

2022 National Agroforestry Survey Questionnaire Training

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January 4, 2022

Presentation Summary

- ▶ Brief background on agroforestry
- ▶ Brief background on questionnaire development
- ▶ The Interviewers Manual also contains valuable information and definitions for a few of the terms found in the questionnaire

What is Agroforestry?

- ▶ Agroforestry is the intentional combination of agriculture and forestry to create productive and sustainable land use practices. These practices take advantage of the interactive benefits from growing trees and shrubs together with crops and/or livestock.
- ▶ The five most common agroforestry practices in the U.S. are:
 - ▶ Windbreaks/shelterbelts/hedgerows
 - ▶ Silvopasture
 - ▶ Riparian forest buffers
 - ▶ Alley cropping / intercropping
 - ▶ Forest farming / multi-story cropping

Introductory Page

NATIONAL AGROFORESTRY SURVEY 2022

OMB No. 0535-0271
Approval Expires: 10/31/2024
Project Code: 944
SurveyId: 9032



United States
Department of
Agriculture



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- ▶ One important note on the introductory page is highlighted in yellow. The estimated average time of 50 minutes assumes that a producer will have all 5 agroforestry practices on their operation. Research has shown that <1% of producers with agroforestry have all 5 practices.
- ▶ The average time requirement is likely much less. This will be very important to convey to respondents.

Screenener

Screenener

1. In the past 12 months, did this operation:

a. Raise or sell any livestock (possible examples include cattle, hogs, sheep, goats, equine, poultry, bees, etc.)?

0001
1 ☐ Yes 3 ☐ No

b. Own and/or operate cropland, pastureland, woodland, rangeland, or other land with agricultural or forestry activities?

0002
1 ☐ Yes 3 ☐ No

c. Receive any Federal or state agricultural payments and/or participated in a Federal or state agricultural program?

0003
1 ☐ Yes 3 ☐ No

d. Did you answer **Yes** to any of the questions above?

0004
1 ☐ Yes - Continue 3 ☐ No - Go to Section 6, page 22

- ▶ The goal of the Screenener is to ensure we are surveying producers.
- ▶ Selection (b) may also include respondents with forestry operations. This is ok, since those practicing forest farming may identify more with forestry than agricultural activities.

Section 1: Windbreaks, Shelterbelts and Hedgerows



Field windbreak protecting corn in Nebraska
(USDA NAC 2020)



Livestock windbreak protecting bees in
North Dakota (USDA NAC 2016)



Field windbreak protecting blueberries in
Maine (USDA NAC 2021)



Livestock windbreak protecting cattle in Colorado
(USDA NAC 2012)

Windbreak Screener

Section 1 - Windbreaks, Shelterbelts and Hedgerows

Windbreaks, Shelterbelts and Hedgerows are rows of trees and shrubs that are used to create a more favorable environment for soils, crops, livestock, wildlife, and people. In some cases, they are designed to slow wind, while other times they are designed for visual screening, snow management, odor control, shade for livestock/buildings/people, enhancing pollination, field/property borders, etc.

Does this operation have any land in **windbreaks, shelterbelts or hedgerows**?

¹⁰⁰⁰
1 ☐ Yes - Continue

3 ☐ No - Go to Section 2, page 6

- There may be a situation where a respondent asks about Vegetated Environmental Buffers. These are a type of livestock windbreak, used to control odors from livestock operations (often poultry and swine). If this term comes up, then they should select Yes and complete Section 1.

Windbreak Section – Q1

1. Does this operation utilize any of the following types of windbreak, shelterbelt and/or hedgerow? Check all that apply

- 1001 ☐ **Farmstead** - for use around buildings (shade, energy savings, etc.)
- 1002 ☐ **Field** - for use in protecting crops (field, orchards, etc.)
- 1003 ☐ **Livestock** - for use in protecting livestock and/or odor control
- 1004 ☐ **Boundary** - primarily used for enclosing or separating fields
- 1005 ☐ **Living snow fence** - specifically designed for snow management
- 1006 ☐ **Hedgerow** - primarily used for natural resource conservation purposes
- 1007 ☐ **Other** - Specify: 1008 _____

- ▶ It is very likely that respondents will report having multiple windbreak types.
- ▶ The questionnaire does not specify windbreak condition (partial, full, etc.). A respondent may ask about this. Feel free to say – *if it is present on your operation, it counts regardless of condition.*

Windbreak Section – Q2

2. Were any of the following activities used to establish windbreaks, shelterbelts, and/or hedgerows on this operation?

Establishment Activities		YES	NO	DON'T KNOW
Hand planted tree seedlings	1009	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Mechanically planted tree seedlings	1010	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used herbicides for weed control/site preparation prior to planting	1011	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used cultivation for weed control/site preparation prior to planting	1012	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used barrier weed control (mulch, plastic, etc.) to establish trees	1013	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigated trees during the 1-3 year establishment period	1014	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Controlled weeds after planting trees during the 1-3 year establishment period ..	1015	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed fencing and/or tree tubes to protect trees from wildlife/livestock	1016	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanted seedlings to fill gaps	1017	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Established windbreak without planting by allowing trees to grow naturally.....	1018	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other establishment activities - Specify: ¹⁰¹⁹ _____				

- Do not be surprised if respondents say yes to all or most of these.
- It is also likely that a respondent will say that they used some activities on one or several of their windbreaks and not on others. That is ok. The question is simply asking respondents what activities they used on any of their windbreaks.
- There may also be a situation where respondents select “Don’t Know” for many or all these choices. Many windbreaks were established decades ago (in some cases back to the 1930’s), so respondents may not know what establishment activities took place or when.

Windbreak Section – Q3

3. When were windbreaks, shelterbelts, and/or hedgerows established on this operation? Check all that apply

1029 <input type="checkbox"/>	Less than 5 years ago	1132 <input type="checkbox"/>	15 years or more
1130 <input type="checkbox"/>	5 years - less than 10 years ago	1133 <input type="checkbox"/>	Don't Know
1131 <input type="checkbox"/>	10 years - less than 15 years ago		

- ▶ Because of changes in land ownership and the perennial nature of agroforestry systems, there could be a situation where a respondent selects one or several of the time series choices (i.e., 5 years – less than 10 years ago) and “Don’t Know” at the same time. One example of how this may occur is if the respondent purchased the land with existing windbreaks and are unaware of when they were established yet have added new windbreaks to their operation since acquiring the land.

Windbreak Section – Q4

One of the choices “Flash or short duration grazing within windbreaks” may cause some respondents to pause, since this practice is strongly discouraged in some states, while not in others.

If a respondent asks about root pruning, that is the practice of cutting lateral roots from windbreak trees and shrubs to reduce competition with adjacent crops.

4. Have any of the following activities occurred, or will occur, to manage/maintain the windbreaks, shelterbelts, and/or hedgerows on this operation?

Management/Maintenance Activities		YES	NO	DON'T KNOW
Cultivation for weed control (disking, plowing, mowing, etc.)	1021	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Herbicide for weed control	1022	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Barrier weed control (mulching/fabric)	1023	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Flash or short duration grazing within windbreaks	1024	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree branches and stems	1025	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting trees/windbreak vegetation	1026	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of living or dead trees (thinning)	1027	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigation of trees	1028	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fertilization and/or soil amendments for the trees	1029	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Root pruning	1030	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fencing or tree tubes to protect trees from wildlife/livestock.....	1031	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other management activities - Specify: ¹⁰³² _____				

Windbreak Section – Q5

5. Of the crops/products originating from windbreak trees and shrubs listed below, please specify whether this operation has:

- ▶ sold this before
- ▶ plan to sell this in the future
- ▶ use this for personal or on-farm use

Crops, Products and Resources from Windbreak, Shelterbelt, and/or Hedgerow Trees and Shrubs

	Check all that apply		
	Sold this before	Plan to sell this in the future	Use this for personal or on-farm use
a. Firewood	1033 <input type="checkbox"/>	1034 <input type="checkbox"/>	1035 <input type="checkbox"/>
b. Trees for timber products (lumber, boards, veneer, utility poles, etc.)	1036 <input type="checkbox"/>	1037 <input type="checkbox"/>	1038 <input type="checkbox"/>
c. Trees for non-timber products (pulp, fence posts, woodchips, etc.)	1039 <input type="checkbox"/>	1040 <input type="checkbox"/>	1041 <input type="checkbox"/>
d. Forages/hay/fodder for livestock	1042 <input type="checkbox"/>	1043 <input type="checkbox"/>	1044 <input type="checkbox"/>
e. Edibles (raspberries, walnuts, maple syrup, etc.)			
Specify products: 1045	1046 <input type="checkbox"/>	1047 <input type="checkbox"/>	1048 <input type="checkbox"/>
f. Medicinal plants and herbs (American ginseng, goldenseal, etc.)			
Specify products: 1049	1050 <input type="checkbox"/>	1051 <input type="checkbox"/>	1052 <input type="checkbox"/>
g. Decorative plants and/or materials for landscaping			
Specify products: 1053	1054 <input type="checkbox"/>	1055 <input type="checkbox"/>	1056 <input type="checkbox"/>
h. Other crops/products - Specify: 1057	1058 <input type="checkbox"/>	1059 <input type="checkbox"/>	1060 <input type="checkbox"/>

- ▶ This question only asks about whether one of the three specified actions has occurred (i.e., sold, plans to sell, or use for personal on-farm use) and not the frequency of that activity.
 - ▶ A respondent may ask a clarifying question related to this. One appropriate response would be to say that if the action has occurred (even once) then check the box(s).
- ▶ Respondents may also ask about what qualifies as personal or on-farm use. This could include using or consuming the product, giving it to a friend, neighbor or family member, etc. This column encompasses all uses of the crop, product or resource from the windbreak, shelterbelt and/or hedgerow without the transfer of money.

