How to do Agricultural AT Assessments

Steve Swain, ATP Ned Stoller, ATP/RET National AgrAbility Project

Objectives

- How to build rapport and trust with the farmer.
- Understand different motivations for farming and business models.
- Understand the farmer medical conditions, history, and prognosis
- Recommend appropriate assistive technology



The Service Delivery Cycle

- Referral. Finding appropriate referral candidates for AT interventions by phone interview
- AT Assessment and evaluation of farm site with rehabilitation professionals
- Make a plan listing outcome measures and recommending AT interventions
- Implement the plan with the farmer, funders, AT suppliers, fabricators
- Follow-up to make sure AT is functioning as intended and outcome measures are met
- Follow along to revisit steps 2,3,4 as needed

OPENING THE DISABILIT CONVERSATION

WITH SOMEONE

WHO DOESN'T EVEN THINK THEY NEED HELP, LET ALONE HAVE A DISABILITY!

IN 3 STEPS



STEP A:

A CHATTY VISIT ABOUT THE FARMING OPERATION.

MOST FARMERS LIKE TO TALK ABOUT THEIR FARM AND ITS OPERATION



STEP B:

BY THE WAY I SEE YOU'RE LIMPING...CHATTY VISIT ABOUT WHAT HURTS. MOST FARMERS WILL ADMIT SOMETHING HURTS...

DOES IT HURT WHEN YOU ...?

STEP C:

CONNECT THE DOTS



OH, THAT MUST MAKE IT HARD TO... (LIFT YOUR LEG). AN EXTRA STEP ON THE BOTTOM OF THE TRACTOR COULD REDUCE STRAIN. WHO WOULD DO YOUR CHORES IF YOU FELL AND GOT HURT WORSE? DESCRIBE YOUR SERVICES AND SCHEDULE A CALL!

Inquiry Call Quantitative and Objective

- Tell me about your Farm. Assessment tool appendix
 1 page 128
 - Listen closely and write fast! Fewer questions needed.
 - Listen for farm history & goals (viable farm or hobby
 - ► Who else is helping?
- 2. AgrAbility is...tell who you are you and your services
- 3. What tasks are difficult to accomplish. Why?
 - Listen to hear the farmer's tasks and goals
 - Self reporting of medical conditions

4. Gently ask about medical comments & advice.

- ▶ Time frames, chronic or acute
- Improving, stable or worsening
- Restrictions

OBSERVE NON-QUESTION Information

Qualitative & Subjective

Tone of voice.

(Tired, desperate, exasperated, sheepish)

Who is calling.

- ► Farmer
- Caregiver
- Concerned neighbor
 - If not the farmer, why not?

www.AgrAbility.org/assessment initial meeting video

https://youtu.be/WtiWZ71ucEM?si=tKAtedhkdNwINUmK&t=112

IS THIS REFERRAL APPROPRIATE?

IF YOU CAN HELP, THEN CONTINUE THE CONVERSATION OR SCHEDULE ANOTHER MEETING TIME

IF YOU CANNOT HELP, THEN REFER TO SOMEONE WHO CAN

The Service Delivery Cycle: Assessment

- Referral finding appropriate candidates for AT interventions by phone interview
- AT Assessment and evaluation of farm site with rehabilitation professionals
- Make a plan listing outcome measures and recommending AT interventions
- Implement the plan with the farmer, funders, AT suppliers, fabricators
- Follow-up to make sure AT is functioning as intended and outcome measures are met

11

Follow along to revisit steps 2,3,4 as needed

The AT Assessment: it's a puzzle and we're looking for all the pieces.



Worksite AT Assessment Tool: use it Human, Context, Activity

Conducting Agricultural Worksite Assessments

A DEER'S GRIDE FOR PROFESSIONALS ASSISTING FARMERS AND KANCHERS WITH PHYSICAL DISABILITIES IN IDENTIFYING AND OVERCONING WORKPLACE BABRIERS



Evaluating Agricultural Workplace Assistive Technology for Secondary Injury Hazards

An Assessment Tool for Professionals Who Assist Farmers and Ranchers with Disabilities





13

National AgrAbility Project Breaking New Ground Resource Center Purdue University

Worksite Assessment Tool

Who is it for?

