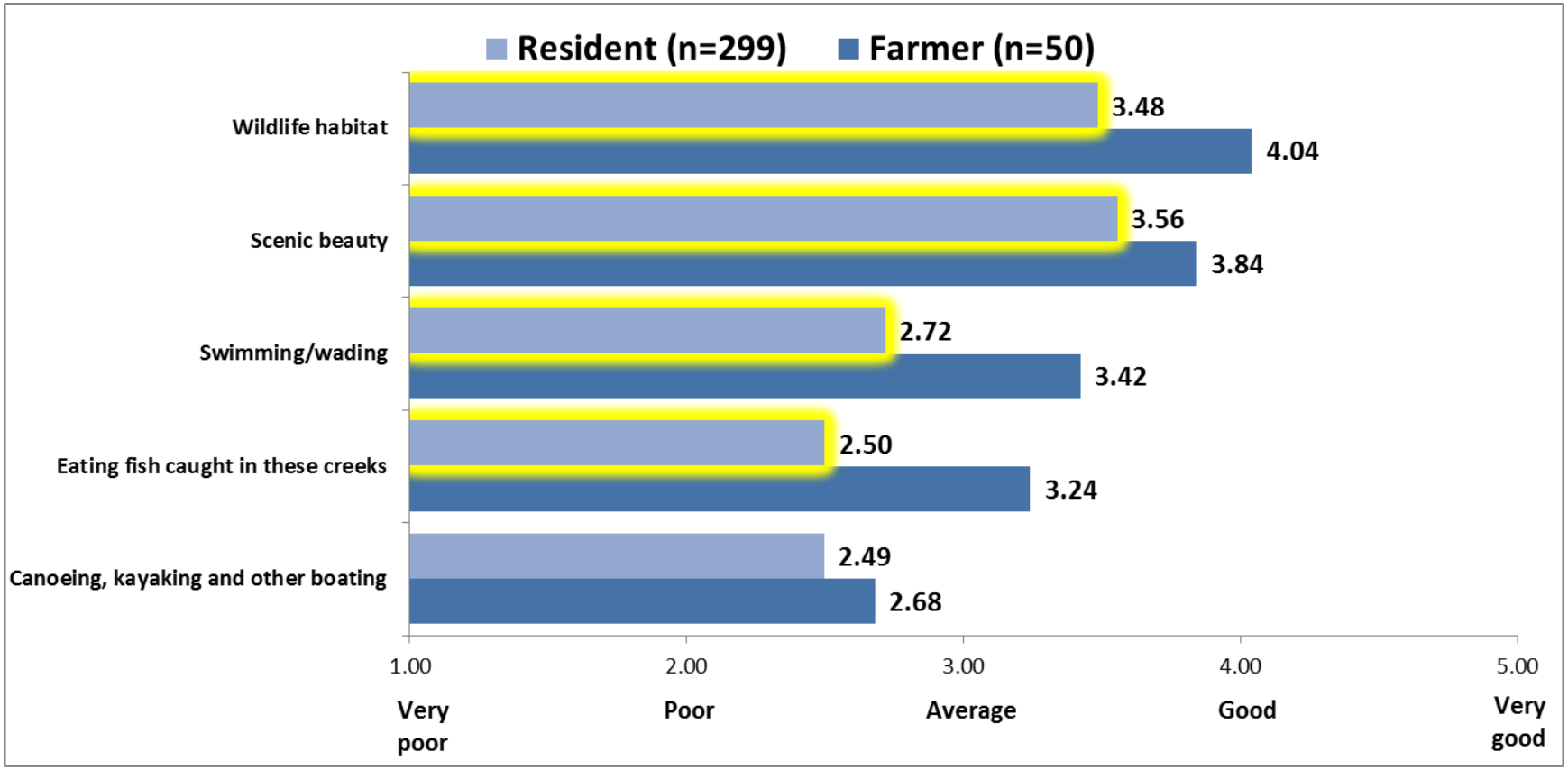
Key Findings - Perceptions

79% of Residents said they know where rainwater goes when it runs off their property. Most people understand water runoff does not go to their water treatment plant.

Characteristic	Frequency
Indian Creek	85
Storm sewer/gutter	78
City sewer	27
Dry Creek	20
Unnamed/other creek	18
Ditch/pond/other	14
Squaw Creek	11

Key Findings - Perceptions

Residents and Farmers viewed water quality more positively for activities that do not require coming in contact with the water. Overall, Farmers evaluated water quality significantly more positively than Residents.



Key Findings – Perceptions

People using the creeks were mostly involved in activities around/by the water but seldom engaging with the water.

	Frequently	Sometimes	Rarely	Never
Nature enjoyment	40%	29%	8%	22%
Running/jogging/ walking	38%	33%	12%	16%
Playgrounds/ picnics	28%	23%	7%	41%
Biking	24%	17%	15%	43%
Fishing/hunting	16%	7%	10%	67%
Swimming/wading	11%	8%	16%	65%
Kayaking/canoeing	9%	4%	8%	79%

Key Findings - Perceptions

Residents and Farmers viewed mostly urban issues as the top contributors to water quality problems.

Resident Top Five	Farmer Top Five
Stormwater runoff from hard surfaces	Stormwater runoff from hard surfaces
Street salt and sand ending up in the water	New housing and commercial development
Excessive use of fertilizers/pesticides on lawns	Street salt and sand ending up in the water
New housing and commercial development	Presence of solid waste landfill along Indian Creek
Excessive use of fertilizers/herbicides/pesticides for crops	Excessive use of fertilizers/pesticides on lawns

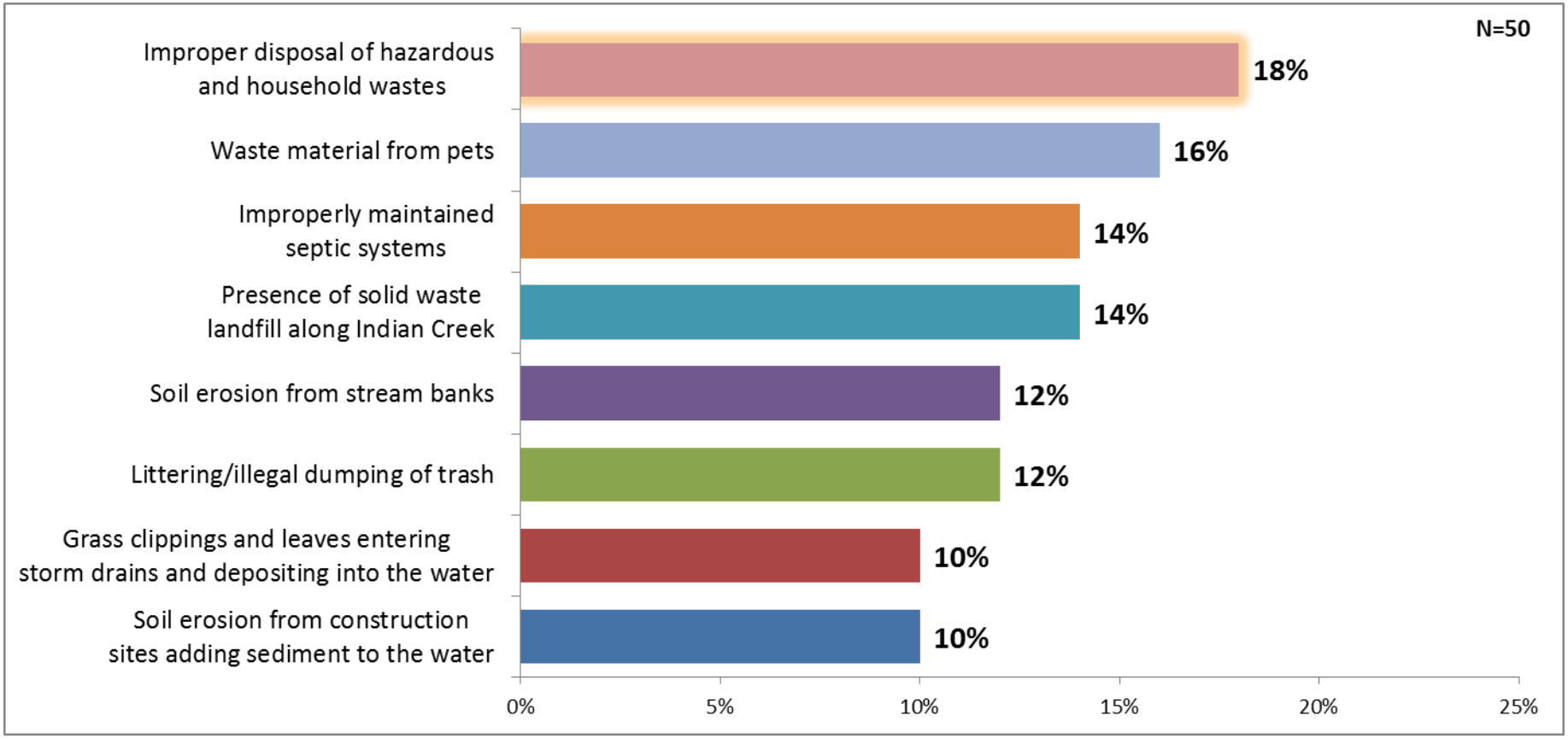
Key Findings - Perceptions

Residents and Farmers viewed contamination from pet/animal/human waste as the least problematic.

Resident Bottom Three	Farmer Bottom Three
Droppings from geese, ducks and other waterfowl	Improperly maintained septic systems
Improperly maintained septic systems	Droppings from geese, ducks and other waterfowl
Waste material from pets	Waste material from pets