Windbreak Section – Q6

6. In the next five years, will the acreage of trees and shrubs in windbreaks, shelterbelts, and/or hedgerows for this operation increase, decrease or stay the same? Check one

1061

1 ☐

Increase - Specify reason(s):

1062

2 ☐

Decrease - Specify reason(s):

1063

3 ☐

Stay the same

4 ☐

Don't Know

7. Do windbreaks, shelterbelts, and/or hedgerows provide any of the following benefits to this operation?

Number	Conservation Benefits	YES	NO	DONT KNOW
1	Improved erosion control 1064	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Improved soil health 1065	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	Habitat for pollinators and other beneficial insects 1066	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Wildlife habitat 1067	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Improved water quality 1068	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Improved nutrient management 1069	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Chemical drift mitigation (pesticide, herbicide, fertilizer) 1070	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Dust mitigation 1071	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Increased carbon storage in soils, trees, and vegetation 1072	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Economic Benefits				
10	Increased crop production/yield 1073	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Improved crop quality 1074	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Income from windbreak trees/shrubs (firewood, timber, nuts, etc.) 1075	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Crops/products for on-farm or personal use from windbreak trees/shrubs (firewood, timber, nuts, etc.) 1076	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Improved welfare of livestock 1077	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Increased livestock production 1078	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Snow management 1079	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Protection of farm buildings, home, and other structures 1080	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Income diversification from multiple crops/products 1081	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Farmstead energy conservation 1082	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
20	Increased crop water use efficiency and/or irrigation efficiency 1083	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Revenue from hunting leases 1084	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Reduced spread of tree diseases (canker, citrus greening, etc.) 1085	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Improvement of marginal or unfarmable land 1086	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Increased land value 1087	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
25	Revenue from conservation payments 1088	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
26	Improved resilience to weather extremes (drought, flood, etc.) 1089	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other Benefits				
27	Improved working or living environment from less intense wind 1090	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
28	Aesthetics/scenic beauty 1091	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
29	Privacy/visual screening 1092	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
30	Hunting 1093	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
31	Recreation (other than hunting) 1094	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
32	Odor reduction 1095	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
33	Noise reduction 1096	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
34	Other benefit(s) - Specify: 1097			

Windbreak Section – Q7

- ▶ The “benefits” question is the longest and possibly most time consuming per section.
- ▶ Do not be surprised if a respondent selects Yes for a majority (or all) of the choices.

Windbreak Section – Q8

8. Of the windbreak, shelterbelt, and/or hedgerow benefits listed above (1 - 34), which 3 are most important to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
1098	1099	1100
____	____	____

- ▶ This type of follow up question is found in all 5 Practice sections of the questionnaire and will likely be the most time consuming and complicated for respondents to answer if they do not have the questionnaire in front of them. I would strongly encourage you to have the respondent have the questionnaire in front of them.
- ▶ Best strategy may be to re-read which benefits they said **Yes** to and have them select the three benefits most important to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 benefits are most important initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 benefits (i.e., 1st, 2nd, 3rd).

9. Have any of the following been challenges on this operation when establishing or managing windbreaks, shelterbelts, and/or hedgerows?

Number	Potential Challenges	YES	NO	DON'T KNOW
1	Lack of information about establishment 1101	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Difficulty establishing trees/shrubs 1102	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	High startup costs 1103	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Lack of information on management and maintenance 1104	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Difficulty regrowing trees within an established windbreak 1105	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Expense of maintenance 1106	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Lack of information on recommended tree/shrub species 1107	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Lack of knowledge among technical assistance providers 1108	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Lack of examples or demonstration sites 1109	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Lack of financial assistance 1110	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Lack of markets for products from windbreak 1111	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Loss of cropland 1112	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Harbors harmful crop pests (wildlife, insects, weeds, etc.) 1113	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Conflict with farm equipment, practices, or layout 1114	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Trees and crops compete for space, light, water, and nutrients 1115	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Livestock damage to trees 1116	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Wildlife damage to trees 1117	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Tree/shrub pests and diseases 1118	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Herbicide damaging trees/shrubs 1119	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
20	Snow drift issues 1120	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Adds labor and complexity to management 1121	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Other challenge(s) - Specify: 1122 _____			

Windbreak Section – Q9

- ▶ For the “challenge” question, it is particularly important to inquire about whether they have experienced other challenges not mentioned in the question.
- ▶ I would recommend asking “are there other challenges you have experienced that were not mentioned in this question”

Windbreak Section – Q10

10. Of the challenges listed above (1 - 22), which 3 are most significant to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
1123 ____	1124 ____	1125 ____

- ▶ This type of follow up question is found in all 5 Practice sections of the questionnaire and will likely be the most time consuming and complicated for respondents to answer if they do not have the questionnaire in front of them. I would strongly encourage you to have the respondent have the questionnaire in front of them.
- ▶ Best strategy may be to re-read which challenges they said **Yes** to and have them select the three challenges most significant to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 challenges are most significant initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 challenges (i.e., 1st, 2nd, 3rd)

Windbreak Section Q11

11. Please estimate the total land area in windbreak, shelterbelt and/or hedgerow for this operation.
Include all windbreak types.

INCLUDE: Estimate as acres **OR** length and width

- ▶ land owned
- ▶ rented
- ▶ leased from others

	ACRES	
a. Total acres of windbreak.....	1126	
OR		
	FEET	MILES
b. Average width of windbreaks.....	1127	
	AND	
	total combined length of windbreaks rounded to the nearest 1/4 mile	1128 · ____

- ▶ Do not be surprised if respondents are unsure of the exact acreage and say that they are only providing a best guess. That is ok.

Section 2 - Silvopasture



Cattle in a hardwood silvopasture in New York
(Photos by Brett Chedzoy – Angus Glen Farm)



Equine silvopasture
(Photo: Adobe Stock)



Sheep resting in a black locust/black walnut
silvopasture system at Virginia Tech's Kentland
Research Farm
(Photo by John Munsell)

Silvopasture Screener

Section 2 - Silvopasture

Grazing livestock on a site with trees is considered **silvopasture** if all three components of the system (livestock, trees, and forage) are deliberately integrated and managed. Some examples of silvopasture include:

- ▶ woodland, forest, or forest edge that is managed to produce forage, livestock and trees simultaneously
- ▶ grazing land where trees were added to pasture
- ▶ orchards where livestock are integrated
- ▶ grazing natural savannas

Does this operation have any land in **silvopasture**?

²⁰⁰⁰₁ ☐ Yes - Continue

₃ ☐ No - Go to Section 3, page 11



Cattle in a hardwood **silvopasture** in New York
(Photo by Brett Chedzoy – Angus Glen Farm)



Cattle grazing in a forest with no
forage management
Not silvopasture
(Photo: Adobe Stock)



Cattle bunched around a single tree in
a pasture in Wyoming
Not silvopasture
(Photo by Matt Smith: USDA NAC 2021)

Silvopasture Section – Q1

	Silvopasture Acres
1. How many acres of land does this operation have in silvopasture? INCLUDE: land owned, rented, and leased from others	2001

2. Were any of the following activities used to establish silvopasture(s) on this operation?

Establishment Activities	YES	NO	DON'T KNOW
Converted a pasture or field to silvopasture by planting trees 2002	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an existing tree plantation to silvopasture by removing some trees and incorporating livestock and forage..... 2003	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an existing forest, woodlot, or forested edge to silvopasture by removing some trees and incorporating livestock and forage 2004	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted from a natural savanna to silvopasture by adding livestock 2005	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted a former field or pasture to silvopasture over time by allowing trees to grow naturally 2006	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an orchard to silvopasture by incorporating livestock 2007	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other conversion strategy - Specify: 2008 _____			
Site Preparation and Infrastructure Activities			
Removed stumps (grinding, grubbing, shearing, etc.) 2009	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Cleared debris (slash, downed trees, rocks, etc.) 2010	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used cultivation for site preparation (disking, scarification, etc.) 2011	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used herbicides prior to or during establishment 2012	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used livestock to assist with establishment 2013	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used prescribed fire prior to establishment 2014	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used fertilizer and/or soil amendments to assist with establishment 2015	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Seeded forages - Specify species: 2016 _____	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Allowed natural regeneration of forages 2018	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used fencing and/or tree tubes to protect trees from wildlife/livestock 2019	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed or improved livestock watering system 2020	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed fence infrastructure (boundary fencing, cross fencing, etc.) 2021	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other establishment activities - Specify: 2022 _____			

Silvopasture Section – Q2

- There may be a situation where a respondent says they conducted some of these activities on a portion of their silvopasture system but not on the rest (or they have multiple systems and conducted different establishment activities on each). That is ok. The question is simply asking respondents what activities they used on any of their silvopastures.

Silvopasture Section – Q3

3. Please check the box for the type of livestock utilizing the silvopasture(s) on this operation. Also, please specify the average stocking rate of those livestock as animals/acre OR animal units/acre.

