

Summary of Food Waste Resources and Tools for School Nutrition Programs

This resource list provides a selection of reports, articles, and tools that school nutrition professionals can utilize to understand the issue of food waste and will assist them in implementing strategies to reduce food waste. The information is organized using the following categories: school nutrition and food waste; food waste and food safety; school nutrition, food waste, and food safety; and food waste general information.

A comprehensive online search using Google, Google Scholar, AGRIS, EBSCO, PubMed, ProQuest Research Library, and Science Direct was completed between December 2014 and February 2017 to identify resources, information and tools related to food waste in school nutrition programs. Keywords for the searches included: food waste; reducing food waste; food waste in school nutrition programs; school food waste; school waste; lunchroom waste; food safety and food waste; and food waste, food safety, and school nutrition. Resources and tools were included in the list if they met one or more of the following criteria: the main topic of the resource or tool focused on one of the above topics, the resource or tool was applicable to school nutrition programs, the resource or tool was available in English, and the resource or tool was publicly available online.

The resources included in the table provide useful information for school nutrition professionals. A description of the report, article, or tool is included in the table and a link to access the resource. The description provides general information about the document that will allow school nutrition professionals decide if the resource will meet their needs. Information related to steps in the flow of food and the level in the food waste hierarchy benefits, and challenges are addressed. The information and the links on the list will need to be updated quarterly.

Figure 1 presents a Venn diagram with a visual representation of the number resources in each one of the categories. Eleven resources are included in the school nutrition programs and food waste section. The sections of food safety and food waste and foods, safety, food waste, and school nutrition programs consist of four resources. Eight resources are included related to general information about food waste. Limited or no resources are available in the areas of pre-consumer food waste, source reduction and food safety, and shared tables.

Category: School Nutrition Programs and Food Waste

Title	Description	Steps in the Flow of Food Addressed	Level of Food Waste Hierarchy Addressed	Additional Benefits	Challenges Addressed	Source
Plate waste in school nutrition programs: Final report to Congress (E-FAN-02-009)	A review of literature on plate waste in schools including determination of the amount of plate waste, reasons for plate waste, and strategies to reduce plate waste in schools is presented in this Congressional report . Reasons identified for plate waste generation were student food item preferences, time constraints for eating lunch, varying student energy needs and appetites, and availability of competitive foods. Strategies for reducing plate waste discussed included: implementing offer versus serve, rescheduling lunch times, improving quality and variety of foods offered, and providing education on nutrition.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Producing • Serving 	<ul style="list-style-type: none"> • Source Reduction 	<ul style="list-style-type: none"> • Improve quality, appearance, and/or acceptability of foods • Increase awareness of local sourcing of food • Improve lunchroom environment 	<ul style="list-style-type: none"> • Lack of knowledge about food waste 	Buzby, J. C., & Guthrie, J. F. (2002). <i>Plate waste in school nutrition programs: Final report to Congress</i> (E-FAN-02-009). Economic Research Science, USDA. http://www.d11.org/FNS/Recess%20Before%20Lunch/efan02009%20Plate%20Waste%20Study.pdf

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Food waste in schools	A summary of data collected in primary and secondary schools in England is presented in this report . Reasons for pre-consumer food waste included: forecasting errors, variety of food items offered, second helpings not allowed, limited options for re-using foods, competitive food items, and student appetite. Reasons for post-consumer food waste included: inflexibility of portion sizes, student food preferences and knowledge, and time constraints for lunch hours. Interventions described were cooking meals to order, improving lunchroom experience, and enhancing familiarity and education about school meals.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction 	<ul style="list-style-type: none"> • Improve quality, appearance, and/or acceptability of foods • Improve lunchroom environment 	<ul style="list-style-type: none"> • Lack of employee buy-in to reduce food waste • Measuring food waste 	Cordingley, F., Reeve, S., & Stephenson, J. (2011). <i>Food waste in schools</i> . Banbury, Oxon: WRAP Reports. Retrieved from http://www.wrap.org.uk/sites/files/wrap/Food%20waste%20in%20schools%20full%20report%20.pdf
School district rolls out food waste reduction	The first waste reduction and sustainability program in Southern California between the County of San Diego and Ramona Unified School District is described in this magazine article . A group of high school students who are eco-leaders operate a training and education program designed to divert waste from their school district. The program designates foods that can be donated to food recovery programs and foods that can be collected for animal feed or composting.	<ul style="list-style-type: none"> • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Composting 	<ul style="list-style-type: none"> • Identify community engagement opportunities 		Flammer, R. (2015). School district rolls out food waste reduction. <i>BioCycle</i> , 56 (3). Retrieved from https://www.biocycle.net/2015/03/31/school-district-rolls-out-food-waste-reduction/