Key Findings - Perceptions

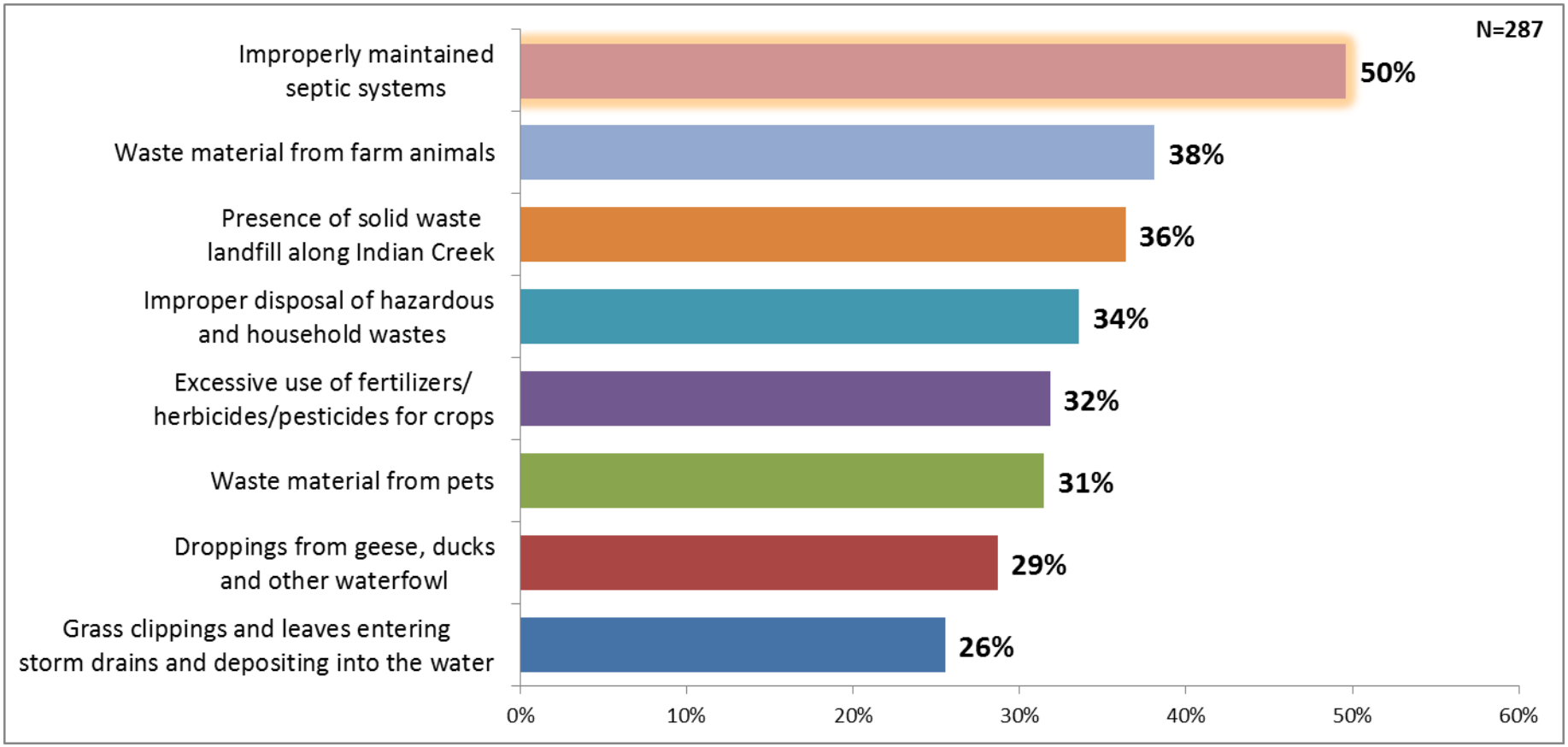
Disposal of different types of waste is a contributing issue that some farmers said they didn't know about.



Farmers were allowed to indicate if they ***didn't know*** about issues contributing to problems.

Key Findings - Perceptions

Disposal of different types of waste is also an area where a third or more of Residents lacked knowledge.

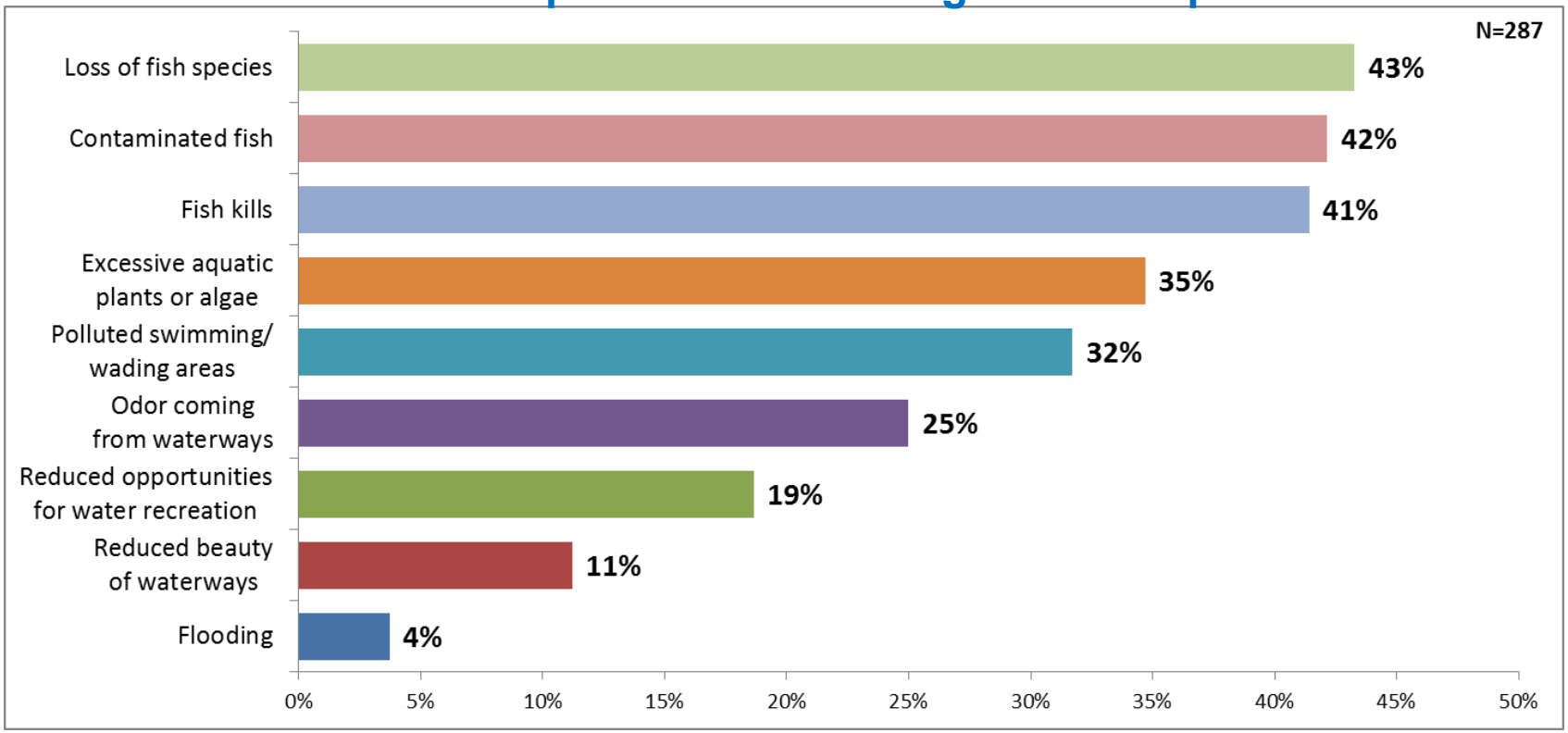


Residents were allowed to indicate if they ***didn't know*** about issues contributing to problems.

Key Findings - Perceptions

A portion of Residents and Farmers were unaware of some biological issues in watershed creeks. Almost everyone is aware of flooding.

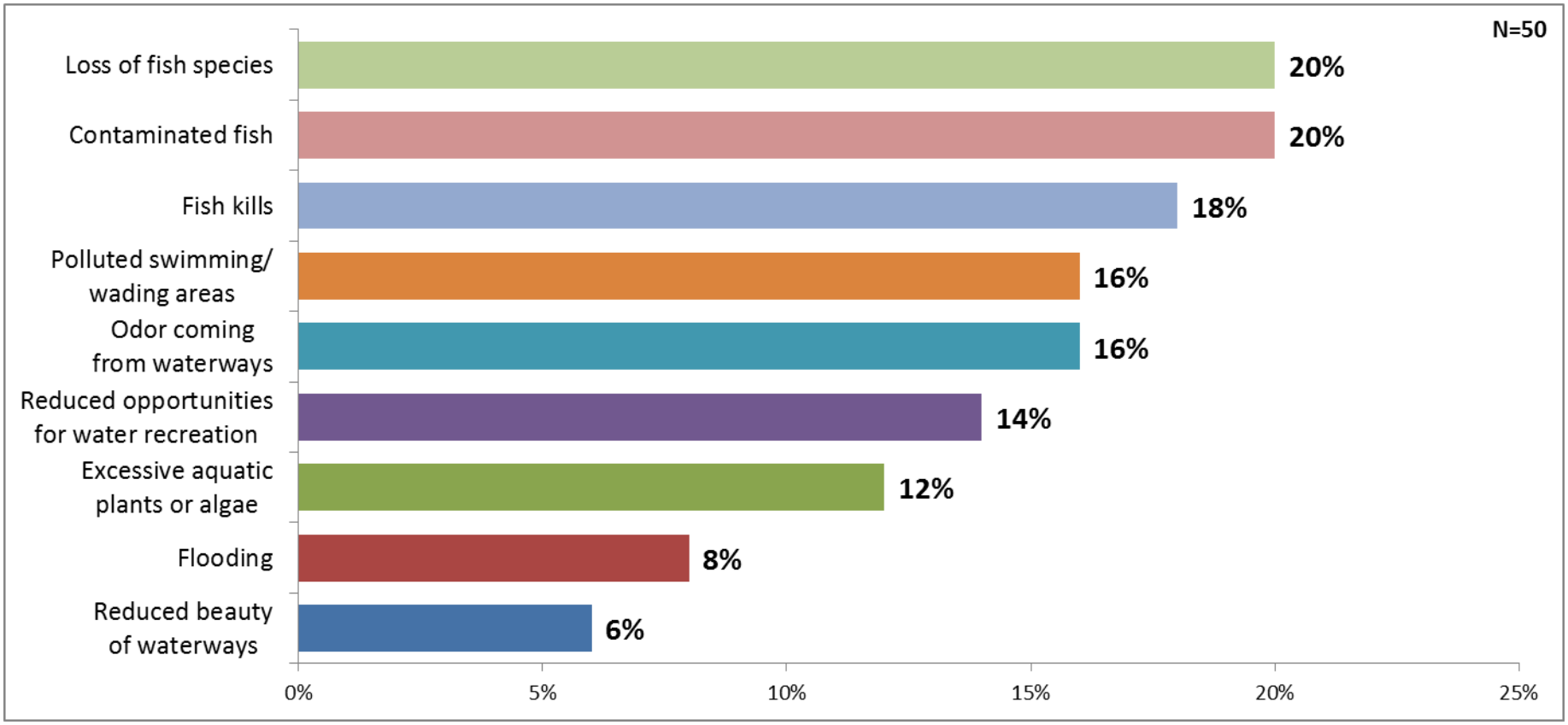
Residents who reported no knowledge of these problems.



