Module 2: Waste-to-Resource Strategies in Agri-Food Systems
Hands-On Activity: Cafeteria Waste Audit

Instructions Worksheet for HOA Module 2 Lesson A - HOA A1
Cafeteria Food Waste Audit
Grouping: Pairs or small groups (3-4)
Time: 35-45 minutes

Precautions & Safety:

- **Food Handling:** Wear gloves when handling food waste; wash hands thoroughly after the activity.
- **Bucket Safety:** Do not overfill buckets; lift carefully to avoid spills or injury. Keep liquid buckets only half full, as they get very heavy usda.gov.
- **Hygiene:** Keep non-food trash separate from food waste. Maintain clean surfaces and follow the school cafeteria safety rules for sanitation.
- **Scale Use:** Place buckets securely on the scale before weighing to prevent tipping.
- **General Safety:** Wipe up any spills immediately (have towels ready ccmedia.fdacs.gov). Ensure all team members are aware of and adhere to the safety guidelines.

Materials:

- 5-12 large buckets (~5 gallon size), one for each food category (e.g., entrées, fruits, veggies, milk, etc.)
- Clear labels or photos of each food item for bucket labeling (pictures help younger students sort correctly) wastenot-wantnot.eu
- Gloves (for anyone handling food), clipboards, and pens/pencils
- Trash bags and cleaning supplies for easy cleanup
- A luggage or bathroom scale for weighing the buckets
- Signs to direct students to the audit station(s) and instruct them on what to do

Objective: Work in teams to conduct a **cafeteria food waste audit** by collecting and weighing uneaten food. Identify which foods are wasted most and investigate *why* (what reasons students have for not eating certain items). Then reflect on strategies to reduce food waste, improve student nutrition, and enhance environmental sustainability by moving from a linear "take-make-waste" approach toward a more circular system of reuse. This activity will help you view your school cafeteria as part of a food system, where inputs (food served) become outputs (waste), and there are opportunities to close the loop by turning "waste" into resources. *(Adapted from the USDA/EPA 2017 **Student Food Waste Audit** guide epa.gov.)*

Instructions (Video is available HERE):

- **Step 1 - Preparation (Day Before the Audit):** *Plan and Set-Up*

  - Walk through the cafeteria to choose a convenient location for the audit station(s). Ideally, set up near where students typically return trays or throw out trash, to capture all waste wastenot-wantnot.eu. If your school is large, you may need more than one station (about 1 station per 200 students is recommended wastenot-wantnot.eu).

  - Obtain or take photographs of each lunch menu item to create labels for the buckets. This makes it easy for everyone to know which bucket is for which food wastenot-wantnot.eu. For example, you might have one bucket for all fruits, one for vegetables, one for entrées, one for milk/drinks, and one for "unopened" items (like whole fruits or sealed packages). Decide on the

food categories you will measure based on the menu.

- ○ Meet with the cafeteria and custodial staff to explain the purpose of the audit and to coordinate logistics. Ensure they know when and where you'll be conducting the audit and how waste will be collected and disposed of. Garnering their support early will make the process go smoother.

- ○ Gather all materials and have them ready. Print out data logging sheets (the **Food Waste Log** and **Student Feedback Log**) for recording weights and survey responses.

- ● **Step 2 - Setup (Morning of Audit Day):** *Get Ready*

  - ○ Before lunch begins, set up your audit station tables. One table will be the "survey station" where **Interviewers** talk to students and record feedback, and the other will hold the **buckets** where **Food Separators** will sort the waste wastenot-wantnot.eu. Post your directional signs so that as students finish lunch, they bring their trays to *you* instead of the trash can. (Consider covering or temporarily removing the normal trash bins so students don't accidentally use them.)

  - ○ Weigh each empty bucket and record its *starting weight* on your log sheet (you will subtract this tare weight later to get net food weight) usda.govccmedia.fdacs.gov. Mark each bucket with its food category label (use both words and the photos you prepared) and set them on the table.

  - ○ Introduce yourself and your team to the cafeteria supervisors or any volunteers helping. Remind the cafeteria staff and custodians about today's audit and confirm the location for transferring the collected waste (e.g., into a larger bin, compost, etc.).