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School food recovery programs: What are they and how do we get started?	Guidance for implementing a food recovery program in schools is presented in this article . The authors described the engagement of key stakeholders who should approve food recovery efforts. School leadership, local health departments, and child nutrition programs professionals are key stakeholders. Foods that can typically be donated to food banks are unopened or uneaten food, shelf stable items, and perishable goods.	<ul style="list-style-type: none"> • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Feed Hungry People 	<ul style="list-style-type: none"> • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Obtaining administrative support 	Gaines, A. (2016a). School food recovery programs: What are they and how do we get started? <i>Extension</i> . Retrieved from http://articles.extension.org/pages/73160/school-food-recovery-programs-what-are-they-and-how-do-we-get-started
Decreasing waste in schools: Food recycling options	Food recycling options for schools including: donating food scraps for animal feed, donating used fats and oils for biodiesel, and composting food waste are recycling options discussed in this article . All options require relationships between the school and outside supporters such as farmers and biodiesel manufacturers.	<ul style="list-style-type: none"> • Managing Leftovers 	<ul style="list-style-type: none"> • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Identifying recovery partners 	Gaines, A., & Weiner, E. (2016). Decreasing waste in schools: Food recycling options. <i>Extension</i> . Retrieved from http://articles.extension.org/pages/73370/decreasing-waste-in-schools-food-recycling-options
SKOOL Report	The School Kitchen Optimization, Organization, and Learning (SKOOL) program is described in this report . The program includes three distinct projects: Children's Awareness, Food Optimization, and Value Chain Collaboration. The goal of these projects are to reduce food waste throughout the food chain. A description of each project and	<ul style="list-style-type: none"> • Planning • Purchasing/Ordering • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction 	<ul style="list-style-type: none"> • Increase education on sustainability • Improve menu planning • Improve quality, appearance, and/or acceptability of foods 	<ul style="list-style-type: none"> • Lack of employee buy-in to reduce food waste 	International Food Waste Coalition. (2016). SKOOL Report. Retrieved from http://internationalfoodwastecoalition.org/wp-content/uploads/2016/12/IFWC_SKOOL-Report_EN2016.pdf

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	<p>resources available to assist with the implementation are provided.</p> <p>Within the Children’s Awareness project, educational resources were provided to schools to teach students about food waste reduction approaches through teaching materials related to food waste, interactive food waste assignments, posters and templates to facilitate communication among stakeholders, and guidelines to assist the implementation of the project.</p> <p>Within the Food Optimization project, notes about reducing waste and waste tracking resources are provided to schools to empower employees to monitor food waste using a food waste tracking system. Posters and templates to facilitate communication and guidelines to assist the implementation of the project are included. Within the Value Chain Collaboration project, resources are provided to schools to facilitate connections among stakeholders throughout the food chain.</p> <p>Documents highlighting specific issues and innovative solutions, suggestions about how to discuss the issues, and implementation strategies are provided for this project.</p> <p>The program described in this report included three phases: the pilot phase, the extension phase, and the rollout.</p> <p>During the pilot phase, food waste (both pre- and post-consumer) was</p>					