Professionals

"Textbook" for new staff

Step-by-step approach

Designed to cover all the bases

"Playbook" for experienced staff

Improve assessment effectiveness

► New angles, ideas

Assessment Step 1: Interview information

Gather information building on referral: remember the human, context, activity

- I care about you and want to understand so I can provide good services. I'm not an interrogator.
- Listen.
- Use the assessment tool to interview the consumer <u>and</u> team. Only ask what you cannot observe and photograph.
- Listen.
- Take notes, beware the laptop wall
- Listen.
- https://youtu.be/bRyG_ILxGOk?si=VpQu4XFG8zrIEqtL&t=120 AgrAbility.org/assessment interview before assessment video

Everyone can do this!

15

Questions

- Ask the caregivers and co-workers for their thoughts.
- Enthusiasm for certain parts of the operation?
- Is farmer attempting to earn a living, earn some extra cash, break even on a hobby, improve mental health?
- How long does farmer plan/hope to continue the operation (until I die, 10 yrs, 2 yrs, until I'm out of debt and can sell this place)
- How much the farmer relies on other's help on the farm



More Questions

- Review actual medical documentation and other records. Quantitative objective data. Range of motion, lift restrictions.
- Ask more detailed medical questions, actual diagnosis, prognosis and medical advice. Physical abilities. Strength. Endurance. Coordination. Pain.
- Cognitive and speech abilities. Attention span, problem solving, memory, judgement.
- Hearing Issues? Vision Issues? Sensory Issues?
- Stress? Mental illness? Quality of life.



More questions

- Who else is on your team? Family, friend, pastor, welding shop, neighbor, Medicare caregiver, PT/OT, doctors, social worker
- Make referrals for other evaluations - audiologist, counseling, etc...



The ATeam: Farmer CEO

The **farmer** is the CEO of the team to select appropriate AT

- Caregivers and family, pastor, counselor
- ATP is like the service coordinator/planner COO
- Multiple skill sets and perspectives for a common goal
- Coworkers, neighbors, ag extension agents, sales people
- Medical services, OT/PT
- ► ATP, RET, VR counselor, funding agency
- ► AT supplier, fabricator
- Another ATP with a specialty seating and positioning, electronic aids to daily living, low vision aids, etc...

The ATeam: ATP Assistive Technology Professional Certification

ATP role

- Referral and intake (ag professionals)
- AT assessments & evaluation (ag professionals with training)
- AT recommendations & planning
- ► AT implementation & training
- Follow-up and long-term follow along (ag professionals)





The ATeam: www.RESNA.org Rehabilitation Engineering & **AT Society of North America**



- The Assistive Technology Certification (ATP) recognizes demonstrated competence in analyzing the needs of consumers with disabilities, assisting in the selection of appropriate assistive technology for the consumer's needs, and providing training in the use of the selected device(s).
- Internationally recognized credibility
- AT fundamentals and training courses
- Continuing education opportunities



The ATeam: AT Supplier

AT supplier or fabricator's role:

Product attributes

- Price quotes with various options
- Delivery and set up
- Operating, safety, and maintenance instructions
- ► Warranty
- Follow the lead of the ATP



Don't ask what you can see

III. OVERALL FARM/RANCH ACCESSIBILITY

A. General terrain (e.g. hilly, flat, rocky, woody) and any mobility-related problems encountered Rocks, mud, tall weeds make a rugged utility vehicle a must for him to be able to access different areas of the farm. House sits about 100 yards at slight grade from pole barn and other buildings where the machinery is stored. Must travel over grass and gravel to get to these buildings. Presently no smooth area to work on equipment.

B. Farmyard surfaces: are areas around primary buildings surfaced and well-drained? Yes 🗙 No

Describe type of surface and mobility-related problems encountered: Buildings surrounded by uneven, gravel/crushed-stone aprons. Barn has a cement step going up to main door, making it inaccessible to dient (picture 1). All the other buildings can be accessed.