  - ○ Just before the lunch period, brief your student volunteer team on their roles so everyone is clear: who will interview classmates, who will handle food separation, and who will manage the scale and recording data. Ensure each volunteer has gloves and either a clipboard or a notepad. Assign one person as the **team leader** to oversee and assist as needed (this could be you or a lead volunteer).

- ● **Step 3 - During Lunch (Data Collection in Action):**

  - ○ **Interviewers:** As students arrive with their trays, greet them and explain that you're conducting a brief survey about their lunch experience. Politely **ask each student** about the specific foods they did not finish. For each leftover item on their tray, ask something like: *"Why didn't you finish your [item]? Did you not like the taste, or were you full, or was there another reason?"* wastenot-wantnot.eu Encourage *specific* responses ("it was too sour," "I didn't have time," "I prefer it cold," etc. rather than just "I don't know"). **Record** one clear reason for each item on the **Student Feedback Log** under the appropriate category. *Important:* Do **not** take the tray from the student until after you've asked about their leftovers. This ensures you capture their reasons first.

  - ○ **Food Separators:** After the interviewers finish, have the student **drop off their tray** on the sorting table usda.gov. Now, scrape or pour each leftover food item into the correct labeled bucket. (If you're unsure which bucket an item goes in, ask the team leader or check the labels.) Place any **non-food trash** (wrappers, utensils, cartons **that still have liquid**, etc.) into the regular garbage can; *do not* let non-food items go into the food buckets ccmedia.fdacs.gov. If you encounter *unopened* food or drinks (for example, an untouched apple, an unopened milk carton, a factory-sealed granola bar), put those in the designated **"Unopened"** bucket or area; these might be suitable for sharing rather than compost/trash.

  - ○ Work efficiently to keep the line moving, but do so carefully to avoid mixing up items. **Count each tray** that comes through (or use a tally counter). You'll need the total number of students

who participated for your data.

- ○ The **Team Leader** should float between interviewers and separators, making sure everything is running smoothly. Double-check that interviewers are writing down useful reasons (noting any common themes), and that separators are sorting correctly usda.gov. The leader also keeps an eye on the buckets: **when a bucket is getting close to full, notify the team leader to weigh it** before it overflows usda.gov. (For liquid waste like soup or milk, weigh and empty the bucket when it's about half full to avoid spills usda.gov.)

- ● **Step 4 - Weighing & Recording Data:**

  - ○ As buckets fill up, use the scale to **weigh each bucket** and record the *ending weight* on the Food Waste Log. Subtract the bucket's empty weight to get the **net weight of the food waste** in that bucket. Record that as well. If you had to empty a bucket mid-way, start a new line on the log for additional waste in that category (you'll sum them for total).

  - ○ Continue until the lunch period is over and **all trays have been processed**. At the very end, do one last weigh of each bucket (even if not full) to capture the final amounts. Don't forget to record the **total number of student trays/audits** conducted. This gives context (e.g. "X lbs of waste from Y students").

  - ○ Secure the data: you should now have a complete log of how much waste (by weight) was collected for each category, and a list of reasons students gave for their leftovers. **Congratulations, you have created a snapshot of your cafeteria's waste on this day!** 🎉 Take a moment to thank all the volunteers and cafeteria staff for their help in making the audit successful.

- ● **Step 5 - Reflection & Analysis (Post-Audit):** *Make Sense of the Data*

  - ○ Gather your team (and class) to **review the data** you collected. First, identify **which foods/categories were wasted the most**. Create a simple chart or graph to visualize the results; for example, a bar graph showing total waste (in lbs or kg) for entrées vs. fruits vs. veggies, etc., or a pie chart of the whole waste breakdown. Visualizing the data can make patterns very clear.

  - ○ Look at the reasons students gave. What were the **top reasons** for waste? Were there common themes, like temperature (food too cold/hot), taste, size of portions, timing (not enough time to eat), or students not wanting a required item? List the most frequent reasons for each category (you might find, for instance, many said they "weren't hungry for the apple" or "didn't open the milk because they don't like milk"). These insights are **crucial**, *why* the waste is happening points to solutions.