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	<p>recorded for six schools and six kitchens in three countries (France, Italy, and the United Kingdom) before and after the implementation of the three projects (Children’s Awareness, Food Optimization, and Value Chain Collaboration). During the extension phase, the program is expected to expand to involve new European countries. During the roll out, the program will provide an online platform for schools to easily assess the SKOOL program and allow for tracking of the overall food waste reduction achieved by participating schools.</p>					
<p>Green team campaigns to reduce lunchroom waste</p>	<p>In this document an overview of a waste reduction program in schools in Oregon is described. A step-by-step guide is presented to assist others in determining recycling options for packaging materials and food scraps. Suggestions for promoting waste-free lunches are discussed. Tools are provided to assist school nutrition professionals in implementing a similar program in their schools.</p>	<ul style="list-style-type: none"> • Serving 	<ul style="list-style-type: none"> • Composting 	<ul style="list-style-type: none"> • Reduce and recycle packaging waste 		<p>King County Department of Natural Resources and Parks, Solid Waste Division. (n.d.). <i>Green team campaigns to reduce lunchroom waste</i>. Retrieved from https://your.kingcounty.gov/solidwaste/secondaryschool/documents/green-team-lunchroom-waste.pdf</p>

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Wasted food a worry for schools	The impact of food waste in schools is described in this newspaper article . The article highlights food safety concerns when reusing leftovers or implementing share tables to reduce food waste in school foodservice programs. Some solutions suggested include: better menu planning, taste tasting programs to increase awareness of unfamiliar foods, more time for students to eat, and more choices available for students.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People 	<ul style="list-style-type: none"> • Improve menu planning • Improve quality, appearance, and/or acceptability of foods 		Plumlee, R. (2012, December 1). Wasted food a worry for schools. <i>The Wichita Eagle</i> . Retrieved from http://www.kansas.com/news/article1103940.html
How to build a smarter lunchroom: The healthy choice, the easy choice.	The Smarter Lunchrooms Movement, the Smarter Lunchroom Scorecard and Strategies, and the 4 Step Path to Building a Smarter Lunchroom are included in this handbook . The Smarter Lunchrooms Movement is designed to provide information and resources to schools to enrich a lunchroom environment that make “the healthy choice the easy choice”. The Smarter Lunchroom Scorecard describes 60 simple, no-cost or low-cost strategies schools can use to audit their lunchroom. The goal is to increase participation and consumption of healthy food and reduce food waste. In the 4 Step Path to Building a Smarter Lunchroom, steps are provided to guide schools in ensuring the lunchroom environment supports the selection and consumption of healthy food items by students.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Serving 	<ul style="list-style-type: none"> • Source Reduction 	<ul style="list-style-type: none"> • Improve lunchroom environment • Improve menu planning • Improve quality, appearance, and/or acceptability of foods 		Smarter Lunchrooms Movement, Cornell Center for Behavioral Economics in Child Nutrition Program. (2017). <i>How to build a smarter lunchroom: The healthy choice, the easy choice</i> . Retrieved from https://www.smarterlunchrooms.org/sites/default/files/documents/SLM%20Guide-RELEASE.compressed.pdf

Title	Description	Steps in the Flow of Food Addressed	Level of Food Waste Hierarchy Addressed	Additional Benefits	Challenges Addressed	Source
School lunch program: Cafeteria managers' views on food wasted by students	School cafeteria managers' perceptions of plate waste in the National School Lunch Program were described in this Congressional report . Results suggest that both the cafeteria managers' perceptions about plate waste being a problem and the amounts and types of waste varied. The primary reason cafeteria managers identified for plate waste was students focusing on socializing rather than eating. The report suggested one solution to reducing plate waste would be to allow students to select the food items they want.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Serving 	<ul style="list-style-type: none"> • Source Reduction 			United States General Accounting Office. (1996). <i>School lunch program: Cafeteria managers' views on food wasted by students</i> (GAO/RCED-96-191). Washington, DC: United States General Accounting Office. http://www.gao.gov/assets/230/222992.pdf
K-12 schools reducing, recovering, and recycling food waste webinar	In this webinar , the food waste challenge and solutions for schools to reduce, recover, and recycle food waste are described. Reduction efforts include encouraging consumption and managing more efficient kitchens. Donating food is the recovery option presented. Recycling solutions presented included composting and food used for animal feed and biodiesel.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Receiving • Storing • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Improve lunchroom environment • Improve quality, appearance, and/or acceptability of foods • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Identifying recovery partners 	USDA. (n.d.). K-12 schools reducing, recovering, and recycling food waste webinar. Retrieved from https://www.usda.gov/oce/foodwaste/webinars/K-12/Webinar.pdf