Type of Livestock (Mark all that apply)		Animals/Acre		AnimalUnits/Acre
2023	<input type="checkbox"/> Cattle.....	2024	OR	2025
2026	<input type="checkbox"/> Chickens	2027	OR	2028
2029	<input type="checkbox"/> Sheep	2030	OR	2031
2032	<input type="checkbox"/> Goats	2033	OR	2034
2035	<input type="checkbox"/> Hogs and Pigs	2036	OR	2037
2038	<input type="checkbox"/> Horses	2039	OR	2040
2041	<input type="checkbox"/> Other - Specify: 2042_____	2043	OR	2044

- ▶ If a respondent has trouble with this question, simply ask them how many livestock use the silvopasture. Animals/acre can then be calculated afterward by looking at the response from Q1.
- ▶ Respondents may say that animals/acre or animal units/acre varies year to year. Remind the respondent that the question is asking about the “average”

Silvopasture Section – Q4

4. Of the crops/products originating from silvopasture listed below, please specify whether this operation has:

► sold this before

► plan to sell this in the future

► use this for personal or on-farm use

Check all that apply

Crops, Products and Resources from Silvopasture

- a. Firewood
- b. Trees for timber products (lumber, boards, veneer, utility poles, etc.)
- c. Trees for non-timber products (pulp, fence posts, woodchips, etc.)
- d. Forages/hay/fodder for livestock
- e. Livestock products (milk, meat, stockers, wool, etc.)
Specify products: ²⁰⁵⁷
- f. Edibles (walnuts, maple syrup, apples, etc.)
Specify products: ²⁰⁶¹
- g. Medicinal plants and herbs (American ginseng, goldenseal, etc.)
Specify products: ²⁰⁶⁵
- h. Materials for landscaping and/or decorative plants
Specify products: ²⁰⁶⁹
- i. Other crops/products - Specify: ²⁰⁷³

Sold this before	Plan to sell this in the future	Use this for personal or on-farm use
2045 <input type="checkbox"/>	2046 <input type="checkbox"/>	2047 <input type="checkbox"/>
2048 <input type="checkbox"/>	2049 <input type="checkbox"/>	2050 <input type="checkbox"/>
2051 <input type="checkbox"/>	2052 <input type="checkbox"/>	2053 <input type="checkbox"/>
2054 <input type="checkbox"/>	2055 <input type="checkbox"/>	2056 <input type="checkbox"/>
2058 <input type="checkbox"/>	2059 <input type="checkbox"/>	2060 <input type="checkbox"/>
2062 <input type="checkbox"/>	2063 <input type="checkbox"/>	2064 <input type="checkbox"/>
2066 <input type="checkbox"/>	2067 <input type="checkbox"/>	2068 <input type="checkbox"/>
2070 <input type="checkbox"/>	2071 <input type="checkbox"/>	2072 <input type="checkbox"/>
2074 <input type="checkbox"/>	2075 <input type="checkbox"/>	2076 <input type="checkbox"/>

► This question only asks about whether one of the three specified actions has occurred (i.e., sold, plans to sell, or use for personal on-farm use) and not the frequency of that activity.

► A respondent may ask a clarifying question related to this. One appropriate response would be to say that if the action has occurred (even once) then check the box(s).

► Respondents may also ask about what qualifies as personal or on-farm use. This could include using or consuming the product, giving it to a friend, neighbor or family member, etc. This column encompasses all uses of the crop, product or resource from silvopastures without the transfer of money.

Silvopasture Section – Q5

5. When were silvopasture(s) established on this operation? Check all that apply

2157 <input type="checkbox"/> Less than 5 years ago	2159 <input type="checkbox"/> 10 years - less than 15 years ago	2161 <input type="checkbox"/> Don't Know
2158 <input type="checkbox"/> 5 years - less than 10 years ago	2160 <input type="checkbox"/> 15 years or more	

- ▶ Because of changes in land ownership and the perennial nature of agroforestry systems, there could be a situation where a respondent selects one or several of the time series choices (i.e., 5 years – less than 10 years ago) and “Don’t Know” at the same time. An example of when this may occur is if the respondent purchased the land with an existing silvopasture and are unaware of when it was established yet have added new silvopastures to their operation since acquiring the land.

6. Do the silvopasture(s) provide any of the following benefits to this operation?

Number	Conservation Benefits		YES	NO	DON'T KNOW
1	Invasive/noxious plant control	2078	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Habitat for pollinators and other beneficial insects.....	2079	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	Wildlife habitat	2080	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Improved soil health.....	2081	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Improved soil erosion control.....	2082	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Improved nutrient management.....	2083	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Increased carbon storage in soils, trees and vegetation	2084	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Improved water quality	2085	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	Economic Benefits				
9	Expansion of pasture acreage.....	2086	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Income from sale of products (meat, eggs, stockers, timber, etc.).....	2087	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Crops/products for on-farm or personal use.....	2088	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Improved animal welfare and health.....	2089	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Increased livestock production.....	2090	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Improved forage quality.....	2091	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Increased forage availability throughout the year.....	2092	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Increased forage production on a per acre basis.....	2093	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Reduction in feed purchases.....	2094	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Improvement of marginal, unproductive or unfarmable land.....	2095	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Income diversification from multiple crops/products.....	2096	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
20	Increased land value.....	2097	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Revenue from conservation payments.....	2098	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Revenue from hunting leases.....	2099	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Timber stand improvement.....	2100	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Increased water use efficiency.....	2101	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	Other Benefits				
25	Wildfire fuel reduction.....	2102	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
26	Aesthetics/scenic beauty.....	2103	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
27	Hunting	2104	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
28	Recreation (other than hunting).....	2105	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
29	Odor reduction.....	2106	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
30	Improved resilience to weather extremes (drought, flood, etc.)	2107	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
31	Other benefit(s) - Specify. ²¹⁰⁸				

Silvopasture Section – Q6

- ▶ The “benefits” question is the longest and possibly most time consuming per section.
- ▶ Do not be surprised if a respondent selects Yes for a majority (or all) of the choices.

Silvopasture Section – Q7

7. Of the silvopasture benefits listed above (1 - 31), which 3 are most important to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
2109	2110	2111
____	____	____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when responding to this question.
- ▶ Best strategy may be to re-read which benefits they said **Yes** to and have them select the three benefits most important to them from that selection.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 benefits are most important initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 benefits (i.e., 1st, 2nd, 3rd).

Silvopasture Section – Q8

8. Have any of the following activities occurred, or will occur, to manage/maintain the silvopasture on this operation?

Management/Maintenance Activities	YES	NO	DON'T KNOW
Cultivation for weed control (mowing, hand pulling, etc.) 2112	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Herbicide for weed control 2113	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Prescribed fire 2114	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigation 2115	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fertilization and/or soil amendments 2116	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting trees 2117	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting forages 2118	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree branches and stems 2119	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of trees (thinning) 2120	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of undesirable understory vegetation 2121	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fencing or tree tubes to protect trees from wildlife/livestock 2122	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Rotational grazing 2123	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Utilize pastures without trees as part of grazing management 2124	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Provide supplements to livestock (minerals, hay, grain, etc.) when in silvopasture 2125	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other management activities - Specify: 2126 _____			

► This “management” question is similar to the “establishment” question (Q2), so refer to that for guidance.

Silvopasture Section – Q9

9. Please list up to 3 tree species growing in your silvopastures that are the most useful for your desired goals. List trees by species name (example: loblolly pine, red oak, etc.). If unsure of species name, list trees by common name (example: pine, oak, etc.).

2127	Specify species:	_____
2128	Specify species:	_____
2129	Specify species:	_____

- ▶ In some cases, a producer may not know tree species or common name. If this occurs, leave blank.
- ▶ For some plantation or orchard systems, a producer may only list 1 tree species.
- ▶ The question asks about most “useful” but can also be interpreted as most “important.”

10. Have any of the following been challenges on this operation when establishing or managing the silvopasture(s)?

Number	Potential Challenges	YES	NO	DON'T KNOW
1	Lack of information about establishment 2130	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Difficulty establishing trees, crops, or forage 2131	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	High startup costs 2132	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Lack of information on management and maintenance 2133	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Difficulty regrowing trees within an established silvopasture 2134	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Expense of maintenance 2135	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Lack of information on recommended tree, crop, or livestock species 2136	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Lack of knowledge among technical assistance providers 2137	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Lack of examples or demonstration sites 2138	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Lack of financial assistance 2139	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Lack of markets for products from silvopasture 2140	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Adds labor and complexity to management 2141	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Conflict with farm equipment, practices, or layout 2142	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Trees, forage and livestock competing for space, light, etc. 2143	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Livestock damage to trees 2144	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Wildlife damage to trees 2145	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Tree/shrub pests and diseases 2146	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Windthrow (trees falling over after thinning) 2147	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Livestock poisoning from foraging on toxic plants 2148	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
20	Soil compaction from livestock 2149	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Other challenge - Specify: 2150 _____			

Silvopasture Section – Q10

- ▶ For the “challenge” question, it is particularly important to inquire about whether they have experienced other challenges not mentioned in the question.
- ▶ I would recommend asking “are there other challenges you have experienced that were not mentioned in this question”

Silvopasture Section Q11

11. Of the challenges listed above (1 - 21), which 3 are most significant to this operation? Enter the corresponding number from the first column in the table above.

