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Food Wastage – Social, Environmental and Economic Implications

Summary

General background

In a world of continuous resource decline and population growth, supplying food to the world's population has become one of humanity's main challenges. According to various estimations, 30-50% of global food production is lost or wasted, for different reasons, along the food supply chain—from farm to fork.

Food wastage carries significant social, environmental and economic implications. From a socio-economic point of view, poor people who cannot afford to pay for it are not using food that they need, while wasted cultivation and production costs lead to price increases and a subsequent widening of social gaps. From an environmental-economic point of view, food wastage means squandering food-production natural resources and inputs, e.g., land, water, human resources, fertilizers and fuel. It also causes unnecessary environmental damage due to carbon dioxide emissions, water contamination by fertilizers, soil quality deterioration and biological diversity damage, and finally, food waste increases the amount of buried waste—leading to an increase in methane gas released into the atmosphere—and incurs transportation and burial costs.

'Food recovery' is a winning solution for society, for the environment and for the economy. Recovered food can go to feed those who need it, while reducing the quantity of environmentally harmful buried waste. It may also reduce farmers' harvesting costs as well as disposal and burial costs for food manufacturers and vendors, i.e., farmers, food factories, marketing chains, hotels, catering companies, restaurants, etc.

Today, food surpluses are a resource not being fully utilized. For as long as they are fit for human consumption, these should be used to nourish people either through industrial food production, or by direct transfer to those in need. Once they become unfit for human consumption, they should be used for feeding animals, producing energy and creating

composted¹ fertilizers. All these uses are economically and socially positive, as opposed to food surplus disposal and burial, which cause considerable economic and environmental damage.

The purpose of this report is to highlight the food wastage phenomenon and its negative impact; to inspect the way government ministries and public bodies handle wasted food; to identify the main areas of food loss and food wastage as well as barriers to loss/waste reduction; to present loss-reduction measures already adopted by other countries; and to recommend efficient and economic modes of action that are beneficial for both the public and the environment.

Audit work

Between March and October 2014, the State Comptroller Office examined different aspects of how the Israeli government handles food wastage. Supplemental inspections continued until January 2015. The audit reviewed—among other things—global and local food waste data and the handling of agricultural product waste; public education for food waste prevention; determination of food expiry dates and storage guidance; food recovery for those in need; and priority-based usage of food surpluses. The audit covered the Ministry of Agriculture and Rural Development (the “Ministry of Agriculture”), the Plants Board, the Ministry of Environmental Protection, the Ministry of Health, the Israel Defense Forces (IDF), the Israel Police (the “Police”), the Israel Prison Service (the “IPS”), state hospitals, the Ministry of Religious Services and the Chief Rabbinate of Israel. The supplemental inspections were performed in the Ministry of Education, the Ministry of Finance, the Ministry of Economy, the Ministry of Social Affairs and Social Services (the “Ministry of Social Affairs”), the Standards Institution of Israel and the Israel Consumer Council.

Main deficiencies

Lack of food wastage data

Various countries, including the Netherlands and the UK, have created governmental food waste reduction programs, in which they measured or estimated lost food quantities and determined reduction goals.

1 ‘Composting’ is a natural bio-aerobic (air requiring) degradation process of organic matters (plant remains and organic waste), performed under controlled ventilation, heat and humidity settings. The process produces ‘compost’, an organic soil additive.

In Israel, no measurement of food loss quantities in the producer-to-customer food supply chain has ever been made, and generally, the area has not received any significant attention from the government.

Agricultural product wastage

1. **Surplus reduction:** The Ministry of Agriculture has not established any crop surplus and product wastage reduction program, including optimal surplus usage. No Ministry department is responsible for the routine handling of agricultural product surpluses.
2. **Illegal surplus destruction:** According to Section 60 of the Plants Board Law (Production and Marketing), 5733-1973, “Any destruction of plant surpluses requires the permission of the Minister or the Director-General of the Ministry of Agriculture, and such permission will not be granted unless the Minister / Director-General is convinced that there is no beneficial use for the aforesaid surpluses, including charity”. However, the Plants Board and the Ministry of Agriculture have been disregarding this directive for years. The Plants Board does not apply to the Minister or to the Director-General of the Ministry of Agriculture for permission to destroy surpluses, and it also does not explore all options for beneficial use of surpluses, including transfer to those in need.