Assessment Step 1: Gather information by observations

- Observations are a critical part of the assessment, and often the most enjoyable.
- Observe the farmer <u>and</u> team. How do they interact?
- Listen.
- Take notes, observe farmer at home and at work. Unrealistic expectations?
- Listen.

Kitchen Table Observations

- Social and cultural issues are difficult to ask about but can often be observed. Family issues may emerge. Disposition of caregiver with regards to farming operation (caregiver in PJ's barking comments from the couch, spouse sold equipment, son took keys away)
- Attitude towards getting help (secretive, embarrassed, open)
- Your safety also (angry boyfriend, pit bull, threatening, weapons, communicable disease, mental illness)
- Guns in the kitchen do NOT mean the farmer is suicidal or crazy!

Questions to ask during the farm tour - use your assessment tool!!!

- Farmer talks about the farm and often acts like there's no problems
- ATP must observe and ask how the medical conditions impact certain important tasks
- Do observations align with interview responses?
- How do you do tasks at other times of the year? In July you have to ask about snow removal methods.



Farm Assessment Observations

- Extenuating circumstances - legal, financial, tragedy
- Confidentiality Do not use names or ways which a farmer can identify a neighbor client. The agricultural community is interconnected.



CASE How much does farmer want services vs how much do other workers want them to be served?

Likelihood of farmer using specific technology Qualitative and Subjective Observations Evaluating Agricultural Workplace Assistive Technology for Secondary Injury Hazards

An Assessment Tool for Professionals Who Assist Farmers and Ranchers with Disabilitie



NAgrAbility

National AgrAbility Project Breaking New Ground Resource Center Purdue University

- Safety of what is being done Risk of potential secondary injuries.
- Ethics of safety if they are going to do it anyway, should we help improve it?
- What AT is the farm is already utilizing? What AT is abandoned? Why was it?
- What existing equipment could be used as AT?
- Risk of AT to co-workers (removing steps to attach a lift -- too slow so they jump)
- How "handy" is the farmer can they do modifications?

Accuracy Observations

- Accuracy of self-reporting abilities and limitations
- Personality quirks and habits I'm not lyin' to ya'!! 600 hens, 53 acres of vegetables all alone.
- Other methods to complete same task?
- Is this a last-ditch effort to raise cash for a failing farm? (An ATV would be a valuable addition to the farm auction, my neighbor got \$20,000 in equipment and I want it too.)



Case study observations

- Mary is clearly very strong and capable
- She was energized by the thrill of selling honey
- She keeps every color and variety separate for individual sales
- She must haul honey long distances to the booth
- Always hurrying no time for ergonomics



More Questions

- Ask for demonstrations! Farmers are usually willing to demonstrate out-of-season tasks.
- Suggest specific options and hear if it has been tried before
- Is there a relationship with a welding shop?
- What else is taking place on the location (trucking, sandpit, 4-H animals, housing development next door...)
- AgrAbility.org/assessment heifer barn video <u>https://youtu.be/lzen8X96tTk?si=</u> <u>8C6W9SO2hztr418c&t=21</u>



Casenotes

- 1. Brief notes of how the farmer was served that day.
- 2. Don't get behind daily is ideal, definitely within a week
- 3. Help your memory and document services.

| Clipboard | Font | | Alignment Number | Styles | |
|----------------|---------|----|---|---------------------|---------------------|
| t ~ × ~ | fx | | | | |
| А | В | С | D | Е | F |
| Name/Project 🖓 | Date | | Activity/Recommendations/Inquiry | Total Time Spent | Next action date |
| | | | will visit her Sunfield apiary on Wednesday. | | |
| Brown | 8/16/23 | NS | Site visit. She wants to work with rehabilitation services and I will find out who the rehab counselor is in her area. Her dad has 3 fused disc's 2 bad knees heart issues and sells produce to farmers market with 30 lb lift restrictions and 4.5 acres of gardens . Hive lifter from Poland would help doing inspections. She needs pallet jack and tailgate lift and concrete by barn to move pallets. Her lower back feels pain most but hip is the problem on right side. Recommend fold-out table, fold-down ladder on truck for climbing on and off, but it cannot interfere with the trailer or stacking hives on the bed. | 1.9 | done |
| Brown | 8/17/23 | NS | Complete application and send it to MRS via email and they will start the process. | 0.3 | done |