Enter Number

2151 ____	2152 ____	2153 ____
--------------	--------------	--------------

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when answering this question.
- ▶ Best strategy may be to re-read which challenges they said **Yes** to and have them select the three challenges most significant to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say that more than 3 challenges are most significant initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 challenges (i.e., 1st, 2nd, 3rd)

Silvopasture Section – Q12

12. In the next five years, will the acreage in silvopasture for this operation increase, decrease or stay the same?

Check one

2154

1 ☐ Increase - Specify reason(s): 2155

2 ☐ Decrease - Specify reason(s): 2156

3 ☐ Stay the same

4 ☐ Don't Know

Section 3 – Riparian Forest Buffers



Riparian Forest Buffer Section - Screener

Section 3 - Riparian Forest Buffers

A riparian forest buffer is an area adjacent to a stream, river, lake, or wetland that contains a combination of trees and shrubs and is often used for erosion control, bank stabilization, and nutrient runoff control. They are also called: stream management zones, vegetated buffer strips, woody riparian buffers, and riparian forest corridors.

Does this operation have any land in **riparian forest buffers**?

3000
1 ☐ Yes - Continue

3 ☐ No - Go to Section 4, page 15

- Many respondents will have riparian forest buffers that grew naturally adjacent to a waterway on their operation. A respondent may ask if a naturally established buffer counts. Yes it counts and the respondent should select Yes and complete Section 3.
- There may be respondents that say they do not have trees, but only have shrubs in their buffer. If they only have shrubs, that is ok, and they should select Yes and complete Section 3.

Riparian Forest Buffer Section – Q1

1. Please estimate the total land area in riparian forest buffer(s) for this operation.

INCLUDE: Estimate as acres **OR** length and width

- ▶ land owned
- ▶ rented
- ▶ leased from others

a. Riparian forest buffer	ACRES	3001
OR		
	FEET	
b. Average width of buffers	3002	
AND		
		total combined length of buffers rounded to the nearest 1/4 mile
		3003 · — —
MILES		

- ▶ Do not be surprised if respondents are unsure of the exact acreage and say that they are only providing a best guess. That is ok.

Riparian Forest Buffer Section – Q2

2. Were any of the following activities used to establish riparian forest buffers on this operation?

Establishment Activities	YES	NO	DON'T KNOW
Allowed trees and vegetation to grow naturally 3004	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Planted buffer trees and vegetation 3005	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used herbicides for weed control/site preparation prior to planting trees 3006	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used cultivation for weed control/site preparation prior to planting trees 3007	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used barrier weed control (mulch, plastic, etc.) to establish trees 3008	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigated buffer vegetation during the 1-3 year establishment period 3009	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Controlled weeds after planting trees during the 1-3 year establishment period . 3010	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed fencing and/or tree tubes to protect trees/shrubs from wildlife/livestock..... 3011	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanted buffer trees or vegetation to fill gaps 3012	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other establishment activities - Specify: 3013 _____			

- There may be a situation where a respondent says they conducted some of these activities on a portion of a riparian forest buffer but not on the rest (or they have multiple buffers and conducted different establishment activities on each). That is ok. The question is simply asking respondents what activities they used on any of their riparian forest buffers.

Riparian Forest Buffer Section – Q3

3. When were riparian forest buffers established on this operation? Check all that apply

3114 <input type="checkbox"/> Less than 5 years ago	3116 <input type="checkbox"/> 10 years - less than 15 years ago	3118 <input type="checkbox"/> Don't Know
3115 <input type="checkbox"/> 5 years - less than 10 years ago	3117 <input type="checkbox"/> 15 years or more	

- ▶ Because of changes in land ownership and the perennial nature of agroforestry systems, there could be a situation where a respondent selects one or several of the time series choices (i.e., 5 years – less than 10 years ago) and “Don’t Know” at the same time. One example of when this may occur is if the respondent purchased the land with existing riparian forest buffers and are unaware of when they were established yet have added new buffers to their operation since acquiring the land.

Riparian Forest Buffer Section – Q4

4. In the next five years, will the acreage in riparian forest buffer(s) for this operation increase, decrease or stay the same? Check one

3015	1	<input type="checkbox"/>	Increase - Specify reason(s):	3016
	2	<input type="checkbox"/>	Decrease - Specify reason(s):	3017
	3	<input type="checkbox"/>	Stay the same	
	4	<input type="checkbox"/>	Don't Know	

Riparian Forest Buffer Section – Q5

5. Have any of the following activities occurred, or will occur, to manage/maintain the riparian forest buffers on this operation?

Management/Maintenance Activities		YES	NO	DON'T KNOW
Cultivation for weed control (disking, plowing, mowing, etc.)	3018	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Herbicide for weed control	3019	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Barrier weed control (mulching/fabric)	3020	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Flash or short duration grazing within buffer	3021	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree branches and stems	3022	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Root pruning	3023	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of trees/buffer vegetation (thinning)	3024	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of trees/debris that have fallen into waterways	3025	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting trees/vegetation	3026	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigation of trees/shrubs	3027	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fertilization and/or soil amendments for the trees/shrubs	3028	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fencing or tree tubes to protect trees/shrubs from wildlife/livestock	3029	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other management activities - Specify: 3030 _____				

- ▶ One of the choices “Flash or short duration grazing within buffer” may cause some respondents to pause, since this practice is strongly discouraged in some states, while not in others.
- ▶ If a respondent asks about root pruning, that is the practice of cutting lateral roots from buffer trees and shrubs to reduce competition with adjacent crops.

Riparian Forest Buffer Section – Q6

6. Of the crops/products originating from riparian forest buffer trees and shrubs listed below, please specify whether this operation has:

► sold this before

► plan to sell this in the future

► use this for personal or on-farm use

Check all that apply

Crops, Products and Resources from Buffer Trees and Shrubs

a. Firewood

Sold this before	Plan to sell this in the future	Use this for personal or on-farm use
3031 <input type="checkbox"/>	3032 <input type="checkbox"/>	3033 <input type="checkbox"/>
3034 <input type="checkbox"/>	3035 <input type="checkbox"/>	3036 <input type="checkbox"/>
3037 <input type="checkbox"/>	3038 <input type="checkbox"/>	3039 <input type="checkbox"/>
3040 <input type="checkbox"/>	3041 <input type="checkbox"/>	3042 <input type="checkbox"/>
3044 <input type="checkbox"/>	3045 <input type="checkbox"/>	3046 <input type="checkbox"/>
3048 <input type="checkbox"/>	3049 <input type="checkbox"/>	3050 <input type="checkbox"/>
3052 <input type="checkbox"/>	3053 <input type="checkbox"/>	3054 <input type="checkbox"/>
3056 <input type="checkbox"/>	3057 <input type="checkbox"/>	3058 <input type="checkbox"/>

b. Trees for timber products (lumber, boards, veneer, utility poles, etc.)

c. Trees for non-timber products (pulp, fence posts, woodchips, etc.)

d. Forages/hay/fodder for livestock

e. Edibles (raspberries, walnuts, maple syrup, etc.)

Specify products: ³⁰⁴³

f. Medicinal plants and herbs (American ginseng, goldenseal, etc.)

Specify products: ³⁰⁴⁷

g. Decorative plants and/or materials for landscaping

Specify products: ³⁰⁵¹

h. Other crops/products: Specify: ³⁰⁵⁵

► This question only asks about whether one of the three specified actions has occurred (i.e., sold, plans to sell, or use for personal on-farm use) and not the frequency of that activity.

► A respondent may ask a clarifying question related to this. One appropriate response would be to say that if the action has occurred (even once) then check the box(s).

► Respondents may also ask about what qualifies as personal or on-farm use. This could include using or consuming the product, giving it to a friend, neighbor or family member, etc. This column encompasses all uses of the crop, product or resource from riparian buffers without the transfer of money.

7. Do riparian forest buffers provide any of the following benefits to this operation?

Number	Conservation Benefits	YES	NO	DON'T KNOW
1	Improved erosion control 3059	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Bank stabilization 3060	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	Improved soil health 3061	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Improved water quality 3062	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Improved nutrient management 3063	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Chemical drift mitigation (pesticide, herbicide, fertilizer) 3064	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Shade for aquatic environment 3065	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Increased carbon storage in soils, trees, and vegetation 3066	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Habitat for pollinators and other beneficial insects 3067	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Wildlife habitat (both land and water) 3068	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Economic Benefits				
11	Income from buffer trees/shrubs (firewood, timber, edibles, etc.) 3069	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Crops/products for on-farm or personal use from buffer trees/shrubs (firewood, timber, nuts, etc.) 3070	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Income diversification from multiple crops/products 3071	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Improvement of marginal, unproductive or unfarmable land 3072	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Crop protection 3073	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Increased land value 3074	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Revenue from conservation payments 3075	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Revenue from hunting leases 3076	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Traps debris from being deposited on crop fields during flooding 3077	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other Benefits				
20	Hunting 3078	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Recreation (other than hunting) 3079	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Improved resilience to weather extremes (drought, flood, etc.) 3080	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Scenic beauty and aesthetics 3081	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Other benefit(s) - Specify: ³⁰⁸² _____			

Riparian Forest Buffer Section – Q7

- ▶ The “benefits” question is the longest and possibly most time consuming per section.
- ▶ Do not be surprised if a respondent selects Yes for a majority (or all) of the choices.