How much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

Key Findings - Perceptions

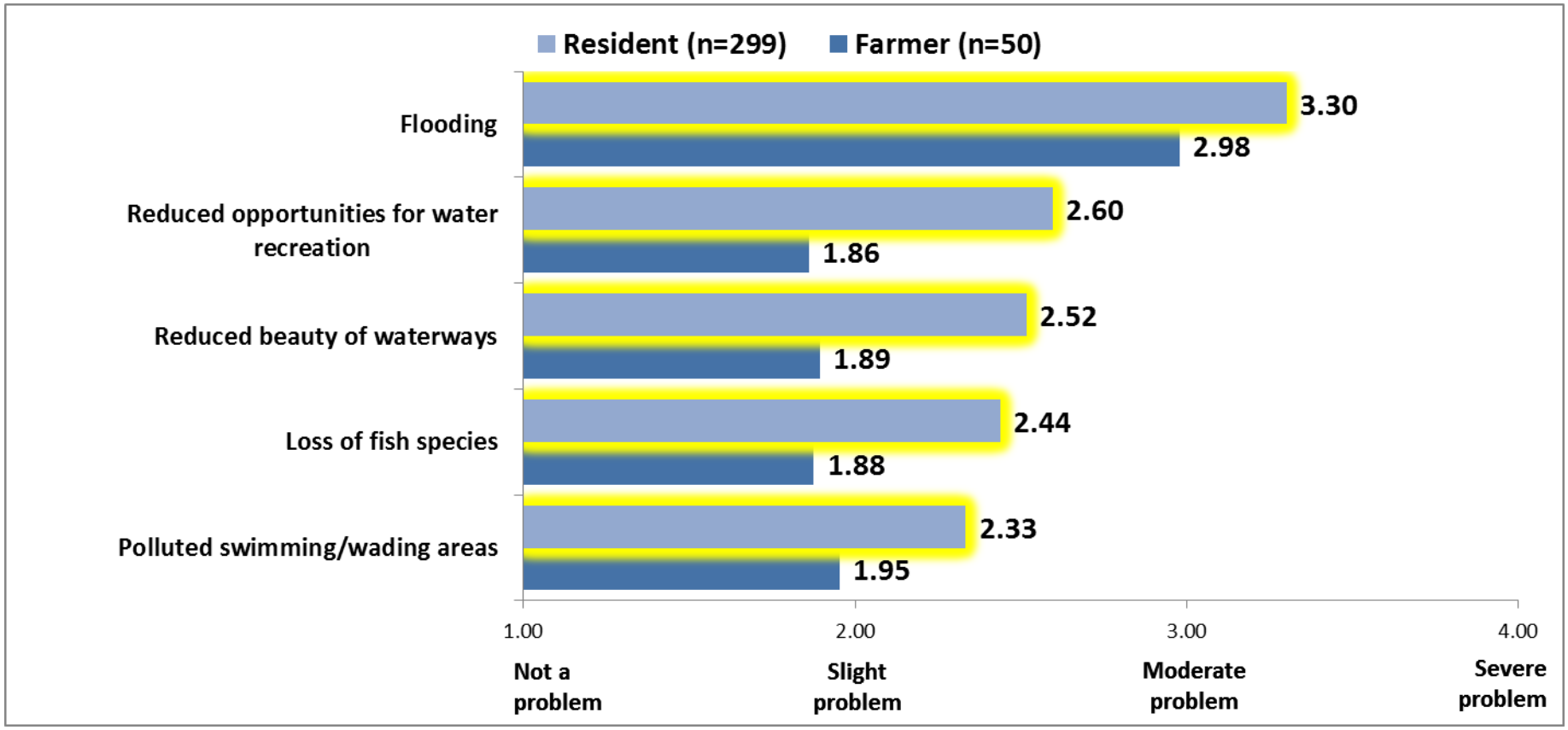
A portion of Farmers reported no knowledge of these problems.



How much have each of the following been a problem for **your local streams** (Indian, Dry and Squaw Creeks)?

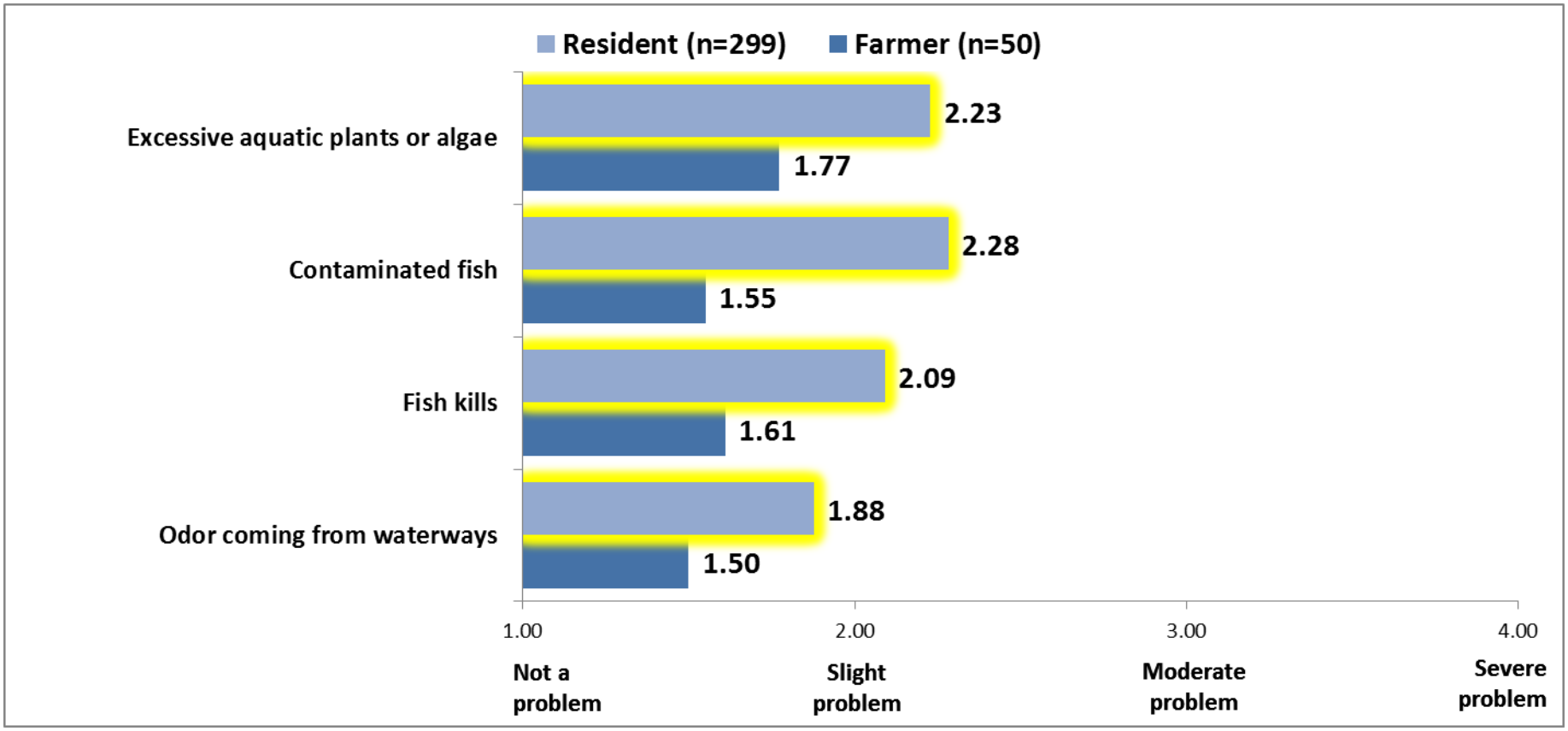
Key Findings - Perceptions

Flooding was the only problem rated moderate or above by both Residents and Farmers. Residents, however, rated many problems greater in severity.



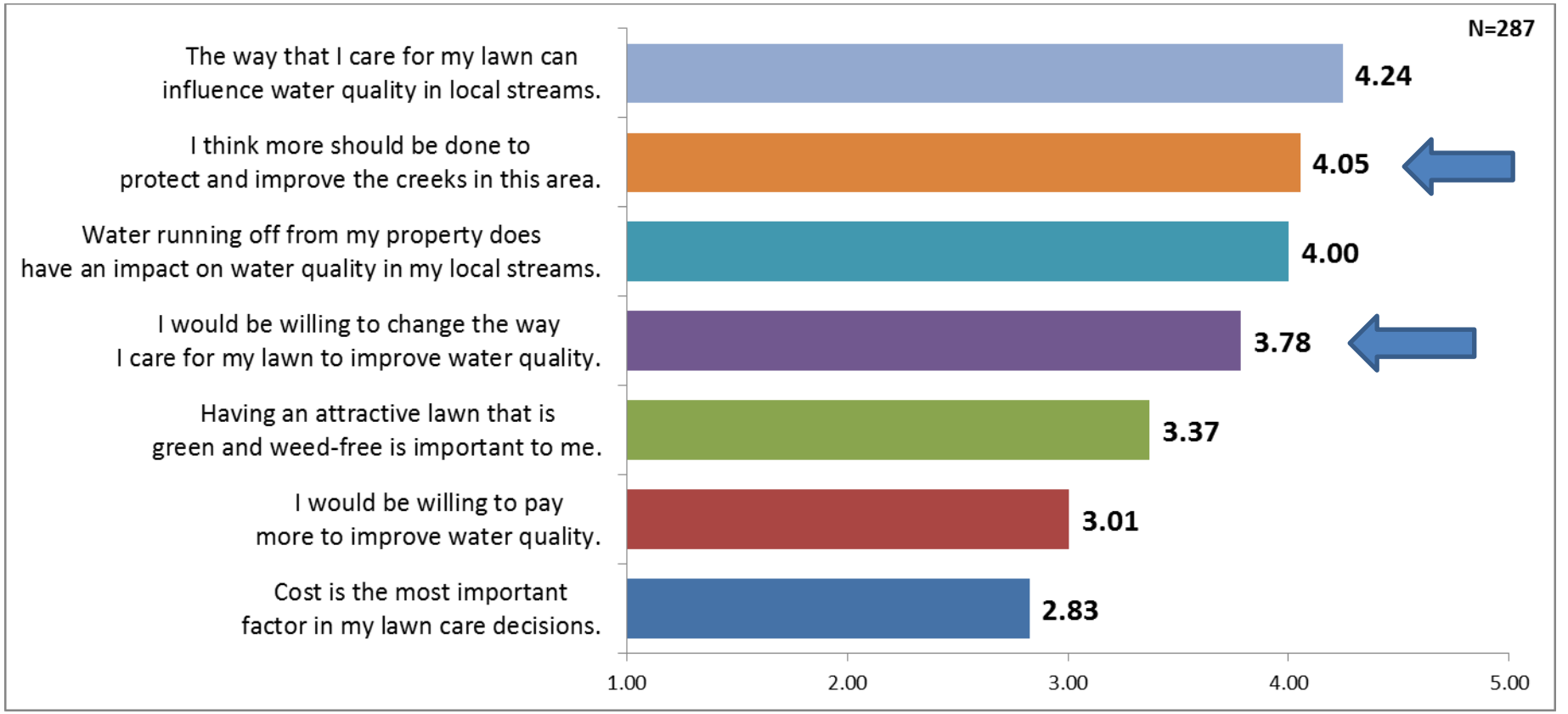
Key Findings - Perceptions

Farmers barely rated these as problems.



