The U.S. government welcomes the Report on Food Losses and Waste in the Context of Sustainable Food Systems (hereafter “the Report”), which addresses critical challenges to global food and nutrition security. Reducing food loss and food waste can help improve food and nutrition security across developing and developed countries. To strengthen the zero draft, the U.S. government now submits to the HLPE: general comments; answers to the six questions asked by the High-Level Panel of Experts (HLPE); and line-by-line edits, questions, and comments.
GENERAL COMMENTS

(1) The Report provides a good overview of the sources of food loss and food waste (FLW) and addresses important issues often excluded from the discussion. These issues include needs for infrastructure and local/ regional solutions, as well as nutrient loss and the role of food safety. The report already identifies a thorough list of causes and drivers of FLW at various stages of the value chain, and it would be useful for a future draft to clearly indicate the data constraints at each step of the supply chain analysis.

(2) The Report addresses the lack of reliable, comprehensive data on FLW, which is a significant constraint to analyzing the causes and drivers of FLW and to assessing the costs and benefits of measures to reduce loss and waste. The Report could also provide a discussion of data needs and recommendations on how to approach collecting relevant and timely data from diverse stakeholders. An accurate picture of the extent and causes of FLW is critical to devising effecting strategies.

(3) The Report may benefit from distinguishing between food loss and food waste, given the distinct causes, definitions, challenges, and potential solutions for each issue. Regarding the terms, “food loss” and “food waste,” the Report’s definition may be confusing to some readers, since other alternative definitions are used and accepted in the literature. (For example, the FAO focuses on wastage, as demonstrated here.) As further explained below, the Report should also reflect the wide variety of options available, without endorsing any particular technology, as well as the role of the consumer and possible behavioral changes for successful food loss reduction. In this vein, education and technology transfer tools may be identified as key tools for promoting economic development.

(4) The Report will benefit from focusing more narrowly on the issue of food loss and waste. The current draft may be shortened considerably by eliminating or reducing the discussions focused on issues with no direct relationship to food loss and waste. These sections are identified in detail below.

(5) The Report will also benefit from developing a more coherent economic/social model of food waste. The idea that all food waste is “inefficient” serves as an underlying assumption adopted throughout the Report, except in the section on economic aspects, where the issue is treated with more nuance. Even the most efficient food systems produce food loss and waste. An economic/social model that explicitly examines the difference between the private and social costs of food waste would help provide a more consistent analysis.
The United States government agrees that the sustainability framework, when substantiated with concrete examples, is a useful approach to analyzing FLW. The analysis would be enhanced by incorporating the discussion of economic trade-offs currently in section 3 into section 1. This would make the discussion of impacts of FLW on the sustainability of food systems (section 1.3.2) and on food security (section 1.3.3) much more robust. It would also provide a more complete context for the discussion on causes and drivers that follows in section 2. The sustainability framework, when combined with concrete examples, helps to provide flexible options to address specific opportunities and constraints, as well as actors and incentives, varying from market to market.

Four U. S. policies/programs should be added to the section on public policies for reducing food loss and waste:

- The U.S. Food Waste Challenge, which was launched by the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) in June 2013, calls on entities across the food chain to reduce food loss and waste in the United States; recover wholesome food for human consumption; and recycle discards to other uses including animal feed, composting, and energy generation. The goal of the U.S. Food Waste Challenge is to lead a fundamental shift in how food and food waste is managed in the United States. To join the Challenge, participants list the activities they will undertake to help reduce, recover, or recycle food waste in their operations in the United States. The Challenge includes a goal of 400 partners by 2015 and 1,000 by 2020. The U.S. Food Waste Challenge is bolstered by the EPA’s Food Recovery Challenge, which offers participants access to data management software and technical assistance to help them quantify and improve their sustainable food management practices.

- The Bill Emerson Good Samaritan Food Donation Act, passed in 1996, provides civil and criminal liability protection to food donors. Its objective is to encourage the donation of food and grocery products to qualified nonprofit organizations. Under this Act, as long as the donor has not acted with negligence or intentional misconduct, the company is not liable for damage incurred as the result of illness.