Category: Food Safety and Food Waste

Title	Description	Steps in the Flow of Food Addressed	Level of Food Waste Hierarchy Addressed	Additional Benefits	Challenges Addressed	Source
Best practices & emerging solutions guide	Information to increase awareness about the issue of food waste and resources that other companies could implement to reduce food waste are provided in the guide . Sectors of the food chain targeted in this guide are the food manufacturing and processing, transportation, and retail/restaurant industries. A toolkit that contains suggestions for conducting a food waste audit and establishing standard operating procedures for source reduction, donation, and food recycling is presented in the guide. Solutions to reduce food waste described in the guide included: strategies to overcoming supply chain challenges, practices for use by and sell by dates, strategies for recycling food waste and recovering energy from waste, and ways to redirecting materials.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Receiving • Storing • Producing • Transporting • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Measuring food waste • Identifying recovery partners • Liability concerns • Understanding food product dating 	Food Waste Reduction Alliance. (2015). <i>Best practices & emerging solutions guide</i> . Washington, DC: Food Waste Reduction Alliance. http://www.foodwastealliance.org/wp-content/uploads/2015/11/FINAL_FWRAToolkit_15.pdf
USDA food safety tips for reducing food waste and preventing illness	Food safety tips that reduce food waste for consumers are described in this blog . “FoodKeeper”, a cell phone application that assists in tracking the shelf life of perishable food items in refrigerator, freezer, and pantry is discussed. Monitoring refrigerator temperatures, ensuring proper stacking and stocking of refrigerators and freezers, cleaning refrigerators, and monitoring end-	<ul style="list-style-type: none"> • Purchasing/ Ordering • Storing • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction 	<ul style="list-style-type: none"> • Decrease utility and food costs 		Ghering, A. (2016, April 13). USDA food safety tips for reducing food waste and preventing illness [Blog]. Retrieved from https://www.foodsafety.gov/blog/2016/04/reduce-food-waste-and-prevent-illness.html

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	point cooking temperatures of food items are other suggestions presented. Even though the app is designed for consumers, the app could be a useful tool for school nutrition professionals.					
Cutting food waste and maintaining food safety	In this blog the challenges of food waste, how food waste and food safety are linked, and strategies to reduce food waste are described for consumers. An app to track the shelf life of food item is available. “Sell by”, “Use by”, and “Best by” dates are described. Raising awareness, proper purchasing, planning meals, and using leftovers are strategies discussed to reduce food waste.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction 		<ul style="list-style-type: none"> • Understanding food product dating 	Seltzer, H. (2016, September 15). Cutting food waste and maintaining food safety [Blog]. Retrieved from https://www.foodsafet.gov/blog/2016/09/cutting-food-waste
Reducing wasted food & packaging: A guide for food services and restaurants	The problem of food and packaging waste are described in this guide . A checklist for waste reduction is provided. Contents include information about source reduction strategies, food donation, compost and industrial uses, and disposal strategies.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Producing • Transporting • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Reduce and recycle packaging waste • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Lack of knowledge about food waste 	United States Environmental Protection Agency. (2014). <i>Reducing wasted food & packaging: A guide for food services and restaurants</i> (EPA-909-K-14-002). Pacific Southwest: U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2015-08/documents/reducing_wasted_food_pkg_tool.pdf