  - ○ **Brainstorm Solutions:** Based on the patterns you see, discuss as a team: *How could we reduce the waste, especially for the top wasted items?* Think creatively and consider different angles, from **behavioral "nudges"** (Lesson B concepts) to changes in how food is served or saved. For example: if many students didn't drink their milk, is it because they felt forced to take it? (Perhaps better education on "Offer Versus Serve" could help, so students know they're not always required to take milk.) If whole fruits like apples were wasted, would slicing the fruit lead to more being eaten? (One study found that slicing apples increased the number of students eating them by 73%!) If food is getting thrown out because of timing, what if **recess was held before lunch** so kids have an appetite and more time to eat? (Schools that switched to recess-first saw ~40% less food waste.) Could the menu be adjusted or made more culturally appealing if "didn't like it" is a common reason? Brainstorm at least 5 ideas, then narrow down to a couple that seem most feasible and impactful.

○ **Closing the Loop:** Also consider *what to do with the unavoidable waste* that is still generated. How can we keep food waste out of landfills? This might include starting a **composting program** for food scraps (you'll learn how to set up a simple compost *Bokashi bucket* in **Module 3**!), or setting up a **share table** where unopened items can be left for other students or saved for later sustainableamerica.org. Perhaps extra food could be **donated** to a local shelter or food pantry (as long as it's collected and stored safely). These strategies help ensure that even if some food isn't eaten at lunchtime, it feeds someone or something rather than going "to waste." In other words, try to **"close the loop"**: turn today's cafeteria waste into tomorrow's resource (like compost to grow more food, or extra snacks for students), embodying a circular food system.

Tips for Success:

- **Plan Ahead:** Coordinate with cafeteria staff and custodians a few days in advance. Their cooperation is key; they might have suggestions for the best setup or timing.
- **Clear Roles:** Ensure every volunteer understands their role (interviewer, separator, data recorder, leader) to prevent confusion during the lunch rush. You might even do a quick *practice run* or role-play before it starts.
- **Good Signage:** Clearly label buckets with large text and pictures, so participants know what goes where. Consider putting up signs or having a volunteer stand near the usual trash area to redirect students: "Bring your tray over here for the Waste Audit!"
- **Encourage Honesty:** When interviewing, create a non-judgmental atmosphere so students feel comfortable sharing true reasons (if they thought the broccoli was gross, you want to know that!). Emphasize that *any* answer is helpful and they won't get in trouble for not eating something.
- **Accurate Data:** Write measurements and answers carefully and legibly. If something seems off (e.g., a bucket weight that doesn't make sense), double-check it. The better your data, the more credible your findings will be when you present them.
- **Stay Organized:** It can get hectic; keep the table organized (maybe one volunteer just manages the log sheet). This will prevent mistakes like forgetting to log a weight or mixing up notes.

Skills You'll Use:

- **Data Collection & Categorization:** Identifying different types of food waste and measuring their amounts quantitatively (using weighing scales).
- **Survey & Observation:** Conducting short interviews to gather qualitative data (reasons behind behaviors) and recording observations systematically.
- **Analysis & Systems Thinking:** Analyzing patterns in both numbers and responses to understand *why* waste happens, and seeing the cafeteria as a part of a larger food system (inputs -> outputs -> feedback loops).
- **Problem-Solving:** Applying evidence-based reasoning to suggest and design improvements, from small behavior changes to system-wide solutions, that can make our food system more sustainable and circular.

Looking Ahead: The cafeteria audit is just the beginning! In **Module 3**, we'll explore how to turn collected food scraps into valuable compost using a Bokashi bucket (keeping those nutrients in the food loop). In **Module 5**, we'll connect food waste to climate issues. For example, food rotting in landfills produces methane gas, a potent greenhouse gas sustainableamerica.org. And in **Module 6**, we'll zoom out even further, examining our school's role in urban, rural food systems and how innovations (like school gardens or local farm partnerships) can use waste as a resource. Each step builds on what you've learned here: that **waste isn't just waste, it's a resource out of place!** 🌱

Source: *Adapted from the USDA/EPA **Guide to Conducting Student Food Waste Audits: A Resource for Schools (2017)** epa.gov, with permission.*