- Internal Revenue Code 170(e)(3) provides enhanced tax deductions to businesses to encourage donations of fit and wholesome food to qualified nonprofit organizations serving the poor and needy. Qualified business taxpayers can deduct the cost to produce the food and half the difference between the cost and full fair market value of the donated food.
• The *U.S. Federal Food Donation Act of 2008* specifies procurement contract language encouraging federal agencies and contractors of federal agencies to donate excess and otherwise discarded wholesome food to eligible nonprofit organizations to feed food-insecure people in the United States.

**HLPE QUESTIONS FOR CONSULTATION**

(i) How to measure Food Losses and Waste (FLW)? FLW can be measured from different perspectives (weight, caloric and nutrition value, monetary value…) with different approaches presenting pros and cons, and methodological issues. Do you think that the V0 draft covers properly the aspects of FLW measurements, including nutrient losses? Is there additional evidence about estimates of past and current food losses and waste, which would deserve to be mentioned?

**U.S. Response:** The V0 draft attempts to clarify how FLW can be measured. However, in describing the direct definition of FLW, additional examples would be helpful. The HLPE position on the harmonization of methodologies needs to be clarified, especially with respect to consumer data and trends on FLW in developed countries, as well as post-harvest loss (PHL) in developing countries. Does the Report advise that harmonization be undertaken by civil societies, governments, and smallholder farmers? What are the costs and benefits to such harmonization and protocols, and who profits from them? What are the roles for corporations and private-public partnerships?

(ii) What are the key policy aspects to reduce food losses and waste in order to improve the sustainability of food systems, in different countries and contexts? Is there evidence about the potential of economic incentives, and which ones (taxes, etc.)? What margins for policies in the context of food safety laws and regulations, such as expiration dates?

**U.S. Response:** The Report provides substantial information on the causation and intervention strategies of various FLW/PHL situations. The V0 draft does a good job stating how strategies vary based on region and context. However, the HLPE should also take care to not side with one particular position on food systems and their capacity to address FLW. The HLPE position should note that local, regional, and globalized food systems offer both advantages and challenges to reducing FLW, based on region, culture, and context, which is not clearly acknowledged.
The Report could also highlight the roles of education, capacity-building, training and extension services. These issues are given very little weight, though considered primary components of technology transfer practice. Joint efforts by all stakeholders, through education and knowledge sharing, will clearly affect long-term positive results and maintaining the sustainability of food systems.

Furthermore, the Report could emphasize the need for diverse behavioral change mechanisms as a tool for reducing FLW. Many of the reasons for food waste mentioned in the Vo draft are linked to how food is utilized for human and secondary purposes, especially at the consumer level. Improving behavioral change and the related capacity building should be explained further in this report. At the same time, the Report would benefit from avoiding prescriptive policies for specific technologies used in narrow contexts.

Increased responsible agricultural investment (in the context of both sustainable food systems and food security) may be identified as a key policy goal in reducing FLW. As briefly explained in the Vo draft, overall investments in agriculture by corporations, civil societies, and governments may help abate local and regional issues. However, the document may also explain how responsible investment by stakeholders (corporations and advocacy organizations, for example) may reduce negative environmental and social impact of FLW.

Tax incentives and liability protection for companies donating food can also encourage food donations. These policies have been credited with helping to stimulate the large quantities of food donated to U.S. food banks and pantries.

(3) Can respondents submit concrete initiatives or successful interventions having reduced food losses and waste, currently taking place, conducted by governments, stakeholders, private sector, civil society?

U.S. Response: The Report will benefit from citing concrete interventions and initiatives from various stakeholders. Two examples include:

USAID/Ethiopia’s Feed the Future (FtF) Program through its Agribusiness and Market Development (AMDe) project constructed four sesame warehouses with a capacity of 5,000 MT each and plan to construct an
additional seven maize warehouses of 5,000 MT the following year through a cost-share programming.

The World Food Program's (WFP) Purchase for Progress (PfP) program began purchasing contracted maize in 2013 from farmers' cooperative unions and will continue through 2016. By 2016, WFP is expected to purchase 300,000 MT of maize from 50 cooperative unions. As a result, cooperative unions are expected to maintain the quality standard of the food purchased, and through technical support in postharvest handling and storage, be able to maintain the grain quality standards established by WFP guidelines.