Key Findings – Beliefs and Values

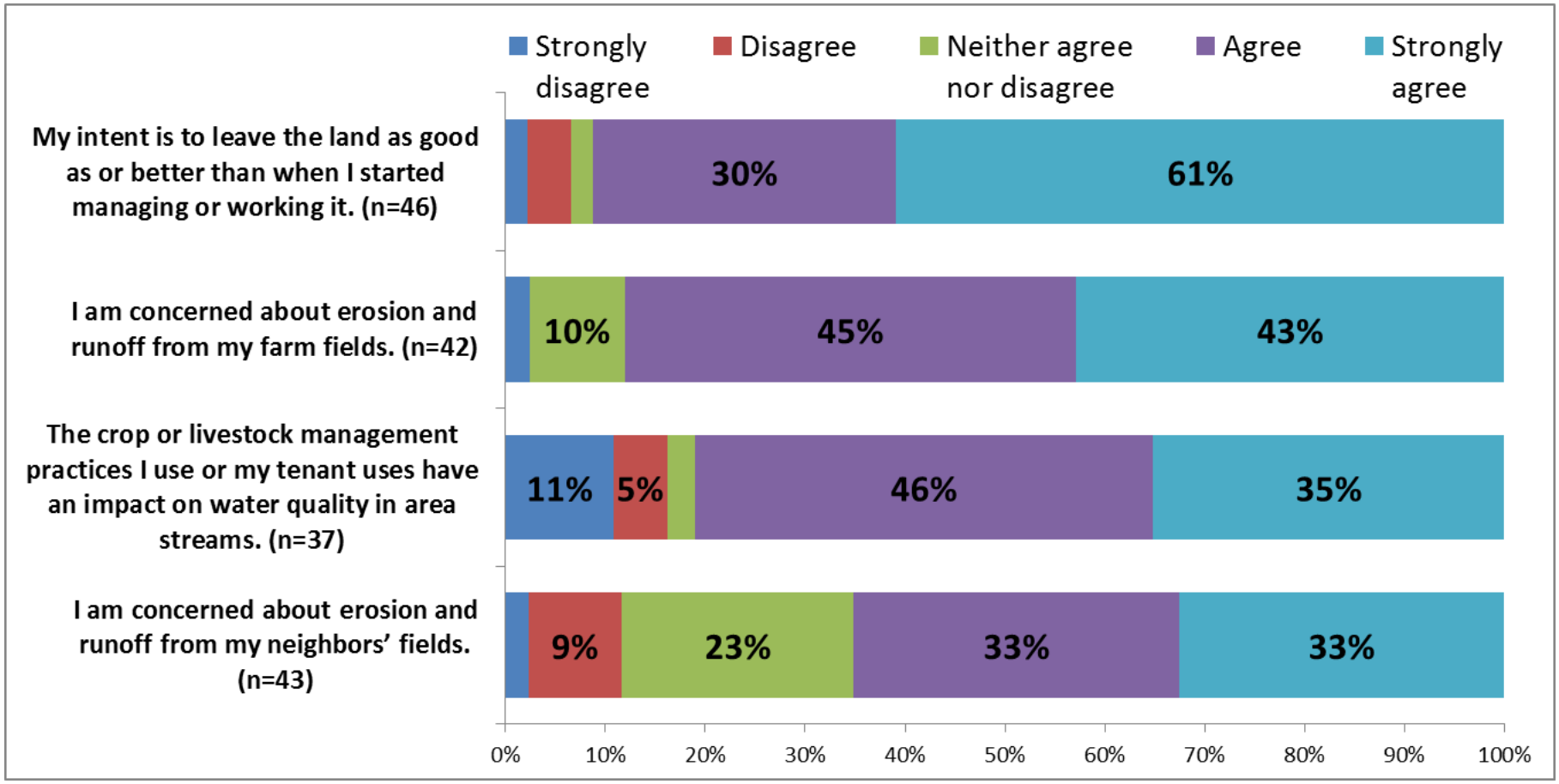
Residents recognized the relationship between their lawn care practices and the health of local streams, wanted to protect creeks and were willing to be part of that effort.



1 is completely disagree, 3 is neither disagree nor agree and 5 is completely agree.

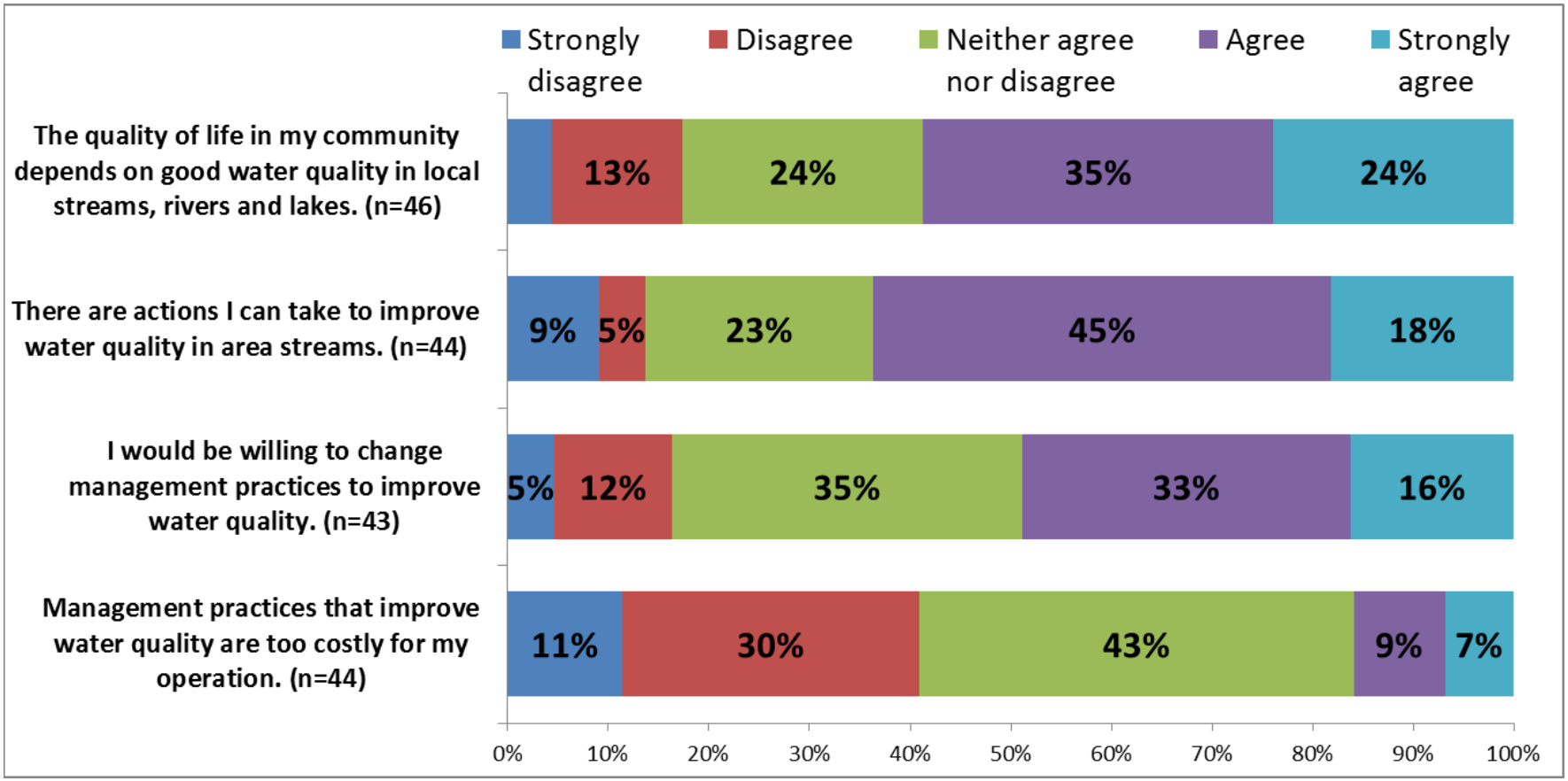
Key Findings – Beliefs and Values

Farmers wanted to leave the land healthy, recognized that their practices have an impact and voiced concern.



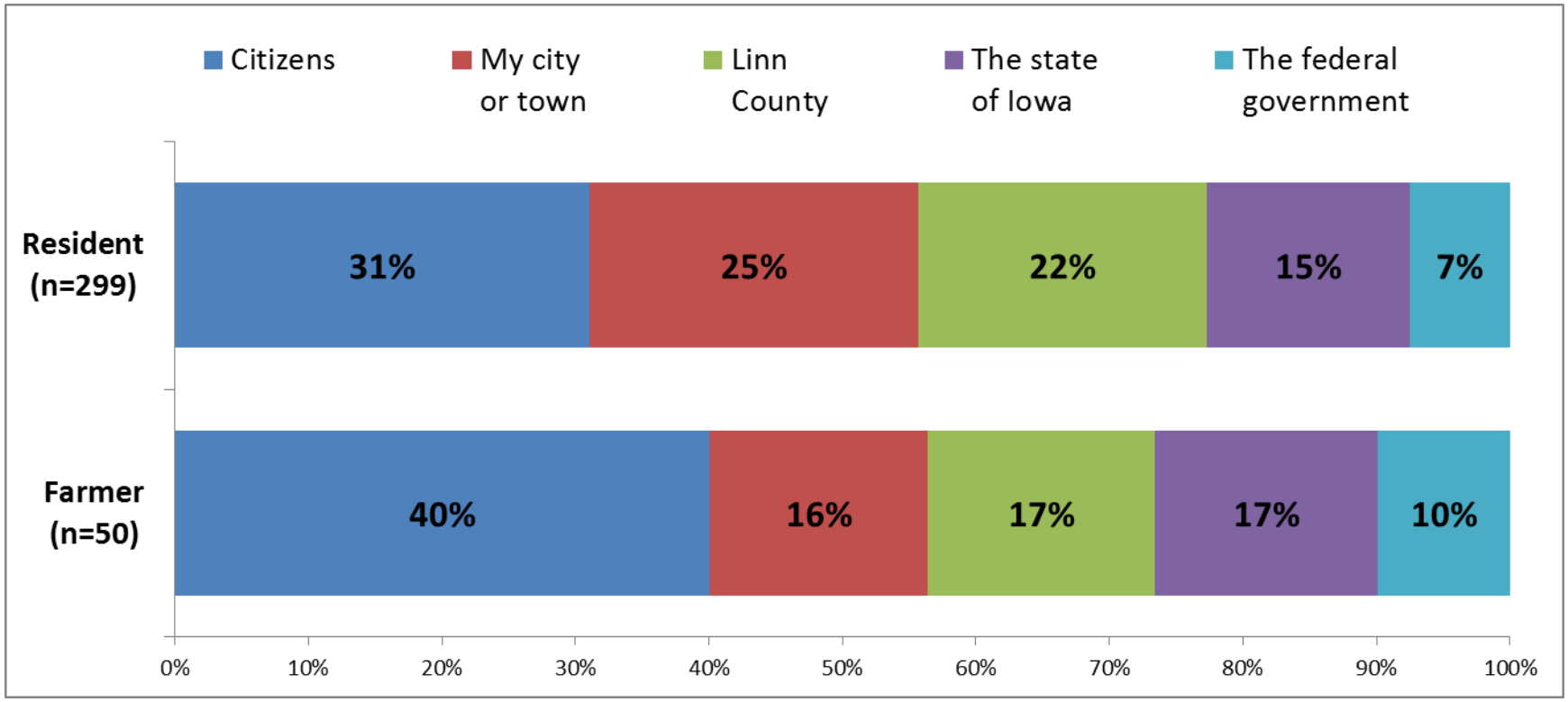
Key Findings – Beliefs and Values

The majority of Farmers reported that they believe they can make a difference, are willing to change and do not think improvements are too costly.