Category: Food Safety, Food Waste, and School Nutrition Programs

Title	Description	Steps in the Flow of Food Addressed	Level of Food Waste Hierarchy Addressed	Additional Benefits	Challenges Addressed	Source
Schools reduce food waste through improved front and back of the house techniques	Solutions to monitor and/or reduce pre-consumer and post-consumer food waste are discussed in this article . Solutions are presented for each point of the flow of food: planning, purchasing, receiving, storing, producing, and serving.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Receiving • Storing • Producing • Serving 	<ul style="list-style-type: none"> • Source Reduction 			Gaines, A. (2016, March 29). Schools reduce food waste through improved front and back of the house techniques. <i>Extension</i> . Retrieved from http://articles.extension.org/pages/73463/schools-reduce-food-waste-through-improved-front-and-back-of-the-house-techniques
Guidance document- Preventing food waste in the school kitchen setting: Safety guideline for child nutrition programs and school kitchen staff	Increasing waste prevention in school kitchens is described in this guidance document . The document provides information about foods that can and cannot be redistributed and provides details on the Offer Versus Serve concept to increase awareness and decrease waste.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People 		<ul style="list-style-type: none"> • Liability concerns 	Oregon Department of Education, Washington County’s Solid Waste & Recycling Department, & Washington County’s Environmental Health Department. (n.d.). <i>Guidance document- Preventing food waste in the school kitchen setting: Safety guideline for child nutrition programs and school kitchen staff</i> . Retrieved from http://www.co.washington.or.us/HHS/SWR/upload/Preventing-Food-Waste-in-the-

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						School-Kitchen-Setting.pdf
Food waste reduction efforts at the USDA	The efforts set forth by the USDA to reduce food waste are highlighted in this journal article . Resources include two infographics designed to increase awareness (Reducing Food Waste: What Schools Can Do Today and Let's Talk Trash), the FoodKeeper app , and strategies to reduce food waste. Solutions described that schools could implement included: food share tables, donation of excess food, increase awareness and education of students and staff about food waste, train schools on strategies to reduce food waste, schedule recess before lunch, and extend lunch periods.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 			Tagtow, A., Nguyen, J., Johnson-Bailey, D., & Schap, T. E. (2015). Food waste reduction efforts at the USDA. <i>Journal of the Academy of Nutrition and Dietetics</i> , 115(12), 1914-1918. doi:10.1016/j.jand.2015.10.008 http://www.andjrn.org/article/S2212-2672(15)01521-X/abstract
U.S. food waste challenge	Information about the U.S. Food Waste Challenge, reasons to reduce food waste, and strategies and resources for schools to reduce, recover, and recycle food waste are provided in this USDA document . Strategies described include: improving delivery systems, reducing batch sizes and serving, improving inventory systems, improving menu planning and leftover uses, making food more appealing to students, extending lunch periods, donating uneaten food,	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Improve quality, appearance, and/or acceptability of foods 		United States Department of Agriculture, Food and Nutrition Service. (2015). <i>U.S. food waste challenge</i> (FNS-485). Retrieved from https://doe.sd.gov/cans/documents/FoodWaste.pdf

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	composting food scraps, and converting oils for industrial use.					

Category: Food Waste General Information

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Bill Emerson Good Samaritan Food Donation Act	The Bill Emerson Good Samaritan Food Donation Act is described in this document . Definitions of key terms related to donating foods are provide. The terms apparently fit grocery product, apparently wholesome food, donate, food, gleaner, grocery product, gross negligence, intentional misconduct, nonprofit organization, and person are included. Liability for damages from donated food and grocery products are identified.	<ul style="list-style-type: none"> Managing Leftovers 	<ul style="list-style-type: none"> Feed Hungry People 	<ul style="list-style-type: none"> Identify taxation benefits 	<ul style="list-style-type: none"> Liability concerns 	Bill Emerson Good Samaritan Food Donation Act, 42 U.S.C. § 1791 (2010). Retrieved from https://www.gpo.gov/fdsys/pkg/USCOD-E-2010-title42/pdf/USCOD-E-2010-title42-chap13A-sec1791.pdf
The Bill Emerson Good Samaritan Food Donation Act: Protecting America's Food Donations	Information provided in this infographic is related to the Bill Emerson Good Samaritan Food Donation Act. The purpose of the act is to increase food donations to nonprofit organizations by protecting both donors and recipients. The act covers the following food categories: dry, refrigerated and frozen food; grocery products,	<ul style="list-style-type: none"> Managing Leftovers 	<ul style="list-style-type: none"> Feed Hungry People 	<ul style="list-style-type: none"> Identify taxation benefits 	<ul style="list-style-type: none"> Liability concerns 	Food Waste Reduction Alliance. (n.d.). <i>The Bill Emerson Good Samaritan Food Donation Act: Protecting America's Food Donations</i> . Retrieved from http://www.foodwas