Yet it is equally important to list specific issues and parts of the world where FLW is an issue and not addressed as thoroughly as needed. These problems should be clarified with information about FLW in each geographical region of the world. For example:

In Uzbekistan, comprehensive data collecting does not exist. Only a handful of packers, cold store operators, transporters, wholesalers and retailers are presently monitoring their individual cold chains in the country. This collection would assure the integrity of perishable, temperature and humidity sensitive products along the points of a cold chain production system. Additionally, comprehensive information management would protect financial interests and public health with better data documenting and auditing of the processes involved.

Additionally, more information on successful interventions, as well as civil societies, governments, universities, and other institutions working on these issues could be mentioned. Data from the ADM Institute for the Prevention of Post-Harvest Loss also provides a good example.

(4) What is the cost-benefit potential (and barrier to adoption) of different options, including technologies, to reduce and prevent food losses and waste at different stage of the food chain?

**U.S. Response:** Overall, the Vo Draft sufficiently describes the costs, benefits, and barriers of different options for FLW mitigation strategies. However, more emphasis could be placed on FLW reduction strategies in the context of food and nutrition security. We believe this is necessary as
food security is an important facet within all types of sustainable food systems.

Regarding holistic systems in agriculture, one key component of reducing PHL for both large and smallholder farmers is the use of integrated agricultural systems. This was briefly mentioned but merits elaboration. One effective strategy for mitigating risk and reducing FLW includes horizontal integration of rotations of crops with livestock systems. Depending on region and context, livestock and multi-cropping (intercropping, cover crops, yearly rotations) systems can provide many different options for producers, including reducing food waste by consumers, PHL in fields, and additional fertilizer benefits. Furthermore, crop rotations, especially in market situations provide many more options by reducing risk through natural occurrences and potential market saturation of various commodities.

(5) Cold chains and cold storage (including adaptable low-cost technologies for cold storage such as evaporative cooling, charcoal coolers, zeer pots, etc): what could be cost-effective and adapted solutions to reduce food losses and waste and to improve the sustainability of food systems, given the diversity of national contexts?

U.S. Response: The Report succeeds in introducing the positive and negative consequences of cool chain technologies, as well as the roles and responsibilities that each stakeholder therein. The subsequent draft should also include investment strategies for various stakeholders to have access to cold storage/supply chains, and how / if the hindrances can be solved by either government or civil society.

(6) Systemic approaches and solutions to reduce food losses and waste: Reducing food losses and waste is a matter which concerns the coordinated joint action (and change) by many actors, producers, retailers, consumers, private sector, governments. Which systemic solutions/approaches would be the most effective to reduce FLW, towards more sustainable food systems? At that systemic level, which drivers would create leverage for radical change?

U.S. Response: The Report should focus on reducing food loss and waste for sustainable food systems and improving global food security. Again, no particular strategy or system works in every context. The Report should reflect the need to reduce food loss and waste holistically, using
secondary non-consumable items for other purposes (i.e. livestock feed, consumer products, pet food, etc.).

Another objective should be to educate and improve perceptions of how food is utilized and saved, as well as disposed and used for other purposes, in order to reduce food insecurity, malnutrition, and poverty, while being environmentally sustainable. The scope of the Report should focus on developing a holistic approach to FLW, identifying the roles of all actors, especially women and vulnerable populations.

**Detailed Comments**

Pg 6, #41-44: Please note this sentence difficult to follow. Please add a subject for this sentence as “it” refers back to the previous paragraph.

Pg 8, chapter 1.1: Please address the missing text.

Pg 8, chapter 1.1.1: Please note this section is generally difficult to follow.

Pg 8, #4: Please substantiate the phrase: “growing concern.”

Pg 8 #5: Please clarify the phrase: “However figures differ often widely.”

Pg 8, #10: Please define the acronym FLW in chapter 1.

Pg 8, #10-15: Paragraph 1 of chapter 1 is generally difficult to follow.

Pg 9: The definitions of FLW adopted for use in the report comport with mainstream definitions and assumptions. The specification of those inefficiencies or fractions that will not be considered as food waste is particularly welcome. Much progress is possible with respect to reducing food loss and waste without delving into the hot-button issues of over-nutrition, yield gaps, animal production and meat consumption.

Pg 9, #17: Please change to “quantity.”