Currently, there is no clear regulation for the destruction of agricultural products in Israel, and many questions remain unanswered. Issues such as, who is in charge of crop destruction, which cases justify this measure, should farmers be required to notify authorities about surpluses that are slated for destruction, what are the priorities in the handling of surpluses that are scheduled for destruction, etc., remain unresolved.

3. **Product wastage due to quality and safety reasons:** Some agricultural products are destroyed due to poor quality or health hazards (e.g., pesticide leftovers that exceed the permitted level or the detection of a microbiological contaminator). The Law for Inspection of Plant Production and Marketing, 5771-2011 (the “Standards Law”) took effect in August 2012. The law regulates the cultivation and marketing of agricultural products, in accordance with quality and safety standards, and it empowered the Minister of Agriculture to make law-pursuant regulations. A draft was prepared but, in effect, as of December 2014, such regulations were never finalized and as a result, the law was not implemented.

A phenomenon that reoccurs, season after season, is the harvesting and sale of unripe fruit (fruit that has yet to achieve minimum ripeness). This phenomenon harms farmers and consumers and causes product wastage; however, the Ministry of Agriculture and the Plants Board have not done enough to root out this phenomenon. An attempt was made to take care of it within the Standards Law and the regulation draft, but this attempt is only partial and, as previously mentioned, has yet to be implemented.

4. **Agricultural product destruction due to religious ('Kashrut') reasons:** The amount of fruits and vegetables that are fit for human consumption (and even of high quality), and yet are destroyed for 'Kashrut' reasons (donations and tithes, 'Orlah' prohibition, fallow year) is estimated at tens of thousands tons per year. The Ministry of Agriculture, the Plants Board, the Ministry of Religious Services and the Chief Rabbinate of Israel do not know the amount and quality of the destroyed vegetables/fruits. These bodies have never examined the possibility of using these products to feed those in need (Jewish or non-Jewish), in accordance with religious law requirements. In effect, these products are almost entirely sent for burial in dumping grounds, with all the consequential social, economic and environmental implications.

Lack of an overall public education program for food wastagee reduction

The key to significantly reducing food loss and food waste lies in the hands of the general population. The amounts of discarded food could be reduced by a double-digit percentage if public awareness of food value and food wastage implications were increased.

Governments of some developed countries have initiated food waste reduction programs and campaigns. The Israeli government may use them as a model for action, learning and policy-making.

The state-of-affairs at present:

1. As part of a broader education for sustainability and—specifically—wastage reduction, the Ministries of Environmental Protection and Agriculture are working to educate kindergarten and primary school children about reducing consumption and adopting informed consumer principles. However, this program includes only a limited reference to food waste and it is not part of the Ministry of Education's official curriculum. Each educational institution is free to decide whether to adopt the program or not, and as a result, the majority of Israel's children do not learn what this program has to teach.
2. The Ministry of Economy, which is also in charge of consumer and trade related issues (among others, through the Consumer Protection and Fair Trade Authority²), and the Israel Consumer Council³ have not formulated any public education program for the reduction of food consumption and prevention of food wastage.

2 An independent intra-governmental authority, established under the Consumer Protection Law, 5741-1981.

3 The representative consumer organization, operating under the Israel Consumer Council Law, 5768-2008. The objectives of the Israel Consumer Council are to protect consumers and safeguard their rights, and to promote informed consumer education.

3. **Expiry dates:** The expiry dates of many products that are sold in marketing chains are not labeled in accordance with the obligatory Israeli standard, and the significance of expiry dates is not always correctly perceived by consumers.