Key Findings – Beliefs and Values

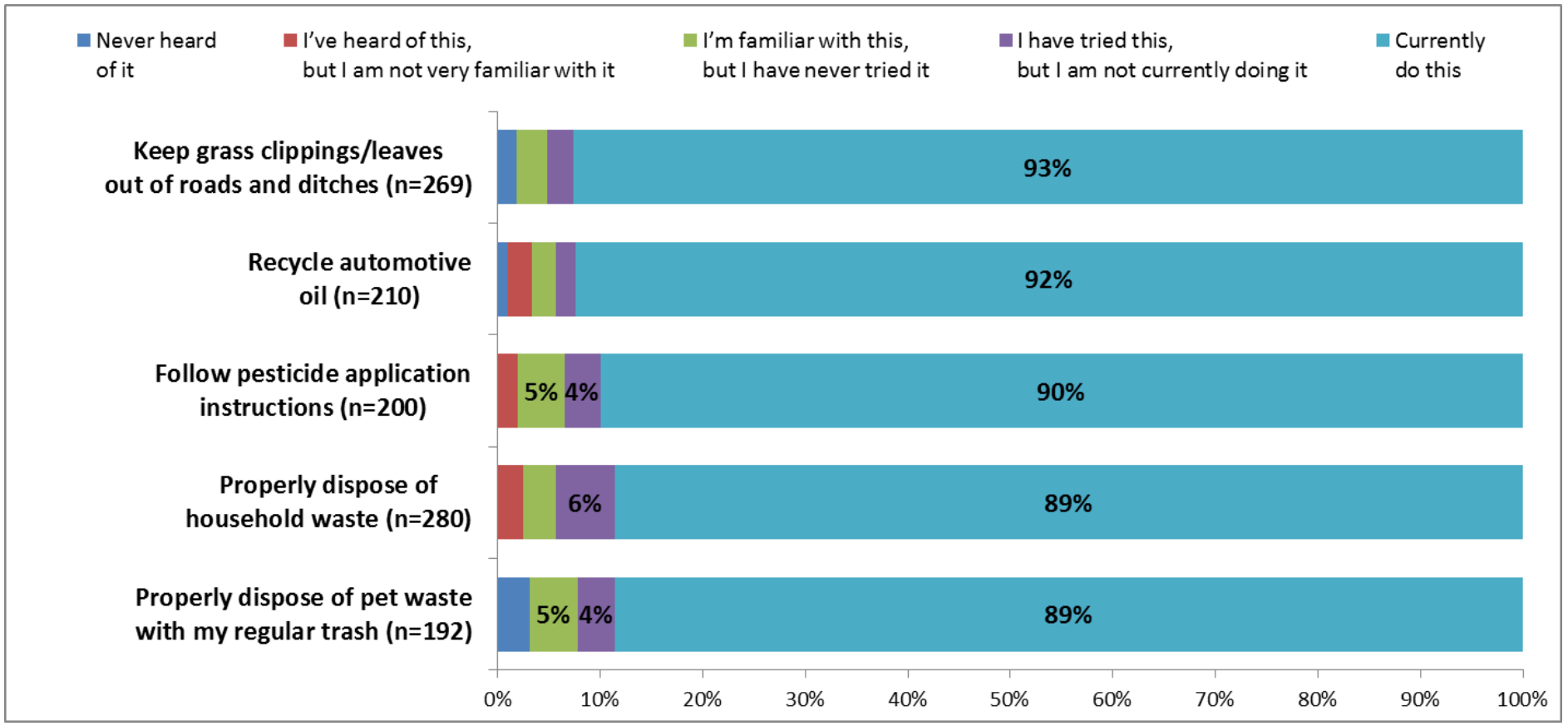
Both Residents and Farmers assigned responsibility for water quality to the people first, then local government.



How much of the responsibility to help protect local water quality lies with each of the following entities? Assign a percentage to each, with the total adding to 100%.

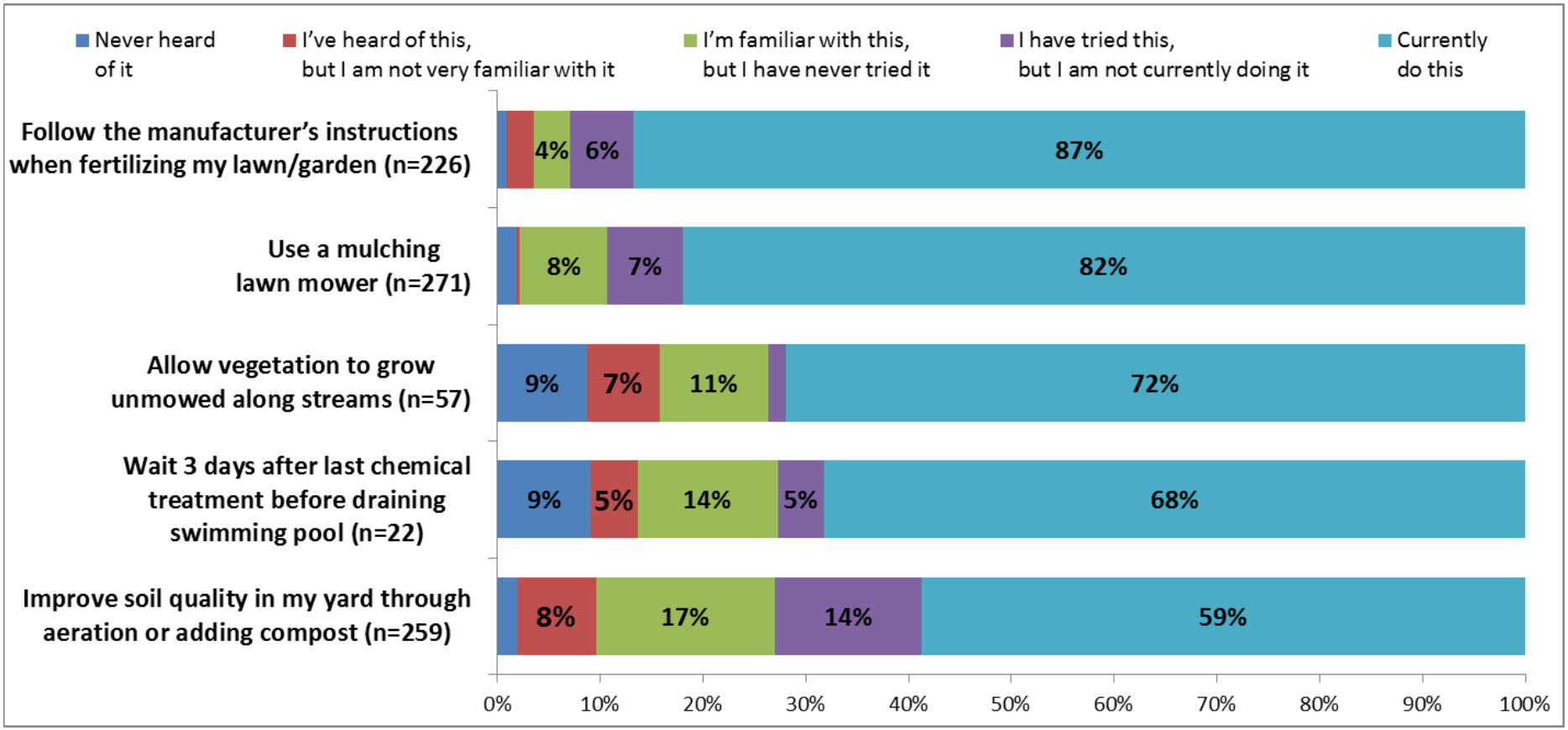
Key Findings – Practices (Residents)

Almost all Residents said they are following these helpful practices.



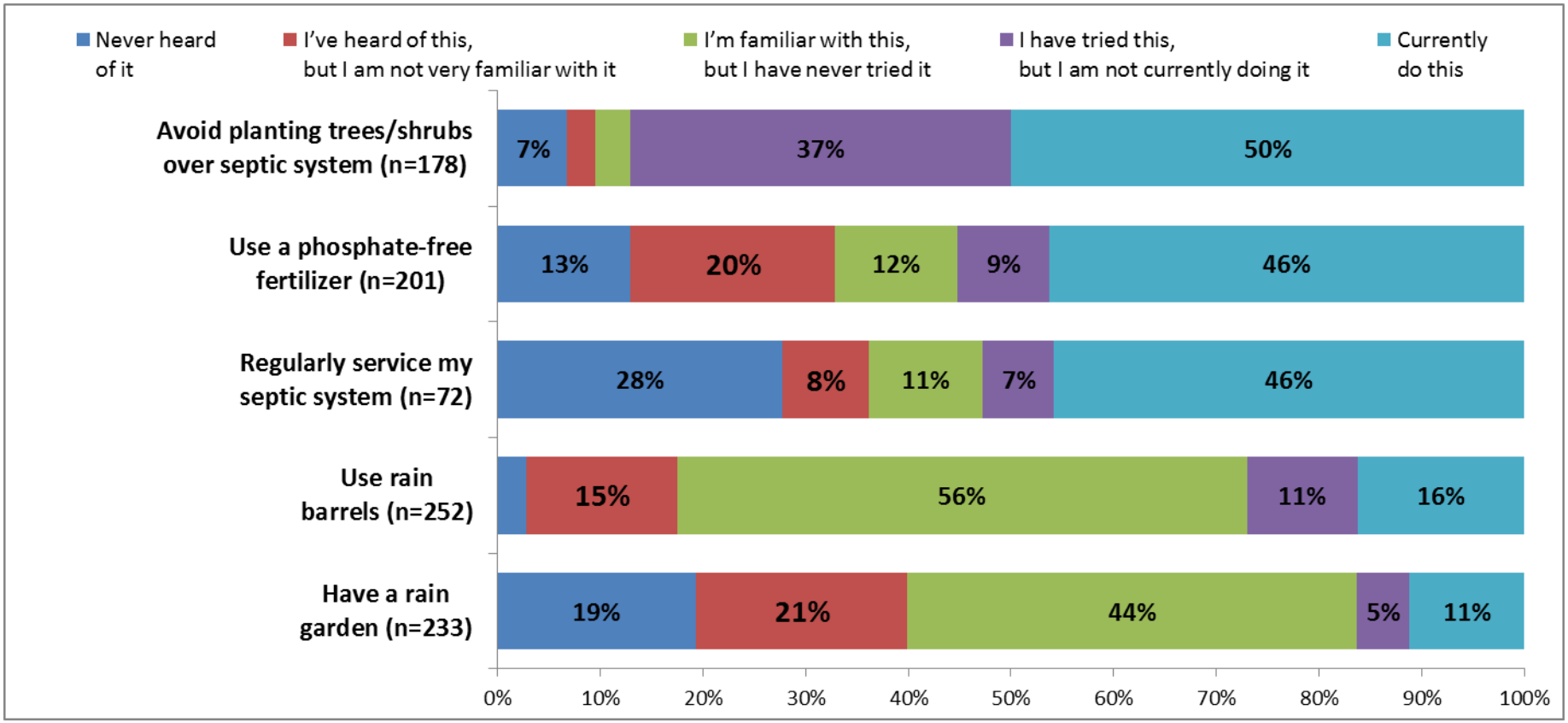
Key Findings – Practices (Residents)

These practices are also being followed by most Residents.



Key Findings – Practices (Residents)

Residents need more education on phosphate-free fertilizers, septic systems and rain barrels/gardens.



Key Findings – Practices (Farmers)

Farmers reported using many traditional and new practices that directly or indirectly contribute to the protection of water quality.

PRACTICE	I currently do this
Rotate crops (n=31)	90%
Grassed waterway (n=30)	90%
Follow university recommendations for fertilization rates (n=29)	90%
Consider location and soil characteristics to minimize leaching or runoff (n=28)	89%
Maintain the calibration of fertilizer application equipment (n=22)	86%
Use variable rate application technology (n=28)	86%
Conduct regular soil tests for pH, phosphorus, nitrogen and potassium (n=29)	83%
Use nitrification inhibitor (n=26)	81%

Key Findings – Practices (Farmers)

More than half of the Farmers in the sample said they use these practices as well.

PRACTICE	I currently do this
No-till (n=31)	74%
Buffers (n=26)	73%
Adjust crops or fertilization in high-risk areas of a field (e.g., sink holes, shallow soils over fractured bedrock) (n=18)	72%
Follow a comprehensive nutrient management plan (n=30)	70%
Use anti-backflow devices on hoses used for filling sprayer misters (n=20)	70%
Drainage management (n=30)	70%
Terraces (n=20)	70%
Avoid fall application of manure or nitrogen fertilizer (n=26)	69%
Stream bank stabilization (n=23)	57%
Timber stand improvements (n=17)	53%
Contour farming (n=21)	52%

Key Findings – Practices (Farmers)

One-third to one-half were engaging in these practices.