Pg 9, Figure 1: Please note the missing legend. It is unclear whether this chart depicts the full food consumption/waste cycle or if it is partial. It is also unclear if the chart depicts the current state of food consumption/waste or if it shows what is possible. For example, a lot of food loss/waste rots in the field or goes to landfills.

Section 1.2.1: Please consider eliminating or substantially reducing this section. None of this discussion is necessary to understand the relationship of FLW to sustainable
development, as it is clearly articulated in section 1.2.2. In addition, this discussion of sustainable development raises a number of red flags, especially the discussion of livestock production and meat consumption. There is no need to address this controversy here, particularly since the authors have already determined that their definition of FLW will not include these issues. What is the value-added of a discussion of trade and equity necessary in a Report on FLW?

Pg 10, #16: Please elaborate on why the need is “pressing.”

Pg 10, #32: Please explain what is the purpose of the evaluation - to establish programmatic priorities?

Pg 10, #27: What makes the common understanding of what "food" is inadequate?

Pg 10, Chapter 1.1.3: The text uses the term “post harvest losses,” which would be helpful to define, alongside food waste and food loss, earlier in the paper.

Pg 10, Chapter 1.1.3: Agreed to the need for harmonized methodologies and protocols.

Pg 11, #1: Please provide better explanation – does this refer to the mapping of the entire global food supply chain among all food products? For use by whom? Is this the goal, and is it ideal to map the entire chain?

Pg 11, #19: Please tighten up language in this section and elsewhere when discussing definitions; please avoid jargon as well and edit for grammar and typos. In this case on this particular line, please avoid the phrase “might be,” or on #17 of the same paragraph, “strictly speaking implies...,” is a contradictory phrase.

Pg 12, #13: This sentence is subjective and highly contextual. Please consider rewording.

Pg 12, #14: Regarding agricultural systems, please note that livestock is not a component per se of a cropping system, nor vice-versa (though they could be integrated). Livestock is a component of a much larger agro-ecological system. Ideally, one system does not hold sway over the other; crops do not have more importance in an integrated farming system than livestock. They are managed together.

Pg 12, #34: It should be assumed in this sentence that the costs of shipping and moving such food do not outweigh the benefits of receiving it.
Pg 13: Please consider eliminating all of section 1.2.4. A detailed discussion of the sustainability of local food systems and transportation footprints is not directly relevant to the issue of FLW.

Page 13, #8: This sentence is poorly structured; please consider rewording for clarity.

Page 13, #11: The term "in vain" is not correct here. Perhaps replace with "unproductively," or describe simply as a waste of resources.

Page 13, #14: Could something be said about population in this context? If the resource base is not degraded as the population is being fed (no matter how inefficient the system is), then the system is sustainable? Please clarify.

Page 13, #20: Please define “margins of improvement.”

Page 13, #36-37: Please provide a reference for this statement.

Pg 14: The long discussion of drivers in section 1.2.5 could be edited substantially to better focus on drivers with a potential impact on FLW. In each case, the connection with FLW should be made explicit. What is the expected impact of population growth on FLW? Urbanization? Population aging? The conclusion that the consumption patterns of lower income countries are beginning to mirror those of higher income countries—including food waste patterns—can be made more concisely, without a two page exposition on the evolution of food demand and food systems. The last couple of paragraphs in the section present all of the information relevant to a paper on food waste.

Page 14, #7: The position taken in this section is still debatable. Local food systems, much like global systems, offer pros and cons, and its sustainability is not defined solely by emissions and transportation. There are many socio-economic and environmental factors that play a role in peoples’ desire of expanding local food systems.

Page 14, #22: Please clarify comparability of efficiency with transport and “seasonal” with “local.”

Page 14, #42: Please provide a specific reference for this section.

Page 15, #7: Please reword; the statement is confusing describing the era.
Page 16, Chapter 1.3.1: Given that the zero draft defines the terms, food loss and food waste, differently from the FAO, the text should clearly delineate definition differences when summarizing the results from the FAO 2011 Global Food Losses and Food Waste report.

Page 16, #36-49: Please define the acronym, APHLIS, in the body of the text. It is unclear how APHLIS has defined the terms, food loss and food waste, and whether these terms mean the same thing as defined by the FAO or according to the zero draft.