Step 2: Clarify the Problems after gathering all the information

- Interpret findings human, context, activity
- Mary is tremendously ambitious and willing to sacrifice health for immediate productivity
- Her medical condition is degrading due to her work
- Mary's business plan is sound with a good future
- She functions very well in her context
- Her bending, lifting and carrying activities need modified



Step 3: Identify Overarching Goals

- List the farmer's goals based on their needs and preferences
- Prioritize the goals (star these during the assessment while gathering information)
- Include short-term and longterm goals
- 1. Make a living by producing and selling honey.
- 2. Operate the apiary.
- 3. Process the honey.
- 4. Sell honey at events.



Assessment Tool Goals page 73

XII. ESTABLISHING PRIMARY GOALS

A. Goal areas concerning worksite accessibility prioritized by client (1 = highest priority):

- Improve overall mobility or accessibility around farmyard, buildings, and fields
- Improve livestock handling abilities related to feeding methods, health-care needs, waste removal, and building sanitation
- Improve ability to effectively and safely use equipment and machinery, including accessing, operating, and maintaining equipment and hitching implements
- Improve ability to perform general maintenance activities around farm/ranch, including effective use of hand tools, power tools, and maintenance materials
- 2 Improve ability to manage farm/ranch operation successfully, including maintenance of business records, sales and purchases, and labor management activities
- 3 Identify an alternative farm enterprise that would better suit personal goals and abilities
- ____ Obtain part- or full-time off-farm employment.

Others

CHAPTER 6 EXAMPLES OF COMPLETED AGRICULTURAL WORKSITE ASSESSMENTS

SMILES!

Prioritize accommodations based on

- <u>Safety</u>, both yours and your co-workers',
- <u>Money</u>, increased profit potential,
- <u>Independence</u> doing the most important tasks,
- Liking the tasks you do, and
- <u>Expense</u> to make the improvements.
- <u>Spending time doing task and frequency.</u>

The Service Delivery Cycle: Plan

- Referral finding appropriate candidates for AT interventions by phone interview
 - AT Assessment and evaluation of farm site with rehabilitation professionals
 - Make a plan listing outcome measures and recommending AT interventions
- Implement the plan with the farmer, funders, AT suppliers, fabricators
 - Follow-up to make sure AT is functioning as intended and outcome measures are met
 - Follow along to revisit steps 2,3,4 as needed

Step 4: Outcome Measures after identifying goals

AgrAbility.org/assessment after assessment video <u>https://youtu.be/LduxLjj-tQc?si=5xetcxUHOibVicS6&t=75</u>

Identify and describe the generic attributes the AT intervention must have.

- Write specific, detailed outcome measures for each goal- objective and quantifiable
- Size, function, date in use, etc...
- Efficiency and client satisfaction
- Measure before and after intervention so it is clear when success has been achieved
- What is the passing grade for the AT?
- Brainstorming outcome measures video <u>https://youtu.be/yNVtpWJeV8g?si=2kQJC_LJgBtygohF</u>

Step 4: Outcome Measures

- 1. Clearly state the goal: Sell honey at public events.
- 2. Compare task before and after the intervention: Grandmother helps haul honey and set up all events.
- 3. Write goal's outcome measures.
- 4. End result ability to do task: Mary can load 7 55pound crates of honey, 3 folding tables, a bar stool, tablecloths and display racks; haul it to the event, set up the tables, and sell honey independently without lifting honey crates and minimal lifting supplies.
- 5. Specific time frame and skill. By July 1st haul honey to 4 events per month.
- 6. Describe the success passing grade. Grandmother helps 1 day per/month and Mary's back pain is decreased.