Often, labeling is non-uniform and unclear, and there is general ambiguity about the meaning of the terms “Use by”, “Best before” and “Sell by”. As a result, consumers misunderstand the meaning of the date that is marked on the packaging and regard it as the last date for use. However, the label “Best before” signifies the date until which the product is expected to preserve all its qualities, while consumption beyond that date is still permitted and has no negative health implications. As a result of this confusion, people throw away large quantities of edible food. We could not find any explanation of these terms available to consumers looking for such clarifications, not on food packaging, in food shops or in publications of the Ministry of Health, except for a short explanation buried on the Ministry of Health’s website.

4. **Storage guidance:** Many products are not sensitive to spoilage as long as they remain unopened, while they might spoil quickly after opening if kept in unsuitable storage conditions. The packaging of many of these products does not provide guidelines for proper storage after opening.

The Agricultural Research Administration of the Ministry of Agriculture has practical information regarding fruit and vegetable storage at home. However, the Ministry of Agriculture does not make this information public—not on its website or on the website of the Agricultural Research Administration. Except for sporadic press articles, this essential information has not been publicized.

Inadequacies in food recovery for those in need

1. In January 2014, the National Nutritional Security Council (the “Nutritional Security Council”) published a “national program to ensure food security for households in Israel—principles, criteria and modes of action”. The program also included food recovery recommendations. Up to December 2014, the operating budget of the Council had yet to be approved by the Minister of Social Affairs, despite the specific comment of the State Comptroller in the Nutritional Security Report that was released in April 2014⁴.
2. According to estimations, current food recovery rates⁵ can be increased 10-fold, at least. In August 2014, government support for food recovery activities was approved, as part of a 30 million NIS allocation to the Ministry of Welfare’s 2014 budget in

4 State Comptroller, special report, ‘**Government Actions to Promote Nutritional Security**’, 2014 (the “State Comptroller’s Nutritional Security Report”), p. 19.

5 According to food recovery organizations.

order to improve nutritional security. However, most of this support was transferred to the 2015 budget.

3. Today, the Nutritional Security Council has no information about agricultural product surpluses, and there is no mechanism to receive such information and promote the establishment of a food recovery system.
4. **Transfer of food surpluses from the IDF to those in need:** Although IDF guidelines prohibit—as much as possible—food waste, there are considerable food surpluses in the military system. The IDF lacks any official data of surplus amounts. In April 2014, the IDF, together with the ‘Leket Israel’ charity association⁶, initiated an experimental food surplus donation program. In May-August 2014, the army transferred 45,000 meals to people in need. Since then, the army has worked to expand its cooperation with charity food associations and increased the amount of food that is transferred to those in need.
5. Other big organizations that operate independent or outsourced large-scale catering services, such as the IPS, the Police and State Hospitals, do not measure food surpluses or implement control. Surpluses are mostly destroyed, without any recovery measures taken so that those in need can receive the surpluses.
6. **Food donation barriers and incentives:** Many private bodies, including hotels, catering companies and restaurants choose to avoid or restrict food surplus donations for a variety of reasons: legal, economic and others. The amount of recovered food to be donated to those in need can be significantly increased if food donation barriers are removed and economic—and other—incentives are put in place. Several countries adopted legislation that releases food donors from criminal and civil liability in the event of food-related damages, provided that the food donation was performed in good faith.

Absence of food surplus handling priorities

The U.S. Ministry of Environmental Protection compiled a food waste reduction priority list that includes the following stages: (a) Reducing the formation of food surpluses from the outset; (b) Feeding those in need; (c) Feeding animals; (d) Utilizing surpluses for industrial use; (e) Composting; (f) Burning or burial.

In Israel, to date, neither the Ministry of Environmental Protection nor any other State body provided public or private food-surplus-producing bodies with any explicit instructions regarding the handling of surpluses in accordance with a list of priorities that

6 The association is not an ‘audited body’ under the State Comptroller Law, 5718-1958 [Integrated Version] (the “State Comptroller Law”).

integrates efficiency and saving with sustainability, embodying social, environmental and economic responsibility.