Page 17, #10: “Guesstimates” is not a formal word shouldn't be used; please consider "estimates" instead.

Pg 18: The economic/social model underlying Table 1 and the discussion in section 1.3.2 is unclear and seemingly inconsistent. How does food waste lead to lower productivity? To profit reductions or loss? To larger numbers of poor people? The basic assumptions about waste and efficiency buried in these results need to be made more transparent – and assumptions equating all waste with inefficiencies need to be reexamined. Even the most efficient food systems produce food loss and waste. Reductions in FLW could raise costs and reduce revenues and profits. Reductions in food waste and hence food production could reduce employment opportunities. On the consumer side, even the most efficient consumers may generate food waste in an attempt to minimize time costs related to shopping, food prep, etc. An economic/social model that explicitly examines the difference between the private and social costs of food waste would help provide a more consistent analysis than presented here.

Pg 18, section 1.3.2: Substantial editing of this section would help reduce the size of the document and improve the flow of thought. How much of the material starting on line 45 and ending on line 4, pg 20 is really necessary for a Report on food waste?

Page 19, #30: This sentence is a very important part of the document with concepts that should further be elaborated and expanded. Please consider expansion, as well as the point made on Page 20, #4-7 (as relevant to food loss and waste).

Page 20, #28: Please note that any entity, be it government, corporation, or civil society can create data and "impacts" with environmental and social responsibility, especially since the definition of sustainability is most often defined differently than other stakeholders. This may not be as relevant as stated.

Pg 21, paragraph starting on line 18: Nice observation.
Page 21, #8: The HLPE may even go one step further; “rich” countries do not always mean equal wealth of the citizens of the country in question. Is food loss and waste based strictly on income and the development of infrastructure? Do persons of all income levels in a "developed" country lose or waste the same amount of food? What about higher income households in developing countries? This doesn’t reflect food waste in supply chains, but might be necessary to highlight these discrepancies; and how household FLW is important in all countries and economic classes.

Pg 22: The material starting at line 19 through line 15 on pg 23 is not germane for the discussion at hand. Consider deleting.

Page 22, #4-12: This paragraph is difficult to follow. It would be helpful to have the questions in bullet format or to change the format from a series of questions to a discussion.

Page 22, #26: Please consider the role of climate change in how FLW is altered, both in positive and negative consequences.

Page 22, #53: Typo.

Page 23, #12: Please edit this run-on sentence, which is not grammatically correct.

Page 24, #8: Please note this is a subjective statement, which implies that long term storage of commodities is not desirable. What about preserved or processed food products? Even if the nutrient density is reduced, consuming them as such is a much better option, depending on region and context.

Page 24, #11: Please consider avoiding statements on how natural processes are absolutely detrimental to PHL and FLW methods. Every food item and processed product will spoil eventually; and this process of decomposition itself should not be considered a FLW mechanism requiring corrections.

Page 25, #11. Please state what the carbon footprint components are in this case: the fertilizer, transportation, the carbon derived from decomposition, of all the energy used to produce the food?

Page 25, #47: In this context, should food security policy have more focus on reducing food waste, PHL, and the like, rather than programs on sustainable intensification programs? If programming on reducing food waste is perhaps the focus, rather than land intensification, will food security be better addressed?
Pg 26: The first paragraph is unclear. Why would waste “compound” the negative externalities of mono-cropping and agricultural expansion? As with the other impacts discussed in this section, the impact of food waste on biodiversity should be proportional to its share in total agricultural production. Why any larger?

Page 26, #3: Post-harvest loss (certain cereals perhaps) can in fact be beneficial to certain wildlife in certain situations, especially in integrated farming systems where certain animals can take advantage of grain spillage following harvest, or consuming plant material from certain croplands or for the use in habitats, such as pastures, which are part of the larger agroecological system.

Pg 26, #4: Please substantiate the claim that food waste represents an important part of solid waste. Here is a useful fact: “The U.S. Environmental Protection Agency estimates that in the United States food waste is the single largest component of municipal solid waste going to landfills, accounting for over 20% by weight.” Source: Environmental Protection Agency.

Page 26, #5: Please elaborate on the role of biofuels, and the byproducts that are created that are not wasted and used as livestock feed, or as fertilizers for cropland.