PRACTICE	I currently do this
Tile intake protection (n=27)	48%
Mulch-till (n=34)	44%
Wetland protection/restoration/construction (n=26)	42%
Integrated perennial crops and/or land retirement (CRP) (n=28)	39%
Sediment and water control basins (n=27)	38%
Use living mulch (such as Kura clover) (n=26)	35%
Extended rotations (such as 2 years of alfalfa in a 4- or 5-year rotation) (n=26)	35%

Key Findings – Practices (Farmers)

These practices have NOT been adopted by Farmers yet, although cover crops is nearing a third.

PRACTICE	I currently do this
Use cover crops (n=30)	30%
Long-term no-till (n=27)	26%
Herbaceous wind barriers (n=24)	21%
Cross-wind ridges, strip-cropping or trap strips (n=23)	17%
Bioreactors (n=26)	4%
Strip-till (n=27)	4%
Saturated buffers (n=27)	0%

Key Findings – Practices (Owners Leasing Land)

More than half of the Owners reported requiring or encouraging these practices with tenants.

PRACTICE	I encourage or require my tenant to use it
Grassed waterway (n=14)	71%
Rotate crops (n=12)	67%
Avoid fall application of manure or nitrogen fertilizer (n=12)	58%
Consider location and soil characteristics to minimize leaching or runoff (n=12)	58%

Key Findings – Practices (Owners Leasing Land)

31% to 50% of Owners said they require or encourage these practices with tenants.

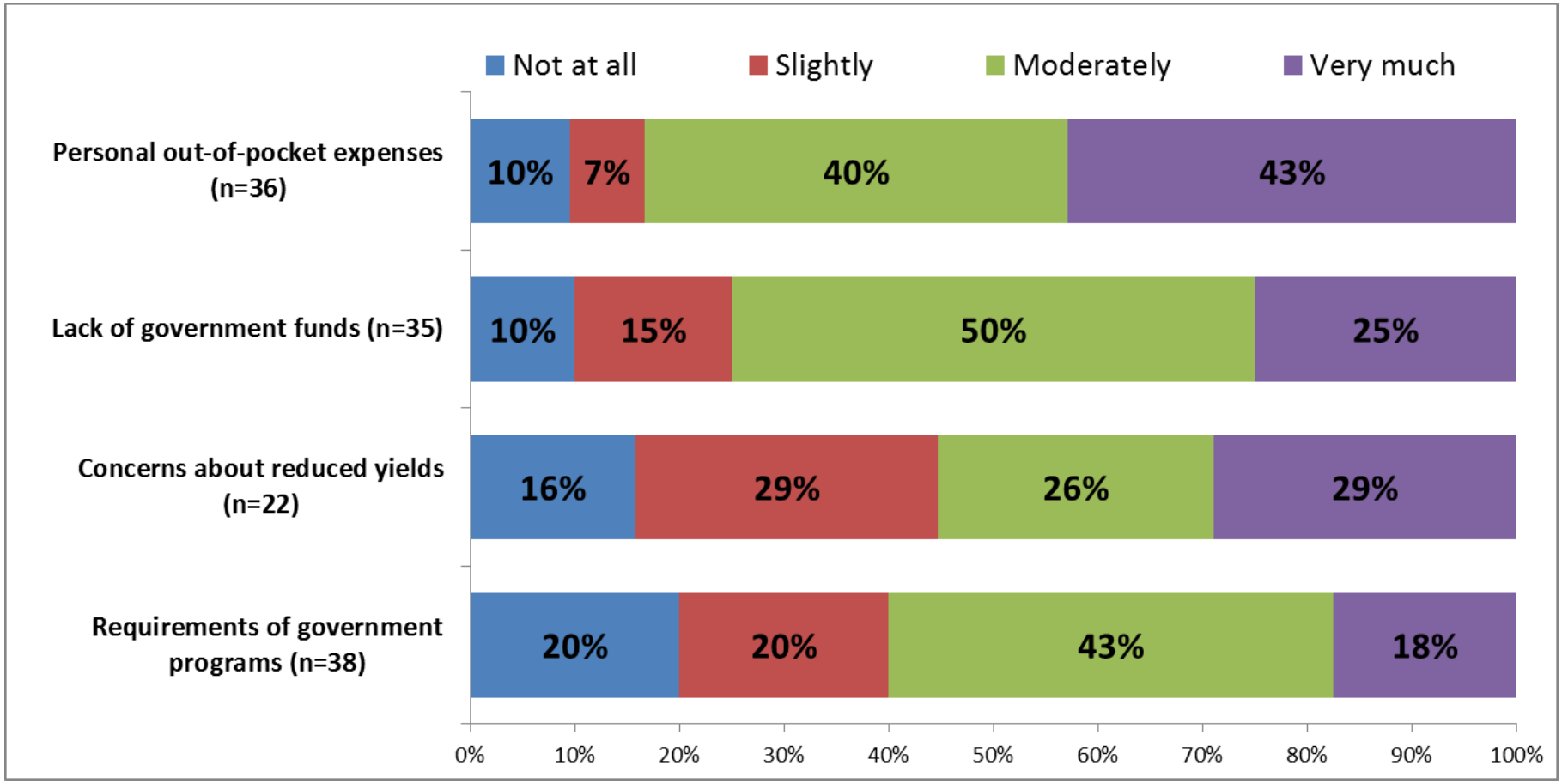
PRACTICE	I encourage or require my tenant to use it
Stream bank stabilization (n=8)	50%
Contour farming (n=10)	50%
Terraces (n=8)	50%
Follow a comprehensive nutrient management plan (n=12)	42%
Integrated perennial crops and/or land retirement (CRP) (n=12)	42%
Drainage management (n=12)	42%
Wetland protection/restoration/construction (n=10)	40%
Adjust crops or fertilization in high-risk areas of a field (e.g., sink holes, shallow soils over fractured bedrock) (n=13)	38%
Tile intake protection n=13)	31%

Key Findings – Practices (Owners Leasing Land)

The remaining 19 agricultural practices were being required or encouraged by less than 30% of Owners.

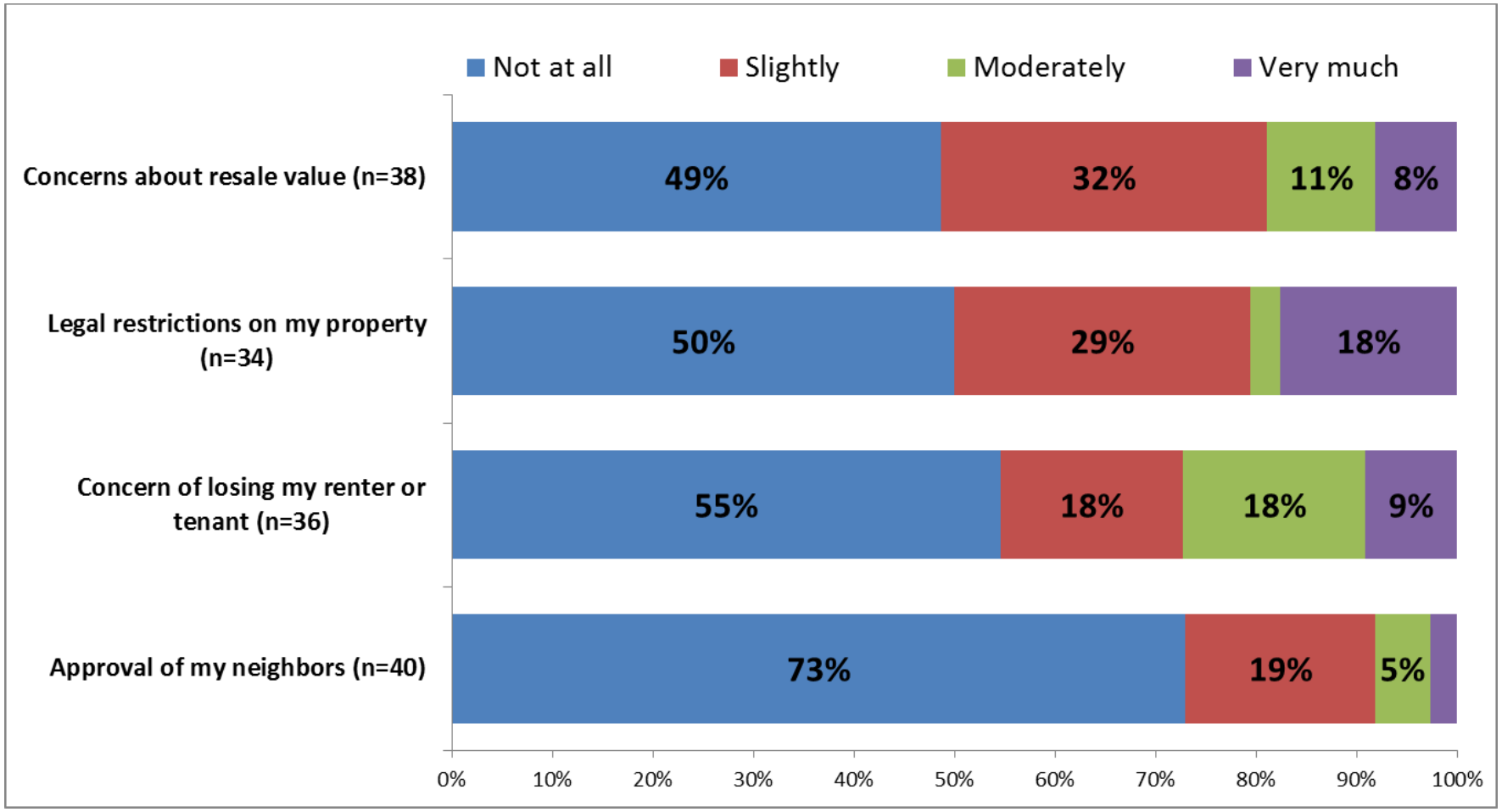
Key Findings – Barriers (Farmers and Landowners)

Although most Farmers did not agree that improvements are too costly for their operation, cost *is* the highest-rated barrier, followed by lack of government funds. These were the *top* four barriers.