| 2 | t-term objectives client wishes to establish in each priority goal area . (Add extra pages | as necessary.) |
|------------------|--|----------------|
| . Goal are | a ranked No. 1: Improve ability to effectively and safely use farm equipment. | |
| | ERM OBJECTIVES | |
| a. Gain | more independence getting in and out of machinery. | |
| ь. Be ab | ole to hitch and unhitch implements independently. | |
| c. Insta | II a manlift on the International tractor. | |
| d. Modi | ify the riding mower so client can do more of yard work (see photo 4). | |
| | | |
| SHORT- | TERM OBJECTIVES | |
| a. <u>Refa</u> b | pricate some of the hand controls currently on the International tractor. | |
| b. Look | at various hand controls made by others to potentially improve client's hand contr | ol designs. |
| c. Make | e time in order to do the hand control improvement. | |
| | | |
| d. Work | k on extending the ignition switches on the International tractor so that it is easier | to reach. |
| . Goal are | a ranked No. 2: Improve ability to more successfully manage farm operation. | |
| LONG-T | ERM OBJECTIVES | |
| a. Make | equipment more accessible so that client can be more hands-on with the entire fa | rm operation. |
| b. Bette | er organize and upgrade the farm business records. | |
| c. Explo | pre different methods of marketing the corn and soybeans in order to maximize pro | ofitability. |
| 4 | | |
| · | | |

"Don't Reinvent the Wheel"

Resources help us know current information on AT products and services. We can be aware of possible interventions that will best meet the farmer's needs.

Step 5: AT Options FINALLY!!!

- List several intervention options with attributes that could meet the outcome measures
- Explore broad range of options; low tech to high tech, off-theshelf to custom
- Have subsequent meetings with the team after researching options
- Consider both short and longterm consequences
- Assure compatibility with existing equipment and consider impact of changes on existing function.
- Perform trials of possible interventions.



Step 5: AT Options FINALLY!!!

| Main | Menu |
|-------|------|
| maiii | monu |

Home

About AgrAbility

State Projects Directory

The Toolbox AT Database

Resources

Veterans &

Beginning

Farmers

Funding

Assistance

News

Online Training

AgrAbility National Training Workshop (NTW)

THE TOOLBOX Assistive Technology Database

Back | Search | View by Category | Technical Articles

Crop and Materials Handling/Storage

Gardening

- Lawn Care
- Livestock Handling and Housing
- Orchards, Nurseries, and Vineyards
- Outdoor Mobility
- Outdoor Recreation
- Safety and Health
- Shops and Shop Tools
- Skid-Steer Loaders and Other Self-Propelled Equipment
- Specialty Enterprises
- Tractors and Combines
- Trucks
- Utility Vehicles, ATVs, and other Off-Road Vehicles
- Vegetable, Small Fruit, and Flower Production
- Woodlots and Forestry

Back | Search | View by Category | Technical Articles

ADA Guideline Examples

- Ramp slope: 1 inch rise per 12 inches of run
- ▶ Door thresholds no greater than ³⁄₄ inch
- Doors no less than 32 inches wide
- Pathways at least 36 inches wide
- Reach no more than 52 inches up, sideways 24 inches, down 18 inches
- https://www.ada.gov/law-and-regs/design-standards/2010-stds/

Step 5: AT Options bedslide

A bedslide is a platform that mounts in the bed of the pickup truck or van floor. It slides out the back and pushes into the vehicle. The bedslide can be loaded with heavy materials up to 1000 pounds. It allows Mary to load her van without climbing in or reaching. She can slide the floor out, load it, and slide it back in without climbing. Mike's Auto will need help setting up to be a vendor with the state.



ESTIMATED COST: \$2000

Benefits & concerns

- Raises the floor 5 inches decreasing cargo space
- Tables lean against the van wall that cannot slide
- Still requires lifting crates of honey

Step 5: AT Options - low tech plywood

Benefits & concerns

- Simple, quick, low cost
- Still requires some lifting honey crates into the van.
- Temporary improvement



Step 6: Revisit the goals

Restate the preliminary goals.

- Revise goals that may have changed as a result of the information and analysis
- Assist to resolve trade-offs and prioritize goals
- List chosen goals
 - 1. Make a living by producing and selling honey.
 - 2. Operate the apiary.
 - 3. Process they honey.
 - Sell honey at events. Time sensitive and income generating.