Page 26, #8: Please clarify that methanes and carbon dioxide gas production will always occur to some degree when food or plant material is decomposed and broken down; the natural process itself is not a detriment.

Page 26, #23: Please elaborate on the concept of “visual product quality.” This “visual” concept is something that developing countries oftentimes account for higher PHL and food waste due to higher expectations and regulations regarding appearance.

Pg 26: The section on waste management could benefit from a more complete discussion of the environmental impacts associated with food waste management.

Page 28, #12-20: Although Pre-harvest loss is obviously important and connected to PHL/FLW, how should the agronomic developmental principles of crop production be tied into food loss and waste? Should such agronomic/environmental issues be considered in this context of food loss and waste? Pre-harvest loss is a plant/animal production question and is not always researched in this context, and the Draft Vo should mention this in some detail.
Page 29, #16: Please clarify that this section, regarding fruit and time of harvest, is based strictly on crop and geographical location.

Page 29, #31: Please make an additional comment that: *integrated systems that can take advantage of "potential" post harvest loss can reduce carbon footprint and reduce total caloric waste where it can be converted into livestock/protein sources.* We strongly recommend that HLPE note that one of the primary goals is to salvage and maintain food as feed for animals, when the product can no longer be utilized (especially in the context of improving food security), and where integrated systems can reduce losses during harvest, by cleaning up “spillage,” as well as providing fertilizer options.

Page 30, 41: Please do not discount archaic and traditional methods of storage and preservation. There are still some benefits to these, depending on region.

Page 30, #45: Please note the number >13% is subjective. Not all grains have to be dried below 13% for storage or sale, as it depends on the context, usage of product, duration of storage, and methods used.

Page 30, #48: Regarding the 30% statement, is this figure attributable only in grain that was dried improperly? These are usually exclusive (improperly dried grain and grain storage pests), and one does not always cause the other.

Page 30, #54: This sentence is debatable and should be considered for removal. How are farmers encouraged to produce more in this context? Additionally, it doesn't always stem from the fact that they had to sell when prices were low or that they had to get it out of the field immediately.

Page 30, #57: Please clarify that actellic super is an insecticide; not many would be familiar with this product.

Page 31, #13: Please give specific examples as to what crops can be trimmed and utilized.

Page 32, #16: These examples, while important, do not reflect the overall ideal methods of distribution, and are too specific and are based on regional FLW interventions. Language in this section should be more broadly stated in this case.

Page 32, #31-33: The HLPE should clarify on what is considered avoidable and unavoidable loss. Among these examples, which can be fixed? Are the numbers of pigs that die during transport high? There are too many factors that take place that make this number.
Page 32, #44: Please consider eliminating the phrase: “truckload of beets.”

Pg 33, paragraph beginning on line 14: Not all processed foods are of lower nutritional quality. In fact, in some cases, canning or freezing could increase nutritional content of produce, particularly in comparison to fresh products that are past their prime. The discussion should be edited so as not to suggest that FLW reduction through food processing will necessarily lower dietary quality.

Pg 35, #46: Is the problem the distance or the lack of a well-functioning supply chain?

Pg 35, section 2.3.5: Though the contractual practices in low-income countries may be similar to those in developed countries, it is unclear how “payment terms discouraging small growers” or “standards deterring small holders” impact FLW. Section could be cut.

Pg 35, #39: What is the source of these large welfare losses after the HACCP reg? What proportion, if any, is due to increases in food waste?

Page 35, #43: Does this mean that there are too tight of regulations for countries such as the U.S., or that the standards inadequate in countries with poor food safety infrastructure systems and need to tighten their food chain and safety programs?

Page 36, chapter 2.3.8: The chapter heading is unclear – is this in reference to causes for food loss or food waste? It would be helpful to clearly delineate causes for food loss versus food waste.

Page 36, chapter 2.4.1: It would be helpful to clearly define what is meant by “food waste” in the Institution of Mechanical Engineers report – is it the same term as defined in the zero draft?

Pg 36, #6: Please note this sentence is unclear and requires evidence.

Pg 36, #29: In many areas of the document the language seems rather biased against the food industry. The use of the word “dictatorship” in this line is a standout.