Riparian Forest Buffer Section – Q8

8. Of the riparian forest buffer benefits listed above (1 - 24), which 3 are most important to this operation? Enter the corresponding number from the first column in the table above.

Enter Number

3083	3084	3085
____	____	____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when responding to this question.
- ▶ Best strategy may be to re-read which benefits they said **Yes** to and have them select the three benefits most important to them from that selection.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say that more than 3 benefits are most important initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 benefits (i.e., 1st, 2nd, 3rd).

9. Have any of the following been challenges on this operation when establishing or managing the riparian forest buffers?

Number	Potential Challenges	YES	NO	DON'T KNOW
1	Lack of information about establishment 3086	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Difficulty establishing trees/shrubs 3087	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	High startup costs 3088	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Lack of information on management and maintenance 3089	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Difficulty regrowing trees within an established buffer 3090	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Expense of maintenance 3091	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Lack of information on recommended tree/shrub species 3092	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Lack of buffer knowledge among technical assistance providers 3093	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Lack of examples or demonstration sites 3094	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Lack of financial assistance 3095	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Lack of markets for products from buffers 3096	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Loss of cropland 3097	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Adds labor and complexity to management 3098	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Conflict with farm equipment, practices, or layout 3099	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Trees and crops compete for space, light, water, and nutrients 3100	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Trees falling into waterways 3101	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Harbors harmful crop pests (wildlife, insects, weeds, etc.) 3102	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Damage to buffer trees/vegetation from flooding 3103	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Tree/shrub pests and diseases 3104	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
20	Herbicide drift damaging trees/shrubs 3105	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Issues with subsurface drainage tiles 3106	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Snow drift issues 3107	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Damage to buffer trees/vegetation from livestock 3108	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Damage to buffer trees/vegetation from wildlife 3109	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
25	Other challenge(s) - Specify: ³¹¹⁰ _____			

Riparian Forest Buffer

Section – Q9

- ▶ For the “challenge” question, it is particularly important to inquire about whether they have experienced other challenges not mentioned in the question.
- ▶ I would recommend asking “are there other challenges you have experienced that were not mentioned in this question”

Riparian Forest Buffer Section – Q10

10. Of the challenges listed above (1 - 25), which 3 are most significant to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
3111 ____	3112 ____	3113 ____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when answering this question.
- ▶ Best strategy may be to re-read which challenges they said **Yes** to and have them select the three challenges most significant to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say that more than 3 challenges are most significant initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 challenges (i.e., 1st, 2nd, 3rd)

Section 4 – Alley Cropping and Intercropping



Alley Cropping and Intercropping Screener

Section 4 - Alley Cropping and Intercropping with Trees and Crops

Alley cropping is the cultivation of crops or forages between rows of trees/shrubs. Orchards and tree plantations are considered as alley cropping if crops or forages are grown/harvested from between the rows of trees/shrubs. Intercropping is the deliberate cultivation of trees with crops or forages on the same field but does not need to be in defined rows and alleys.

Does this operation have any land in **alley cropping** and/or **intercropping** with trees/crops?

4000
1 ☐ Yes - Continue

3 ☐ No - Go to Section 5, page 19

- ▶ There may be a situation where a respondent says that they grow forages (hay, legumes, etc.) in alleys between the trees. If the forages are removed from the system and then consumed by livestock elsewhere, then they should select Yes and fill out Section 4.
 - ▶ If the forages are consumed by livestock that are grazing within the system, then the respondent should fill out Section 2 (Silvopasture) for this scenario. There may also be a situation where the respondent does both and should then fill out both Section 2 (silvopasture) and Section 4.

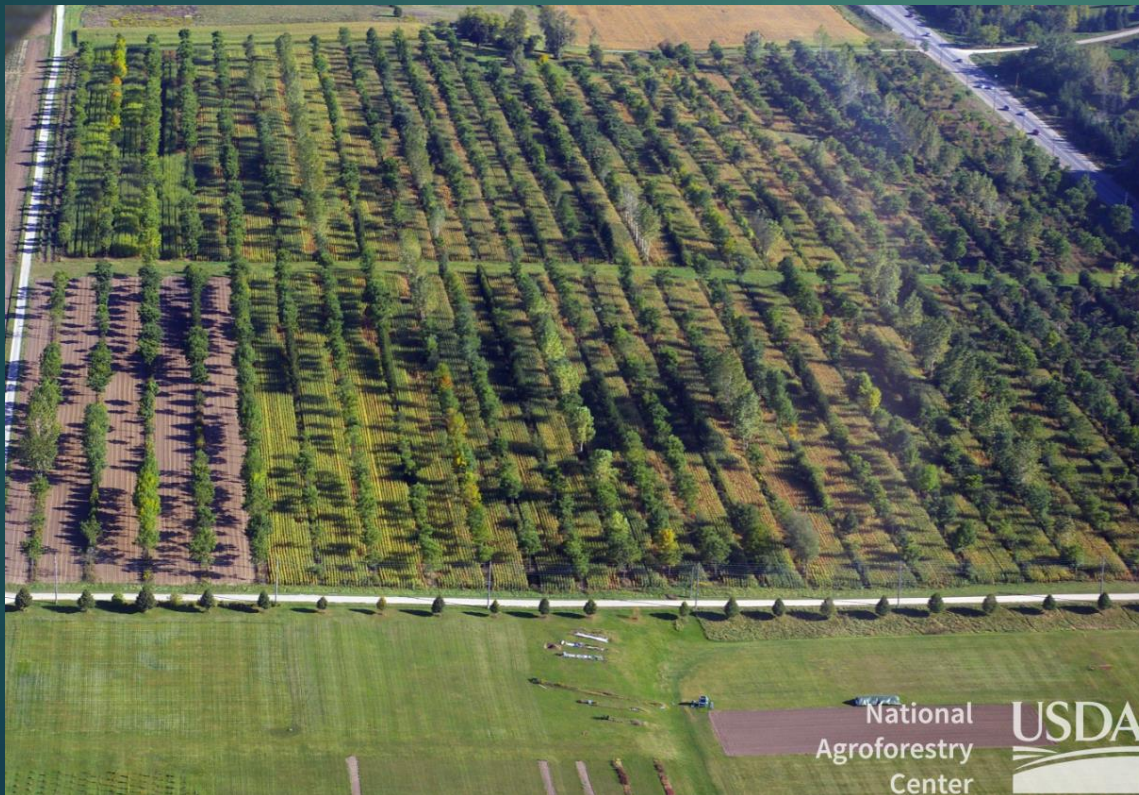
Alley Cropping and Intercropping – Q1

1. How many acres of land does this operation have in alley cropping/intercropping?

INCLUDE: land owned, rented, and leased from others. Report acreage as the combined total of land in trees, crops, idle or fallow.

Alley and Inter-
cropping Acres

4001



- Important that respondents report acreage as the combined total of land in trees, crops, idle or fallow in the alley cropping/intercropping system (not just the land in tree rows or in crop alleys)

2. Does alley cropping/intercropping provide any of the following benefits to this operation?

Number	Conservation Benefits	YES	NO	DON'T KNOW
1	Habitat for pollinators and other beneficial insects..... 4002	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Wildlife habitat..... 4003	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	Improved soil health..... 4004	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Improved soil erosion control..... 4005	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Improved nutrient management..... 4006	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Increased carbon storage in soils, trees, and vegetation..... 4007	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Chemical drift mitigation (pesticide, herbicide, fertilizer) 4008	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Improved water quality..... 4009	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	Economic Benefits			
9	Income from sale of products (crops, timber, etc.)..... 4010	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Crops/products for on-farm or personal use..... 4011	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Increased production/yield of crops, forage, and/or tree products 4012	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Improved quality of crops, forage, and/or tree products 4013	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Increased crop water use efficiency and/or irrigation efficiency..... 4014	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Increased land value..... 4015	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Revenue from conservation payments..... 4016	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Revenue from hunting leases..... 4017	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Improved crop protection from insects and pests..... 4018	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Improvement of marginal, unproductive or unfarmable land..... 4019	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Income diversification from multiple crops/products..... 4020	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
	Other Benefits			
20	Aesthetics/scenic beauty..... 4021	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Hunting 4022	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Recreation (other than hunting)..... 4023	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Improved resilience to weather extremes (drought, flood, etc.) 4024	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Other benefit(s) - Specify: 4025 _____			

Alley Cropping and Intercropping – Q2

- ▶ The “benefits” question is the longest and possibly most time consuming per section.
- ▶ Do not be surprised if a respondent selects Yes for a majority (or all) of the choices.

Alley Cropping and Intercropping – Q3

3. Of the alley cropping/intercropping benefits listed above (1 - 24), which 3 are most important to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
4026	4027	4028
_____	_____	_____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when responding to this question.
- ▶ Best strategy may be to re-read which benefits they said **Yes** to and have them select the three benefits most important to them from that selection.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 benefits are most important initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 benefits (i.e., 1st, 2nd, 3rd).