Step 5: AT Options cargo trailer

BARRIER TO EMPLOYMENT: lifting, carrying and loading honey/products for sales venues

DESCRIPTION:

The enclosed market transport trailer with a tailgate ramp will enable Mary to haul materials and set up sales displays without bending, lifting, twisting, and carrying. A market transport trailer is lower to the ground than a pickup truck or van so loads on carts can be rolled up a tailgate ramp instead of lifted and carried by hand. Stock carts and display carts loaded with honey and other display materials can be rolled up the ramp into the trailer. The same carts can be rolled back down the ramp when at the sales venue. Pallets of honey and other materials during processing can be set on the trailer tailgate, then rolled into place in the trailer with a pallet jack with minimal lifting.



Benefits & concerns

- Large space for cargo but requires truck to pull.
- Has multiple uses during processing season
- Requires minimal lifting crates of honey

Step 7: Team Consensus

- Select the most desirable intervention option
- Confirm the effectiveness of the option to meet the established goals
- Gain consensus on the selected goals from the consumer and team members
- The consumer makes the final decision
- You are now ready to write the report!



The Service Delivery Cycle: Implement

- Referral finding appropriate candidates for AT interventions by phone interview
- AT Assessment and evaluation of farm site with rehabilitation professionals
- Make a plan listing outcome measures and recommending AT interventions
- Implement the plan with the farmer, funders, AT suppliers, fabricators
- Follow-up to make sure AT is functioning as intended and outcome measures are met
- Follow along to revisit steps 2,3,4 as needed

Funding AT

- Farmer DIY inventions and self pay
- AgrAbility cannot provide direct funding or equipment
- State Vocational Rehabilitation (VR)
- Auto Insurance, medicare, medicaid
- Veterans Administration (VA)
- Non-profit organizations, Foundations, Crowd funding



Vocational rehabilitation counselor interview

- ATP Certification necessary
- Actual farm income data required from W-2 pay stubs or IRS schedule F
- Actual medical records provided by doctors and rehabilitation services.
- Activity essential for Mary to do independently for business success
- Is the business viable? Legal or regulatory challenges?
- 2 to 3 hours on site with VR counselor
- Serious discussion about realistic goals compared to medical conditions and business viability



Vocational Rehabilitation Services (VR) http://www.agrability.org/contact-lists/

- A person must have a disability and require VR services to prepare for working, find a job, or remain employed
- Eligibility is based on diagnosed medical conditions causing functional limitations that are barriers to a person's earning minimum wage ½ time
- Assessment and Individual Plan for Employment (IPE) describing barriers to employment, interventions, and providers with written price quotes for services
- Informed choice so the farmer can make good decisions.
 - Implement the plan by purchasing AT and services.
 - Follow up services to confirm continued successful employment using the AT to accomplish necessary tasks



AgrAbility Considerations before for On-site Visits Inside home

Preparation for assessment

- Multiple people
- Client stakeholders
- Pictures ask
- Dogs
- Firearms
- Unwanted sexual advances
- Vehicle placement
- Check-ins

- Alcohol and drugs
- Odors
- Aggressive or agitated clients
- Equipment don't get run over
- Restroom
- Outerwear
- Biosecurity
- Behavioral health
- Duty to report

Don't forget who we're serving

The farmers with disabilities are the primary team members. They have the right to know all about the available AT and services, advocacy, independence, and due process for disagreement and opinions about the AT!

Worksite Assessment Equipment







Questions?

Ned Stoller Agricultural Engineer & Assistive Technology Professional

> 1-800-956-4106 nstoller@essmichigan.org www.MichiganAgrAbility.org

Thank you for support from RESNA and AgrAbility! The National AgrAbility Project is supported by AgrAbility Project, USDA/NIFA Special Project 2021-41590-34813.

Liability

- Liability is all about managing risk agriculture is inherently risky
- You must be aware of both "professional" and "product" liability and/or risk.
- Products and practices pose professional liability risks for AgrAbility staff
- One of the best ways to manage or limit your liability or risk is to never practice outside your educational or "experiential" role.
- Document, document, document
 - Professional liability insurance
 - Follow the "safety hierarchy"