Pg 36, #48: Though the first line in this paragraph points to consumers as “kings” in driving supply decisions, the primary role of consumers is dismissed in the following discussion, which again describes retailers as dictators.
Pg 37, #8: Please provide references for the statistic that in the U.S., in-store food losses are 10% of the total food supply.

Pg 38, #22: Please delete this paragraph. A number of factors determine whether food waste or packaging have larger environmental footprints. Some additional packaging may provide larger net environmental benefits. The assumption that extra radius is negative is unfounded and contradicts the discussion on the top of page 14.

Pg 38, section 2.4.2: The discussion of food waste does not consider an important driver of food waste, namely: time costs. It may be perfectly efficient and logical for a low-income, single mother with high demands on her time (including for child care, work outside the home, housework, and grocery shopping) to buy an extra bag of carrots just in case she needs it during the week. This expenditure is welfare-maximizing if she values the time it saves her (by avoiding an extra trip to the grocery store) more highly than the cost of the bag of carrots, or the proportion of the bag that may be wasted. The assumptions about efficiency and waste underlying the discussion in this section should be reexamined.

Pg 40, #21: U.S. Federal Law does not require manufacturers to use 3 different date labels! This should be rewritten to: “In the United States, Congress has never mandated a national date labeling regime and the only product for which a date label is federally regulated is infant formula. Manufacturers in the United States have developed a number of date labels, including “sell-by,” which indicates the manufacturer’s suggestion for when the grocery store should no longer sell the product; “best-by,” which is the manufacturer’s best estimate of a date after which the food will no longer be at its best; and “used-by,” which is also typically the manufacturer’s estimate of the last date to use the product while at peak quality.” (The report issued by NRDC and Harvard should be the source.)

Page 42, #27: The recommendations for developing and developed nations should be given in general terms, especially since food waste at the consumer level is determined by personal income in most cases, not the economic status of the entire country.

Page 42, #32: The Technical Solutions Recommendations paragraph is just a short list of examples that have occurred around the supply chain, specific to certain areas. What is needed in this section is a clearer policy recommendation for technical solutions, something accomplished by civil societies, governments, the companies/corporations themselves. What is the role of private-public partnerships, and have there been successful FLW interventions? What is being done in the context of changing the mentality and behavioral components of the region or consumer base?
Page 44, #16: Is this a recommendation for stronger regulation and control measures by governments? If so, it should be clarified as such.

Page 45, #39-40: Please avoid the promotion one particular technology over another.

Page 47, #1: This section could be given greater weight, given its importance for FLW reduction. Education at all levels, for consumers, producers, and those working along the supply chain, offer some of the best technology transfer mechanism for inducing positive change.

Page 49, #45: Please avoid any language or tone that may be interpreted as condescending. The goal should not be to change entirely how certain societies eat and what products they consume, but rather support creating infrastructure that allows for certain foods or byproducts to be used in some other fashion or capacity.

Pg 50, Box 7: The “USA” did not carry out this work. The opening sentence should be changed to “A university study in the United States, examined the impact on plate waste of switching from a tray to a tray-less delivery system in a university dining hall.”

Pg 53: The discussion in 3.7.1 on economic aspects is well-rounded.

Pg 55: Food banks are not the only organizations recovering surplus food. In the United States, a growing number of organizations--both charitable and for profit--are working to recover wholesome excess food to provide low or no-cost meals to families in need. These range from student groups that work to transform unused food from dining halls, grocery stores, restaurants, and farmers’ markets into meals for those in need – to organizations that link food service operators that have surplus food to local hunger relief agencies. For example, one of these groups, called Rock and Wrap, provides 100,000 meals every week from the leftovers from schools, hotels, sporting events, rock concerts, political gatherings, film shoot sand television tapings.

Page 55, #4: The idea that more affluent producers can alter global market prices by improving their PHL is questionable, at best; this concept may undermine strategies to work with both smallholder and large-scale producers. There will always be FLW. Improved infrastructure probably opens the demand for more commodities and products, if it is being sold or disposed properly and not wasted.
Page 55, #24: Please address the role of integrated horizontal agriculture systems, which can reduce FLW and PHL more readily and improve food security.

Pg 57, #7: The sentence describing the Good Samaritan Act is incorrect. It should be changed to: “In the United States, the Bill Emerson Good Samaritan Food Donation Act provides liability protection to food donors. Its objective is to encourage the donation of food and grocery products to qualified nonprofit organizations. Under this Act, as long as the donor has not acted with negligence or intentional misconduct, the company is not liable for damage incurred as the result of illness.”