Alley Cropping and Intercropping – Q4

4. In the next five years, will the acreage in alley cropping/intercropping for this operation increase, decrease or stay the same? Check one

4029

1 ☐ Increase - Specify reason(s): 4030

2 ☐ Decrease - Specify reason(s): 4031

3 ☐ Stay the same

4 ☐ Don't Know

Alley Cropping and Intercropping – Q5

5. Of the crops/products originating from alley cropping/intercropping listed below, please specify whether this operation has:

► sold this before

► plan to sell this in the future

► use this for personal or on-farm use

Check all that apply

Crops, Products and Resources from Alley Cropping/intercropping

a. Firewood

b. Trees for timber products (lumber, boards, veneer, utility poles, etc.)

c. Trees for non-timber products (pulp, fence posts, woodchips, etc.)

d. Forages/hay/fodder for livestock

e. Edibles/crops (walnuts, apples, pecans, grapes, etc.)

Specify products: ⁴⁰⁴⁴

f. Medicinal plants and herbs (American ginseng, goldenseal, etc.)

Specify products: ⁴⁰⁴⁸

g. Decorative plants and/or materials for landscaping

Specify products: ⁴⁰⁵²

h. Other crops/products - Specify: ⁴⁰⁵⁶

Sold this before	Plan to sell this in the future	Use this for personal or on-farm use
4032 <input type="checkbox"/>	4033 <input type="checkbox"/>	4034 <input type="checkbox"/>
4035 <input type="checkbox"/>	4036 <input type="checkbox"/>	4037 <input type="checkbox"/>
4038 <input type="checkbox"/>	4039 <input type="checkbox"/>	4040 <input type="checkbox"/>
4041 <input type="checkbox"/>	4042 <input type="checkbox"/>	4043 <input type="checkbox"/>
4045 <input type="checkbox"/>	4046 <input type="checkbox"/>	4047 <input type="checkbox"/>
4049 <input type="checkbox"/>	4050 <input type="checkbox"/>	4051 <input type="checkbox"/>
4053 <input type="checkbox"/>	4054 <input type="checkbox"/>	4055 <input type="checkbox"/>
4057 <input type="checkbox"/>	4058 <input type="checkbox"/>	4059 <input type="checkbox"/>

► This question only asks about whether one of the three specified actions has occurred (i.e., sold, plans to sell, or use for personal on-farm use) and not the frequency of that activity.

► A respondent may ask a clarifying question related to this. One appropriate response would be to say that if the action has occurred (even once) then check the box(s).

► Respondents may also ask about what qualifies as personal or on-farm use. This could include using or consuming the product, giving it to a friend, neighbor or family member, etc. This column encompasses all uses of the crop, product or resource from the alley cropping / intercropping system without the transfer of money.

Alley Cropping and Intercropping – Q6

6. Please list the 3 most abundant tree and crop species combinations in alley cropping/intercropping system(s) by common name (example: black walnut, pecan, corn, soybean, etc.). If multiple combinations exist, please describe in the rows below.

TREES and/or SHRUBS		and	CROPS and/or FORAGES	
Specify species:	4060	4061	
Specify species:	4062	4063	
Specify species:	4064	4065	

- This question may be difficult for a respondent to answer if not looking at the survey question. If a respondent is having trouble answering, feel free to ask, “what trees are growing in the alley cropping / intercropping system and what crops are growing in between those trees.”

Alley Cropping and Intercropping – Q7

7. When were alley cropping/intercropping systems established on this operation? Check all that apply

4118 <input type="checkbox"/>	Less than 5 years ago	4120 <input type="checkbox"/>	10 years - less than 15 years ago	4122 <input type="checkbox"/>	Don't Know
4119 <input type="checkbox"/>	5 years - less than 10 years ago	4121 <input type="checkbox"/>	15 years or more		

- ▶ Because of changes in land ownership and the perennial nature of agroforestry systems, there could be a situation where a respondent selects one or several of the time series choices (i.e., 5 years – less than 10 years ago) and “Don’t Know” at the same time. An example of when this may occur is if the respondent purchased the land with an existing alley cropping system and is unaware of when it was established yet have added a new alley cropping / intercropping system to their operation since acquiring the land.

Alley Cropping and Intercropping – Q8

8. Were any of the following activities used to establish alley cropping/intercropping on this operation?

Establishment Activities	YES	NO	DON'T KNOW
Converted a pasture or field to alley cropping by planting trees 4067	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an existing tree plantation to alley cropping by removing some trees and adding crops or forage 4068	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an existing forest or woodlot to alley cropping by removing some trees and adding crops or forage 4069	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Converted an orchard to alley cropping by adding crops or forage 4070	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other conversion strategy - Specify: 4071 _____			
Site Preparation and Infrastructure Activities			
Used herbicides for weed control/site preparation prior to planting trees 4072	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used cultivation for weed control/site preparation prior to planting trees 4073	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used barrier weed control (mulch, plastic, etc.) to establish trees 4074	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigated trees during the 1- 3 year establishment period 4075	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Controlled weeds after planting trees during the 1 - 3 year establishment period 4076	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanted tree seedlings to fill gaps 4077	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used fertilizer and/or soil amendments prior to or during establishment 4078	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed fencing and/or tree tubes to protect trees from wildlife/livestock 4079	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed or improved irrigation infrastructure 4080	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other establishment activities - Specify: 4081 _____			

► There may be a situation where a respondent says they conducted some of these activities on a portion of their alley cropping / intercropping system but not on the rest (or they have multiple systems and conducted different establishment activities on each). That is ok. The question is simply asking respondents what activities they used on any of their alley cropping / intercropping systems.

Alley Cropping and Intercropping – Q9

9. Have any of the following activities occurred, or will occur, to manage/maintain the alley cropping/intercropping on this operation?

Management/Maintenance Activities	YES	NO	DON'T KNOW
Cultivation for weed control (disking, plowing, mowing, etc.) 4082	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Herbicide for weed control 4083	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Barrier weed control (mulching/fabric) 4084	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Grazing livestock 4085	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pesticide 4086	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigation 4087	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fertilization and/or soil amendments 4088	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting trees 4089	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting crops 4090	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree branches and stems 4091	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree roots to reduce competition with crops 4092	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of living or dead trees (thinning) 4093	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fencing or tree tubes to protect trees or crops from wildlife/livestock 4094	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other management activities - Specify: 4095 _____			

- This “management” question is similar to the “establishment” question (Q8), so refer to that for guidance.

Alley Cropping and Intercropping – Q10

10. Have any of the following been challenges on this operation when establishing or managing the alley cropping/intercropping systems?

Number	Potential Challenges	YES	NO	DON'T KNOW
1	Lack of information about establishment 4096	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Difficulty establishing trees, crops, or forage 4097	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	High startup costs 4098	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Lack of information on management and maintenance 4099	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Difficulty regrowing trees in an established alley cropping system 4100	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Expense of maintenance 4101	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Lack of information on recommended tree/crop species combinations 4102	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Lack of knowledge among technical assistance providers 4103	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Lack of examples or demonstration sites 4104	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Lack of financial assistance 4105	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Lack of markets for products 4106	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Adds labor and complexity to management 4107	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Conflict with farm equipment, practices, or layout 4108	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Trees and crops compete for space, light, water, and nutrients 4109	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Wildlife damage to trees and crops 4110	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Tree/shrub pests and diseases 4111	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Herbicide drift damaging trees/shrubs 4112	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Issues with snow drifts 4113	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Other challenge(s) - Specify: ⁴¹¹⁴ _____			

- ▶ For the “challenge” question, it is particularly important to inquire about whether they have experienced other challenges not mentioned in the question.
- ▶ I would recommend asking “are there other challenges you have experienced that were not mentioned in this question”

Alley Cropping and Intercropping – Q11

11. Of the challenges listed above (1 - 19), which 3 are most significant to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
4115	4116	4117
_____	_____	_____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when answering this question.
- ▶ Best strategy may be to re-read which challenges they said **Yes** to and have them select the three challenges most significant to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say that more than 3 challenges are most significant initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 challenges (i.e., 1st, 2nd, 3rd)

Section 5 – Forest Farming / Multi-Story Cropping



Forest Farming / Multi-Story Cropping - Screener

Section 5 - Forest Farming / Multi-Story Cropping

Multi-Story Cropping/Forest Farming is the deliberate cultivation of crops under a canopy of trees. The canopy is often modified to provide levels of light that favor growth and enhanced production of the understory crops. Crops may include edibles (fruits, vegetables, nuts, mushrooms, etc.) tapping trees for syrup, nursery or landscaping plants, woodland herbal/medicinal plants, and decorative/floral products. A tree farm or plantation is not considered forest farming unless understory crops are intentionally cultivated underneath the canopy of trees.

Does this operation have any land in **forest farming/multi-story cropping**?

5000

1 ☐ Yes - Continue

3 ☐ No - Go to Section 6, bottom of page 22

- Of the five agroforestry practices, forest farming is often the most misunderstood. Do not be surprised if someone with a tree farm or plantation believes their system to be forest farming. However, these other management practices and not agroforestry.

Forest Farming / Multi-Story Cropping – Q1

1. Is the forest farming system on this operation managed in any of the following ways?

- | | | | |
|---|------|--------------------------------|-------------------------------|
| a. Wild-stewarded: Managing existing wild plant populations in a wooded environment with the goal of sustainable harvest. Involves minimal site preparation or inputs | 5001 | 1 <input type="checkbox"/> Yes | 3 <input type="checkbox"/> No |
| b. Wild-simulated: Deliberately cultivating crops in a natural growing environment. Involves minimal management to expose the soil for planting. Can involve modification of the forest canopy to favor growth | 5002 | 1 <input type="checkbox"/> Yes | 3 <input type="checkbox"/> No |
| c. Woods-grown: Cultivation in rows and/or clusters of a single crop under the forest canopy. May involve tilling, fertilizing, weeding and controlling disease and pests. Often includes clearing vegetation in the understory and thinning the forest overstory | 5003 | 1 <input type="checkbox"/> Yes | 3 <input type="checkbox"/> No |

- Do not be surprised if a respondent is managing multiple forest farming systems and selects Yes for all three choices.