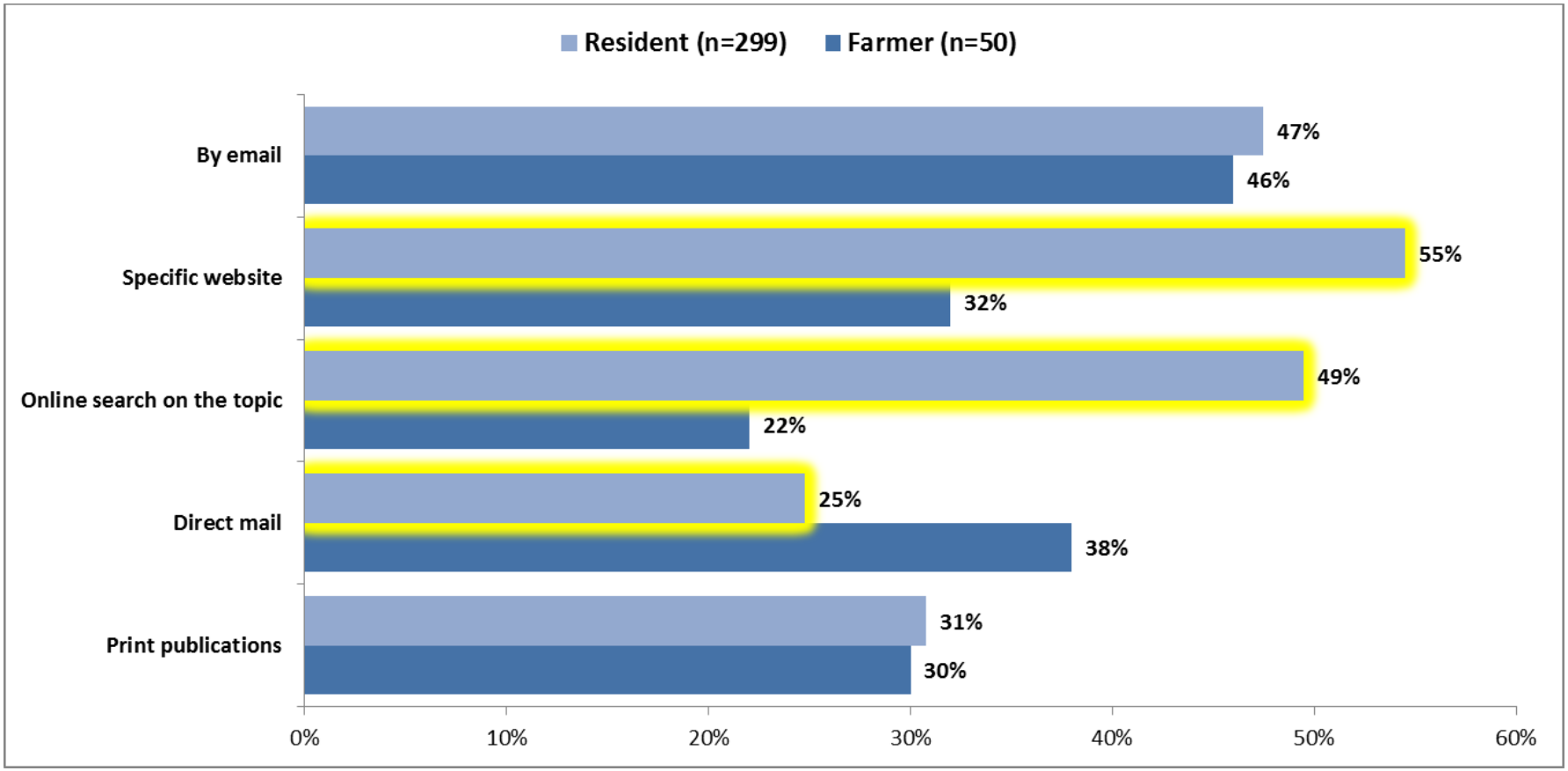
Key Findings – Barriers (Farmers and Landowners)

Farmers saw these issues as posing the *least* barriers to adopting helpful practices.



Key Findings – Communication Preferences

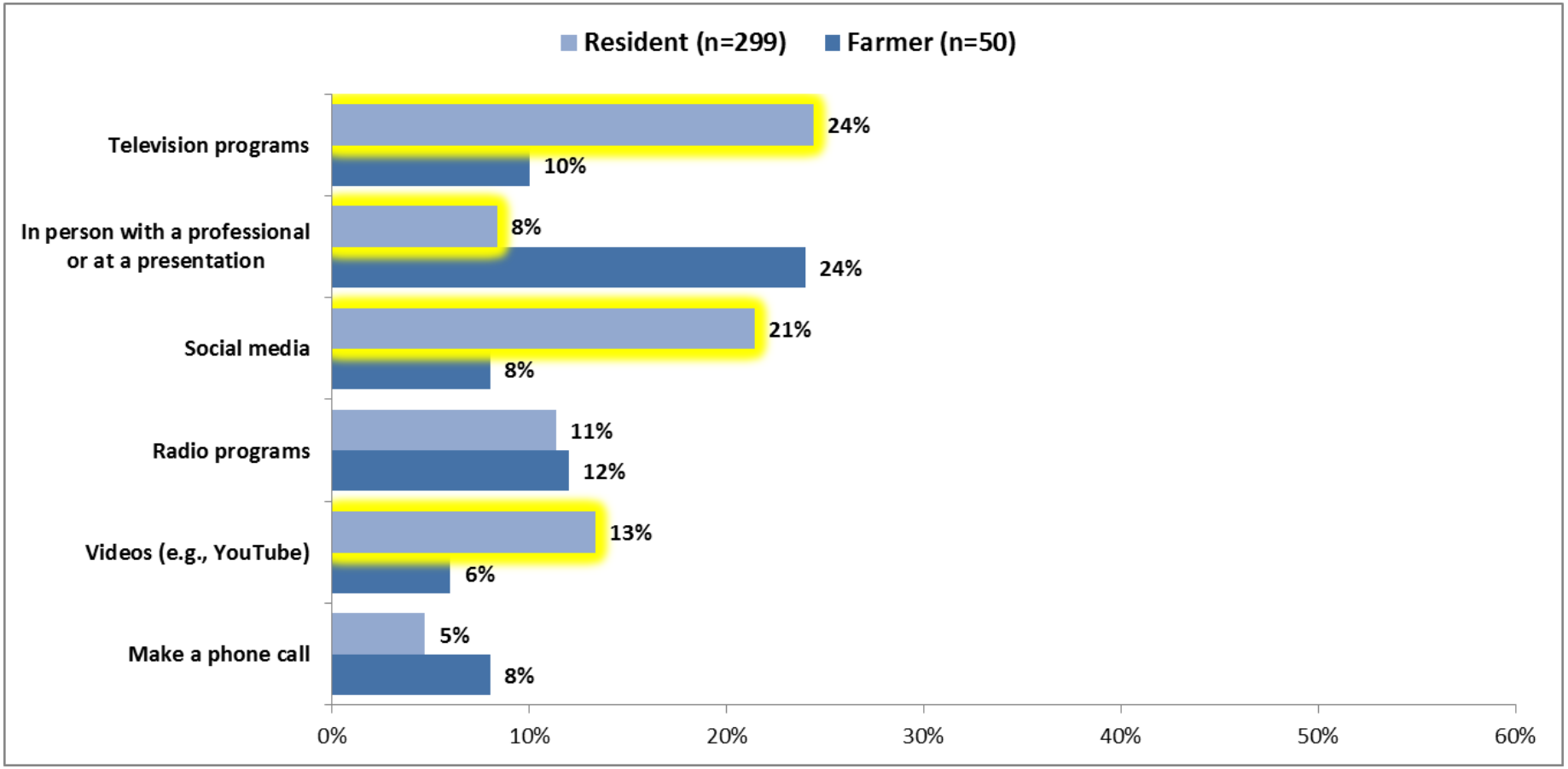
Email was a leading preference for all participants, while Residents also selected two other online resources and Farmers selected specific website and direct mail.



Could select as many as applied. Statistically significant differences highlighted.

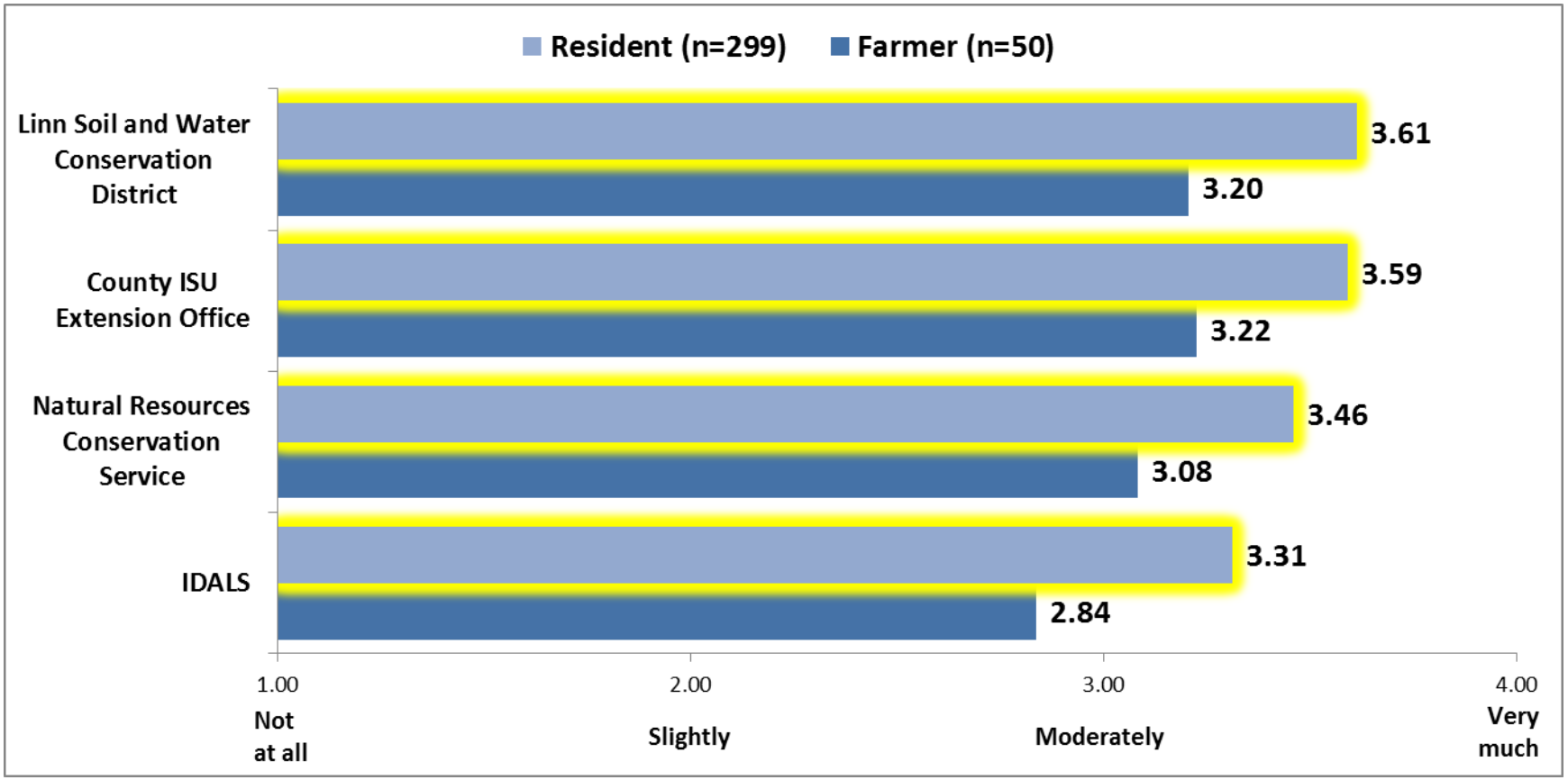
Key Findings – Communication Preferences

Some Residents preferred TV, video and social media, while some Farmers liked in-person presentations.