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	health and beauty aids, over-the-counter items, fresh produce, prepared foods and perishable goods, and semi-finished products. Tax benefits of the 1976 Tax Reform Act and the 2015 PATH Act are described.					tealliance.org/wp-content/uploads/2012/07/FOOD-WASTE-REDUCTION-ALLIANCE.pdf
The business case for reducing food loss and waste	Reasons businesses and non-profit organizations should reduce food waste are discussed in this report . Financial benefits, waste regulations, ethical responsibility, stakeholder relationships, food security, and environmental sustainability are described. Decision makers in the public and private sector are urged to set reduction targets, measure food waste and quantify food loss, and implement actions to reducing food waste and loss.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Transporting • Producing • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals, Industrial Uses 		<ul style="list-style-type: none"> • Understanding food product dating 	Hanson, C., & Mitchell, P. (2017). The business case for reducing food loss and waste. Retrieved from https://champs123blog.files.wordpress.com/2017/03/report_-_business-case-for-reducing-food-loss-and-waste.pdf
Reducing food loss and waste (Creating a Sustainable Food Future Installment 2)	The scope of food waste problem, definition of food waste, and the importance of and strategies to reduce food waste are presented in this working paper . Strategies discussed include: developing a protocol for measuring food waste, setting reduction target goals, investing in postharvest reduction techniques in developing countries, creating entities devoted to reducing food waste and supporting	<ul style="list-style-type: none"> • Storing • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People 		<ul style="list-style-type: none"> • Understanding food product dating 	Lipinski, B., Hanson, C., Lomax, J., Kitinoja, L., Waite, R., & Searchinger, T. (2013). <i>Reducing food loss and waste (Creating a Sustainable Food Future Installment 2)</i> . Washington, DC: World Resources Institute. Retrieved from http://www.wri.org/s

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	collaborative initiatives to reduce food waste.					ites/default/files/reducing_food_loss_and_waste.pdf
A roadmap to reduce U.S. food waste by 20 percent	An economic study and action plan were designed to raise awareness about food waste and provide strategies to reduce food waste. Food waste represents an economic, social, and environmental problem. Solutions to prevent food waste including standardizing date labeling, providing consumer education, and adjusting packaging options are discussed in the action plan.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Receiving • Storing • Producing • Transporting • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals, Industrial Uses • Composting 	<ul style="list-style-type: none"> • Reduce and recycle packaging waste 		ReFED. (2016). <i>A roadmap to reduce U.S. food waste by 20 percent.</i> Retrieved from https://www.refed.com/download
Let's glean: United we serve toolkit	In this document, a step-by-step guide for initiating a gleaning program and a list of resources are provided. Implementing a gleaning program requires cooperation and positive relationships among gleaners, donors, and volunteers.	<ul style="list-style-type: none"> • Managing Leftovers 	<ul style="list-style-type: none"> • Feed Hungry People 	<ul style="list-style-type: none"> • Identify community engagement opportunities 	<ul style="list-style-type: none"> • Identifying recovery partners 	USDA. (n.d.). <i>Let's glean: United we serve toolkit.</i> Retrieved from http://www.usda.gov/documents/usda_gleaning_toolkit.pdf
USDA and EPA join with private sector, charitable organizations to set nation's first food waste reduction goals	A description of the national food waste reduction goal set by the USDA, EPA, private sector, and charitable organizations is discussed in this news release . The goal is a 50% reduction of food waste in the U.S. by 2030. Reduction initiatives include: U.S. Food Waste Challenge, a food tracking application, and		<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People 			USDA. (2015). <i>USDA and EPA join with private sector, charitable organizations to set nation's first food waste reduction goals</i> [Press release No. 0257.15]. Retrieved from http://www.usda.gov