Forest Farming / Multi-Story Cropping – Q2

Forest Farming
Acres

2. How many acres of land does this operation have in forest farming/multi-story cropping?

INCLUDE: land owned, rented, and leased from others

5004

Forest Farming / Multi-Story Cropping – Q3

3. Were any of the following activities used to establish the forest farming system on this operation?

Establishment Activities	YES	NO	DON'T KNOW
Cultivation for weed control/site preparation 5005	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used barrier weed control (mulch, plastic, etc.) to establish crops 5006	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used herbicides for weed control/site preparation 5007	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Used fertilizer and/or soil amendments prior to or during establishment 5008	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Cleared debris (leaf layer, fallen trees, branches, rocks, etc.) 5009	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removed trees (thinning) 5010	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruned tree branches 5011	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removed competing understory vegetation 5012	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed irrigation infrastructure 5013	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Installed fencing and/or tree tubes to protect trees/shrubs from livestock/wildlife 5014	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other establishment activities - Specify: 5015 _____			

- There may be a situation where a respondent says they conducted some of these activities on a portion of their forest farming system but not on the rest (or they have multiple forest farming systems and conducted different establishment activities on each). That is ok. The question is simply asking respondents what activities they used on any of their forest farming systems.

Forest Farming / Multi-Story Cropping – Q4

4. When were forest farming system(s) established on this operation? Check all that apply

5109 <input type="checkbox"/> Less than 5 years ago	5111 <input type="checkbox"/> 10 years - less than 15 years ago	5113 <input type="checkbox"/> Don't Know
5110 <input type="checkbox"/> 5 years - less than 10 years ago	5112 <input type="checkbox"/> 15 years or more	

- ▶ Because of changes in land ownership and the perennial nature of agroforestry systems, there could be a situation where a respondent selects one or several of the time series choices (i.e., 5 years – less than 10 years ago) and Don't Know at the same time. One example of when this may occur is if the respondent purchased the land with an existing forest farming system and is unaware of when it was established yet has added a new forest farming system to their operation since acquiring the land.

Forest Farming / Multi-Story Cropping – Q5

5. Have any of the following activities occurred, or will occur, to manage/maintain the forest farming system on this operation?

Management Activities		YES	NO	DON'T KNOW
Cultivation for weed control (pulling, disking, plowing, etc.)	5017	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Herbicides for weed control	5018	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Barrier weed control (mulching/fabric)	5019	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Livestock grazing	5020	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Prescribed fire	5021	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Irrigation	5022	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fertilization and/or soil amendments	5023	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting trees	5024	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Replanting understory crops	5025	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of tree branches and stems	5026	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Pruning of understory branches and stems	5027	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal of living or dead trees (thinning)	5028	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Removal/clearing of understory vegetation, rocks, and forest debris	5029	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Fencing or tree tubes to protect trees/crops from wildlife/livestock	5030	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other management activities- Specify: ⁵⁰³¹ _____				

► This “management” question is similar to the “establishment” question (Q3), so refer to that for guidance.

Forest Farming / Multi-Story Cropping – Q6

6. Of the crops/products originating from forest farming systems listed below, please specify whether this operation has:

▶ sold this before

▶ plan to sell this in the future

▶ use this for personal or on-farm use

Check all that apply

Crops, Products and Resources from Forest Farming

a. Firewood

b. Trees for timber products (lumber, boards, veneer, utility poles, etc.)

c. Trees for non-timber products (pulp, fence posts, woodchips, etc.)

d. Edibles (shiitake mushrooms, maple syrup, ramps, etc.)

Specify products: ⁵⁰⁴¹

e. Medicinal plants and herbs (American ginseng, goldenseal, etc.)

Specify products: ⁵⁰⁴⁵

f. Decorative plants and/or materials for landscaping

Specify products: ⁵⁰⁴⁹

g. Other crops/products - Specify: ⁵⁰⁵³

Sold this before	Plan to sell this in the future	Use this for personal or on-farm use
5032 <input type="checkbox"/>	5033 <input type="checkbox"/>	5034 <input type="checkbox"/>
5035 <input type="checkbox"/>	5036 <input type="checkbox"/>	5037 <input type="checkbox"/>
5038 <input type="checkbox"/>	5039 <input type="checkbox"/>	5040 <input type="checkbox"/>
5042 <input type="checkbox"/>	5043 <input type="checkbox"/>	5044 <input type="checkbox"/>
5046 <input type="checkbox"/>	5047 <input type="checkbox"/>	5048 <input type="checkbox"/>
5050 <input type="checkbox"/>	5051 <input type="checkbox"/>	5052 <input type="checkbox"/>
5054 <input type="checkbox"/>	5055 <input type="checkbox"/>	5056 <input type="checkbox"/>

▶ This question only asks about whether one of the three specified actions has occurred (i.e., sold, plans to sell, or use for personal on-farm use) and not the frequency of that activity.

▶ A respondent may ask a clarifying question related to this. One appropriate response would be to say that if the action has occurred (even once) then check the box(s).

▶ Respondents may also ask about what qualifies as personal or on-farm use. This could include using or consuming the product, giving it to a friend, neighbor or family member, etc. This column encompasses all uses of the crop, product or resource from the forest farming system without the transfer of money.

7. Does forest farming provide any of the following benefits to this operation?

Number	Conservation Benefits	YES	NO	DON'T KNOW
1	Habitat for pollinators and other beneficial insects 5057	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Wildlife habitat 5058	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	Improved soil health 5059	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Improved soil erosion control 5060	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Improved water quality 5061	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Improved nutrient management 5062	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Increased carbon storage in soils, trees, and vegetation 5063	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Invasive weed control 5064	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Economic Benefits				
9	Income from sale of products (edibles, timber, etc.) 5065	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Crops/products for on-farm or personal use 5066	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Increased crop production/yield 5067	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Improved crop quality 5068	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Income diversification from multiple crops/products 5069	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Improvement of marginal unproductive or unfarmable land 5070	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Increased water-use efficiency 5071	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Increased land value 5072	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Revenue from conservation payments 5073	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Revenue from hunting leases 5074	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
19	Timber stand improvement 5075	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
Other Benefits				
20	Cultural/family tradition 5076	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
21	Hunting 5077	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
22	Recreation (other than hunting) 5078	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
23	Improved resilience to weather extremes (drought, flood, etc.) 5079	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
24	Aesthetics/scenic beauty 5080	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
25	Other benefit(s) - Specify: ⁵⁰⁸¹			

Forest Farming / Multi-Story Cropping – Q7

- ▶ The “benefits” question is the longest and possibly most time consuming per section.
- ▶ Do not be surprised if a respondent selects Yes for a majority (or all) of the choices.

Forest Farming / Multi-Story Cropping – Q8

8. Of the forest farming benefits listed above (1 - 25), which 3 are most important to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
5082 ____	5083 ____	5084 ____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when responding to this question.
- ▶ Best strategy may be to re-read which benefits they said **Yes** to and have them select the three benefits most important to them from that selection.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 benefits are most important initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 benefits (i.e., 1st, 2nd, 3rd).

Forest Farming / Multi-Story Cropping – Q9

9. In the next five years, will the acreage in forest farming or multi-story cropping for this operation increase, decrease or stay the same? Check one

5085 1 ☐ Increase - Specify reason(s): 5086

2 ☐ Decrease - Specify reason(s): 5087

3 ☐ Stay the same

4 ☐ Don't Know

10. Have any of the following been challenges on this operation when establishing or managing the forest farming system?

Number	Potential Challenges	Yes	No	Don't Know
1	Lack of information about establishment 5088	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
2	Difficulty establishing crops 5089	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
3	High startup costs 5090	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
4	Lack of information on management and maintenance 5091	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
5	Difficulty regrowing trees within an established forest farming system . 5092	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
6	Expense of maintenance 5093	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
7	Lack of information on recommended crop species 5094	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
8	Lack of knowledge among technical assistance providers 5095	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
9	Lack of examples or demonstration sites 5096	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
10	Lack of financial assistance 5097	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
11	Lack of markets for products 5098	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
12	Adds labor and complexity to management 5099	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
13	Conflict with farm equipment, practices, or layout 5100	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
14	Trees and crops compete for space, light, water, and nutrients 5101	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
15	Wildlife damage to trees and/or understory crops 5102	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
16	Tree/shrub pests and diseases 5103	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
17	Theft of forest farming crops 5104	1 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>
18	Other challenge(s) - Specify: 5105 _____			

Forest Farming / Multi-Story Cropping – Q10

- ▶ For the “challenge” question, it is particularly important to inquire about whether they have experienced other challenges not mentioned in the question.
- ▶ I would recommend asking “are there other challenges you have experienced that were not mentioned in this question”

Forest Farming / Multi-Story Cropping – Q11

11. Of the challenges listed above (1 - 18), which 3 are most significant to this operation? Enter the corresponding number from the first column in the table above.