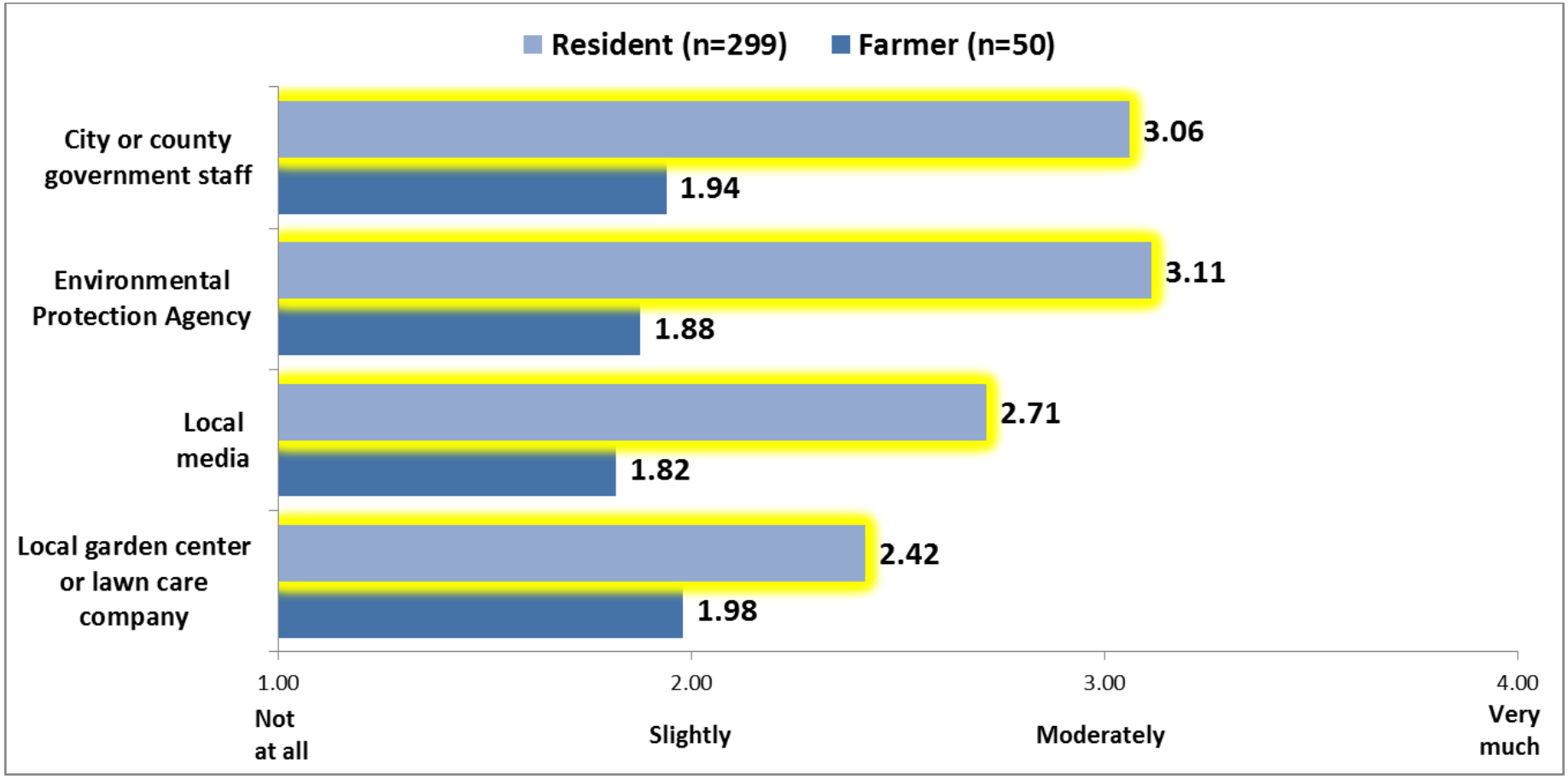
Key Findings – Communication Preferences

Who did participants say they trust? Overall, Residents were much more trusting of more organizations than Farmers. The top two most-trusted organizations were identical for both groups.



Key Findings – Communication Preferences

Farmers came close to not trusting these organizations, while Residents expressed moderate trust for three of them.



Key Findings – Communication Preferences

There were several other differences between Farmers and Residents in the degree of trust for various organizations. Examples of significant differences in ratings include:

Iowa DNR:	**Residents 3.50**	**Farmers 2.53**
Linn County Public Health:	**Residents 3.28**	**Farmers 2.27**
Non-profit organizations:	**Residents 3.17**	**Farmers 1.85**

Recommendations

Recommendations

Publicize & commend practitioners of helpful agricultural and urban landscape behaviors

- Reinforce continued use of positive practices by publicizing the high percentages of citizens and managers/owners of agricultural land who currently engage in them.
- Publicizing current usage rates will encourage some of those who are not practicing to start (peer/social acceptance effect) and will help educate those who are not familiar with any specific practice.
- Develop tactics that promote current practitioners, e.g., annual awards, monthly online profiles.

Recommendations

Emphasize that residents and farmers share many opinions and priorities and view urban issues as more problematic than farm practices

- The issues perceived by both groups as the most problematic for water quality (top 4) were urban issues.
- Both Residents and Farmers valued water quality and believed their practices make a difference.
- It is important to be aware, however, that overall the Farmers saw watershed water quality more positively than Residents and Residents rated several farm practices as more problematic than the Farmers did.

Address concerns about contact with creeks

- Looking at the usage and perceptions of the watershed streams, it appears that people hesitate to engage in activities that involve contact with the water, e.g., wading, fishing and boating.
- Identify problems and work on solutions. If there are no problems, or times of the year when there are no problems, use communication channels to inform the public and creek users.
- Consider special events or publicity tied to these types of activities (e.g., fishing, kayaking) to send the message that the water is safe.

Recommendations

Watershed programs will be most effective if they are more local in scope or origin – leverage local and trusted organizations

- Both Residents and Farmers believe the responsibility rests first with citizens and then local or county level agencies or government.
- The organizations that both Residents and Farmers trust most are:
  - Linn Soil and Water Conservation District
  - Linn County ISU Extension Office
  - Natural Resources Conversation Service (federal but not regulatory)

Recommendations

More education is needed regarding the role and health of fish in the watershed's creeks

- About 40% of Residents and 20% of Farmers lacked knowledge of these issues.
- Farmers and Residents did not see these issues as problematic - if they are, this message needs to be delivered.

Recommendations

Educational content targeting residents of the watershed should focus on septic system issues, phosphate-free fertilizers and rain harvesting (barrels, gardens)

- These practices have the lowest usage rates and higher unfamiliarity rates.

Recommendations

Education is needed on the problem of pet waste and its effects on watershed creeks

- Both Residents and Farmers rated this as the least problematic of all the contributing issues tested in the study.
- Both Residents and Farmers had low perceptions or low knowledge of biological creek problems that are impacted by pet waste.

Recommendations

Any practices that can be correlated with the prevention or mitigation of flooding should be emphasized in programs and communications

- Flooding was the only moderate to severe problem identified by both Residents and Farmers in the study. Even those people not affected directly by flooding are aware of it.

Recommendations

Improvements and amenities to trails, paths, picnicking and observation areas along the watershed will be utilized

- There is a high usage rate for these types of activities near watershed creeks and they are visited year-round.

Recommendations

Offering farmers and landowners monetary incentives or partial funding will boost participation in practices – remember to publicize existing programs and explain long-term ROI

- Out-of-pocket expenses and lack of government funding were the top barriers.

Recommendations

Communications plans targeting residents should emphasize web-based channels, supplemented by TV and direct mail

- Top information sources are email, specific websites and online search.
- Maximize search engine optimization and investigate online advertising for promotions.
- Share content and links across websites of watershed-related organizations and local/county government agencies or offices.
- Consider seasonal or special promotions via direct mail and/or TV. Pitch TV news stories and provide stock footage and experts for watershed-related stories.

Recommendations

Communications plans targeting farmers or owners of agricultural land should be multi-faceted, using email, websites, direct mail/print and in-person presentations

- Except for email, there is no major segment of Farmers that preferred any one media/source.
- Share content and links across websites that reach Farmers, emphasizing sites from the most trusted organizations.
- Identify existing opportunities for in-person presentations, e.g., field days, producer association meetings, co-op events.

Recommendations

Identify opportunities to partner with local and youth agricultural groups

- Education and improvement projects with 4-H and FFA (donating to these organizations was a popular incentive in our study).
- Education and improvement projects with local parks, churches, schools, etc.

Recommendations

Questions?

Public Outreach Focus Group
September 24, 2014

Summary of Responses & Input

Participants: A full list of attendees is included in this report. In general, the focus group participants represented city & county public works and planning staff; state level staff; agriculture interests; property owners; local college students; conservation interests; civic organizations; and development interests.

Focus group participants were asked respond to questions posed about the survey results. The whole group provided reactions and suggestions for the questions presented as summarized below.

Question 1: How should we best harness the belief that we all contribute to local water quality & flooding and that we all need to be part of the solution?

a. **Use PSAs developed by County Conservation Boards with the "we are in it together" campaign.**
b. **Utilize the "you pick two" idea for implementing practices from the Nutrient Reduction Strategy or a list of urban BMPs.**
c. **Convey the true water quality issues in our watershed and tie each to practices for improvement.**

AND

Question 2: Assuming the Plan identifies practices based on both the watershed assessment and the survey results, how do we encourage those practices to those best able to use the information?

Responses:

- Nature is interdependent and we need to mimic nature in practices
- Partner with other groups such as Resilient America Roundtable
- Get the media to be involved to tell on-going stories about conservation
- More field days, tours and opportunities to bring people together
- Don't have all activities during the work day
- How to get people's attention? Tie actions to results / tie practices to flood mitigation
- How to slow down the water? "You Pick Two" or Blue Zones approach
- Work through neighborhood associations
- Leverage the Nutrient Reduction Strategy to identify the practices that are most effective
- Educational programs: formal education may be difficult due to aligning with Iowa Core, but summer camps or parks programs could be an opportunity
- Information distributed through utility / water bills

Question 3: How should we structure a program(s) to recognize those implementing positive practices in the watershed?

Responses:

- SWCD Commissioners are working on a program – "Conservation Farmer"
- Do something similar for urban: a sticker or certification or sign, "Friend of the Indian Creek watershed"
- Utilize traditional media (Gazette), social media (Facebook) and groups (Farm Bureau) to promote; use local pictures of rain gardens to show attractiveness
- Leverage Gazette and KCRG's A-List
- Rain garden that a city put in had minimal media attention; encourage early adopters to be educators
- Consider a program where cities would reduce stormwater utility rates for runoff reduction or help pay for practices

Question 4: Increasing recreation opportunities was one of the original priorities for participation in the Indian Creek Watershed Management Authority. Given the infrequent use of the creeks for activities involving contact with the water, is this an issue that we need to address? Should we be promoting use of the creek that way?

AND

Question 5: Contamination from pet/animal/human waste was viewed as the least problematic. However, Dry & Indian creeks are on the Impaired Waters List for bacteria. Since we do not know the source from our data is this an issue to convey to the public and if so, how?

Responses:

- Bacteria Source Tracking – provide funding to better understand the scope of the problem
- Don't misconstrue opinion with fact
- Push for a TMDL to be developed for the watershed
- Need signs and bags in parks to educate about pet waste clean-up
- Keep it simple for the public – ask people to do <u>something</u> now!
- Assign timelines- show how we will meet goals

Question 6: The number of landowners that require or encourage practices is a good start. How do we increase that number?

Responses:

- Good science in the Nutrient Reduction Strategy so promote those practices
- Promote conservation lease: provide framework / example lease that landowners can adopt or modify