Pg 57, #21: The description of tax incentive in the US is incorrect. The sentence, “In the US, food donation is eligible for an enhanced tax deduction and the money donated can be...” should be replaced with: “The U.S. federal government provides enhanced tax deductions to businesses to encourage donations of fit and wholesome food to qualified nonprofit organizations serving the poor and needy. Qualified business taxpayers can deduct the cost to produce the food and half the difference between the cost and full fair market value of the donated food. In addition, the U.S. Federal Food Donation Act of 2008 specifies procurement contract language encouraging Federal agencies and contractors of Federal agencies to donate excess wholesome food to eligible nonprofit organizations to feed food-insecure people in the United States.”

Pg 59: As mentioned in the introductory comments, the following four U. S. policies/programs should be added to the section on public policies for reducing food loss and waste:

- The U.S. Food Waste Challenge, which was launched by the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) in June 2013, calls on entities across the food chain to reduce food loss and waste in the United States; recover wholesome food for human consumption; and recycle discards to other uses including animal feed, composting, and energy generation. The goal of the U.S. Food Waste Challenge is to lead a fundamental shift in how food and food waste is managed in the United States. To join the Challenge, participants list the activities they will undertake to help reduce, recover, or recycle food waste in their operations in the United States. The Challenge includes a goal of 400 partners by 2015 and 1,000 by 2020. The U.S. Food Waste Challenge is bolstered by the EPA’s Food Recovery Challenge, which offers participants access to data management software and technical assistance to help them quantify and improve their sustainable food management practices.
• The Bill Emerson Good Samaritan Food Donation Act provides liability protection to food donors. Its objective is to encourage the donation of food and grocery products to qualified nonprofit organizations. Under this Act, as long as the donor has not acted with negligence or intentional misconduct, the company is not liable for damage incurred as the result of illness.

• Internal Revenue Code 170(e)(3) provides enhanced tax deductions to businesses to encourage donations of fit and wholesome food to qualified nonprofit organizations serving the poor and needy. Qualified business taxpayers can deduct the cost to produce the food and half the difference between the cost and full fair market value of the donated food.

(7) The U.S. Federal Food Donation Act of 2008 specifies procurement contract language encouraging Federal agencies and contractors of Federal agencies to donate excess wholesome food to eligible nonprofit organizations to feed food-insecure people in the United States.

Pg 63: The U.S. Department of Agriculture funds research into waste reduction technologies and the valorization of the waste stream. Currently, a number of projects are underway to develop new technologies for reducing spoilage of fresh foods and develop new products from waste materials at food processing facilities:

• In collaboration with an industry partner, develop fruit- and vegetable-based powder coatings to inhibit spoilage of fresh-cut produce.

• Develop in-package plasma sterilization system to lengthen shelf life of fresh poultry meat.

• Develop new design and operational procedures for retail display cases so as to maximize shelf life of displayed fresh and fresh-cut produce.

• Investigate genetic/breeding options for inhibiting sprouting of potatoes during storage.

• Investigate use of 1-methylcyclopropene (1-MCP), refrigeration, and alternative packaging to delay ripening of strawberries, blueberries and tomatoes during shipping and storage.

• Develop, in collaboration with industry partner, active packaging to extend fruit and fresh-cut produce shelf life.
• Develop, in collaboration with industry partner, technology to utilize olive-mill waste-water in body-care or beverage products.

• Develop, in collaboration with the University of California-Davis, processes to produce new oils and dietary-fiber products from fruit and vegetable seed byproducts.

• Develop grape seed flour, a byproduct of wine making, as a healthy food ingredient that helps to lower the risks of heart disease and obesity.

• Develop 2-stage anaerobic digestion of potato-processing waste (mostly peels) to produce a substitute for peat moss, an imported non-renewable matrix for potting and garden soils.

• Develop biodegradable biopolymers from polylactic acid and sugar beet pulp, a waste product from sugar beet processing.

Again, the U.S. government welcomes the Report on Food Losses and Waste in the Context of Sustainable Food Systems and thanks the HLPE for organizing the consultation process.