Enter Number

5106 ____	5107 ____	5108 ____
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- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when answering this question.
- ▶ Best strategy may be to re-read which challenges they said **Yes** to and have them select the three challenges most significant to them.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say that more than 3 challenges are most significant initially and you will have to go back and clarify the top 3.
- ▶ Respondents do not need to rank the top 3 challenges (i.e., 1st, 2nd, 3rd)

Section 6: General Knowledge



General Knowledge Section - Screener

Did you fill out at least one of the previous agroforestry sections in this survey (i.e. for windbreaks, silvopasture, riparian forest buffers, alley cropping and/or forest farming)?

6000 ☐ Yes - I filled out at least one section - Go to item 1, page 23

6001 ☐ No - this operation **never** practiced agroforestry - Go to Section 7, back page

6002 ☐ No - this operation **stopped** using agroforestry since filling out the 2017 Census of Agriculture.
Specify which agroforestry practice was stopped and why:

6003

Go to Section 7, back page

6004 ☐ No - this operation uses other forms of agroforestry not specified in this survey.
Briefly describe the system:

6005

Go to Section 7, back page

General Knowledge Section – Q1

1. Do you use any of the following resources when gathering information about agroforestry?

Number	Information Source	YES	NO
1	Neighboring farmers, non-neighbor farmers or farmer groups 6006	1 <input type="checkbox"/>	3 <input type="checkbox"/>
2	Conservation district staff 6007	1 <input type="checkbox"/>	3 <input type="checkbox"/>
3	Private forester 6008	1 <input type="checkbox"/>	3 <input type="checkbox"/>
4	Agricultural or conservation consultant from a for-profit business 6009	1 <input type="checkbox"/>	3 <input type="checkbox"/>
5	Non-profit organization 6010	1 <input type="checkbox"/>	3 <input type="checkbox"/>
6	University Cooperative Extension 6011	1 <input type="checkbox"/>	3 <input type="checkbox"/>
7	State agricultural, environment or forestry staff 6012	1 <input type="checkbox"/>	3 <input type="checkbox"/>
8	Federal agricultural, environment or forestry staff 6013	1 <input type="checkbox"/>	3 <input type="checkbox"/>
9	Internet 6014	1 <input type="checkbox"/>	3 <input type="checkbox"/>
10	Social media 6015	1 <input type="checkbox"/>	3 <input type="checkbox"/>
11	Email/E-newsletter 6016	1 <input type="checkbox"/>	3 <input type="checkbox"/>
12	Farming/conservation magazines 6017	1 <input type="checkbox"/>	3 <input type="checkbox"/>
13	Books, print newsletters, brochures 6018	1 <input type="checkbox"/>	3 <input type="checkbox"/>
14	Peer reviewed scientific journals 6019	1 <input type="checkbox"/>	3 <input type="checkbox"/>
15	Have someone visit this operation 6020	1 <input type="checkbox"/>	3 <input type="checkbox"/>
16	Visit a different operation (field tour, demonstration site, etc.) 6021	1 <input type="checkbox"/>	3 <input type="checkbox"/>
17	Attendance at a conference or workshop 6022	1 <input type="checkbox"/>	3 <input type="checkbox"/>
18	Other information source - Specify: 6023 _____		

General Knowledge Section – Q2

2. Of the information sources listed above (1 - 18), which 3 are most useful to this operation? Enter the corresponding number from the first column in the table above.

Enter Number		
6024 ____	6025 ____	6026 ____

- ▶ I would strongly encourage you to have the respondent have the questionnaire in front of them when responding to this question.
- ▶ Best strategy may be to re-read which information sources they said **Yes** to and have them select the three sources most important to them from that selection.
- ▶ I would recommend writing the corresponding numbers on a notepad first, since they may say more than 3 information sources are most useful initially and you will have to go back and clarify the top 3.

General Knowledge Section – Q3

3. Has this operation used any of the following funding sources to establish, manage and/or support agroforestry practices:

- a. Self-funded with own money? 6027 1 ☐ Yes 3 ☐ No
- b. Loans from banks or credit unions?..... 6028 1 ☐ Yes 3 ☐ No
- c. Loans from private investors? 6029 1 ☐ Yes 3 ☐ No
- d. Federal funding (grants, loans, cost share, etc.)?
6030 1 ☐ Yes - Please specify program: 6031 _____
3 ☐ No
- e. State funding (grants, loans, cost share, etc.)?
6032 1 ☐ Yes - Please specify program: 6033 _____
3 ☐ No
- f. Funding from a non-governmental organization?
6034 1 ☐ Yes - Please specify: 6035 _____
3 ☐ No
- g. Other - Please specify: 6036 _____

► For some of the “specify” questions, a respondent may provide an acronym for a funding program. Please encourage them to define the acronym.

General Knowledge Section – Q4

4. If this operation **sells products** originating from any of its agroforestry systems, please indicate where they have been sold. Only check boxes in column(s) corresponding to the agroforestry practice(s) this operation utilizes.

Places where agroforestry crops/products have been or will be sold	Products from Windbreak	Products from Silvopasture	Products from Riparian Forest Buffer	Products from Alley/ Intercropping	Products from Forest Farming
a. Food distributor, broker, or processor	6037 <input type="checkbox"/>	6038 <input type="checkbox"/>	6039 <input type="checkbox"/>	6040 <input type="checkbox"/>	6041 <input type="checkbox"/>
b. Grain elevator	6042 <input type="checkbox"/>	6043 <input type="checkbox"/>	6044 <input type="checkbox"/>	6045 <input type="checkbox"/>	6046 <input type="checkbox"/>
c. Ethanol or biodiesel facility	6047 <input type="checkbox"/>	6048 <input type="checkbox"/>	6049 <input type="checkbox"/>	6050 <input type="checkbox"/>	6051 <input type="checkbox"/>
d. Restaurants, grocery stores, or institutions like schools and hospitals	6052 <input type="checkbox"/>	6053 <input type="checkbox"/>	6054 <input type="checkbox"/>	6055 <input type="checkbox"/>	6056 <input type="checkbox"/>
e. Food cooperative	6057 <input type="checkbox"/>	6058 <input type="checkbox"/>	6059 <input type="checkbox"/>	6060 <input type="checkbox"/>	6061 <input type="checkbox"/>
f. Animal stockyards	6062 <input type="checkbox"/>	6063 <input type="checkbox"/>	6064 <input type="checkbox"/>	6065 <input type="checkbox"/>	6066 <input type="checkbox"/>
g. Other farmers	6067 <input type="checkbox"/>	6068 <input type="checkbox"/>	6069 <input type="checkbox"/>	6070 <input type="checkbox"/>	6071 <input type="checkbox"/>
h. Farmers' market	6072 <input type="checkbox"/>	6073 <input type="checkbox"/>	6074 <input type="checkbox"/>	6075 <input type="checkbox"/>	6076 <input type="checkbox"/>
i. U-pick	6077 <input type="checkbox"/>	6078 <input type="checkbox"/>	6079 <input type="checkbox"/>	6080 <input type="checkbox"/>	6081 <input type="checkbox"/>
j. Farm stand or store	6082 <input type="checkbox"/>	6083 <input type="checkbox"/>	6084 <input type="checkbox"/>	6085 <input type="checkbox"/>	6086 <input type="checkbox"/>
k. Community Supported Agriculture	6087 <input type="checkbox"/>	6088 <input type="checkbox"/>	6089 <input type="checkbox"/>	6090 <input type="checkbox"/>	6091 <input type="checkbox"/>
l. Loggers purchasing standing trees (stumpage)	6092 <input type="checkbox"/>	6093 <input type="checkbox"/>	6094 <input type="checkbox"/>	6095 <input type="checkbox"/>	6096 <input type="checkbox"/>
m. Wood products direct-to-mill, wood manufacturer, timber supplier, etc.	6097 <input type="checkbox"/>	6098 <input type="checkbox"/>	6099 <input type="checkbox"/>	6100 <input type="checkbox"/>	6101 <input type="checkbox"/>
n. Other: Please Specify: ⁶¹⁰²	6103 <input type="checkbox"/>	6104 <input type="checkbox"/>	6105 <input type="checkbox"/>	6106 <input type="checkbox"/>	6107 <input type="checkbox"/>

- If a producer has multiple agroforestry practices, I would ask them the question first then focus on one agroforestry practice at a time to reduce any confusion.

Section 7 - Conclusion

Section 7 - Conclusion

Contact Information: Operation Email:

Operation Phone:

9937	9936 () -	check if cell phone <input type="checkbox"/>
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Respondent Name:

Respondent Phone: (if different from above)

9912	9911 () -	check if cell phone <input type="checkbox"/>	9910 MM DD YY Date: _ _ _ _ _ _
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This completes the survey. Thank you for your help.

OFFICE USE ONLY									
Response		Respondent		Mode		Enum.	Eval.	Change	Office Use for POID
1-Comp	9901	1-Op/Mgr	9902	1-PASI (Mail)	9903	9998	9900	9985	9989 _ _ _ - _ _ _ - _ _ _
2-R		2-Spouse		2-PATI (Tel)					
3-Inac		3-Acct/Bkpr		3-PAPI (Face-to-Face)					
4-Office Hold		4-Partner		6-Email					
5-R – Est		9-Other		7-Fax					
6-Inac – Est				19-Other					
7-Off Hold – Est									
									Optional Use
									9907 9908 9906 9916
S/E Name									