Title	Description	Steps in the Flow of Food Addressed	Level of Food Waste Hierarchy Addressed	Additional Benefits	Challenges Addressed	Source
	upgraded ChooseMyPlate.gov website.					/wps/portal/usda/usda/ahome?contentid=2015/09/0257.xml
A Guide to Conducting and Analyzing a Food Waste Assessment	A step-by-step guide to conducting a food waste assessment is provided in this document. The steps described include: developing target goals, completing a pre-assessment questionnaire, planning the assessment process, gathering supplies to implement assessment, conducting the assessment, collecting data, and analyzing and reporting results. A pre-assessment questionnaire, data recording worksheet and a standard volume to weight conversion factor resources are provided in the appendix.	<ul style="list-style-type: none"> • Planning • Purchasing/ Ordering • Storing • Producing • Transporting • Serving • Managing Leftovers 	<ul style="list-style-type: none"> • Source Reduction • Feed Hungry People • Feed Animals • Industrial Uses • Composting 	<ul style="list-style-type: none"> • Reduce and recycle packaging waste 	<ul style="list-style-type: none"> • Measuring food waste 	U. S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. (2014). <i>A Guide to Conducting and Analyzing a Food Waste Assessment</i> (EPA-530-F-15-003). Retrieved from https://www.epa.gov/sites/production/files/2015-08/documents/r5_fd_wste_guidebk_020615.pdf

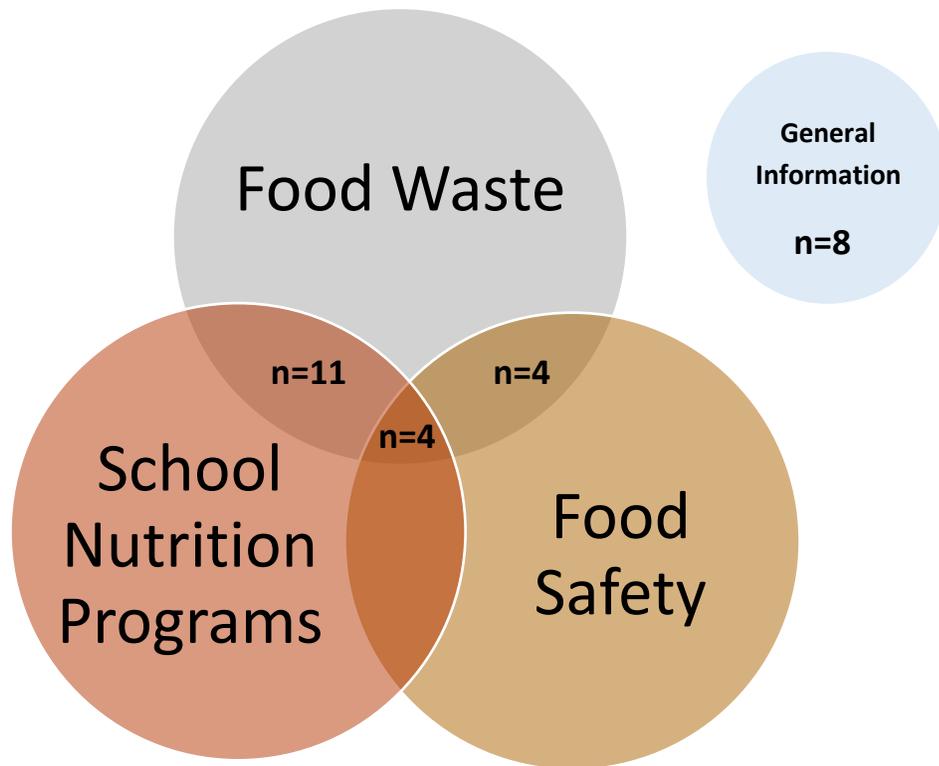


Figure 1. Resources and reports related to the interconnection between food waste, food safety, and school nutrition programs