Our main recommendations

The Ministry of Agriculture and the Plants Board should carefully follow the statutory mechanism for collective destruction and disposal of fruits and vegetables. The Ministry of Agriculture should also regulate independent destructions by farmers, to prevent unnecessary waste of resources.

The Ministry of Agriculture should complete, as soon as possible, the regulation process of the Standards Law, to achieve the Law's objective. As regards unripe fruit marketing, the Ministry of Agriculture and the Plants Board should re-examine the way they are dealing with this phenomenon, and they should provide an appropriate and prompt response to it, either through the Standards Law regulation or by a different measure.

As regards the 'Kashrut' of agricultural products, the Ministry of Religious Services and the Chief Rabbinate of Israel, together with the Ministry of Agriculture and the Plants Board, should quantify or estimate the amount of agricultural products that are destroyed for 'Kashrut' reasons, and review religiously viable options for agricultural product transfer to those in need, either Jewish or non-Jewish. We suggest this review be done together with the Nutritional Security Council and with food recovery associations. As regards edible agricultural products, the Chief Rabbinate of Israel should work with the Ministry of Agriculture and with the Ministry of Environmental Protection to find beneficial uses for these products.

The Ministries of Education and Environmental Protection should consider creating a food waste educational program for children and youth. The Ministry of Economy, the Consumer Protection Authority and the Israel Consumer Council should also consider taking public education and information measures for food waste reduction.

The Ministry of Health and the Israel Consumer Council should establish a consumer information program that will clarify the meaning of the dates stamped on food products next to the terms "Use by" and "Best before".

The Ministry of Health should supervise the inclusion of optimal storage guidelines on food product labeling. The Standards Institution of Israel should consider expanding storage guidelines for consumers and applying Israeli Standard no. 1145 to pre-packed fruit and vegetables as well. The Ministry of Agriculture should inform the public about efficient methods to extend fruit and vegetable shelf life. It should consider including storage guidelines within the labeling requirements of plant product packaging under the regulations of the Standards Law. The Ministry of Agriculture should also consider

supporting research and creating research collaborations in the area of domestic and commercial storage of agricultural products.

Large public bodies that provide large-scale catering services—e.g., the IDF, the IPS, the Police and State hospitals—should routinely monitor their food surpluses, in order to reduce them as much as possible. The remaining edible food surpluses should be transferred to those in need under a dedicated procedure that ensures the reliability of the receiving body and food security, similarly to the way the IDF handles it.

In order to encourage food donation, the Ministry of Social Affairs, the Nutritional Security Council, the Ministry of Environmental Protection, the Ministry of Agriculture and the Ministry of Finance should consider removing food donation barriers and setting different food donation incentives, e.g., publishing food donation guidelines that specify the legal protections offered to those who donate food in good faith. They should weigh increasing the tax allowance for food donors and burial surcharges. They should consider awarding a “Green Label” for those who fulfill the requirements and creating an online food surplus board.

As done by the U.S. Ministry of Environmental Protection, the Israeli Ministry of Environmental Protection is advised to adopt a list of priorities for food surplus reduction and optimal use, and to promote its implementation together with Israel’s food manufacturers, vendors and consumers.

Conclusion

Food wastage is a global problem with far reaching social, environmental and economic implications. Given Israel’s constant resource shortage, high poverty, nutritional insecurity rates, and extremely high waste burial rates (among the highest of all developed countries), the correct handling of the food wastage problem may bring about a significant change in many important aspects.

The findings of this report underscore sharply that food wastage in Israel has yet to receive any comprehensive governmental attention, and no systematic program is in place to tackle this phenomenon.

The audit revealed government inadequacies concerning food wastage and food waste, as well as insufficient activity, particularly in the following areas: Data collection of food wastage in the food supply chain from farm to fork; public education and information regarding food wastage prevention; agricultural product waste; food expiry terminology; expiry dates and storage guidance; food recovery for people in need; and setting a priority list for the handling of food surpluses. Each

government agency should act within its jurisdiction to repair the inadequacies delineated in this report.

The State Comptroller's Office believes that the most appropriate and effective way to confront food wastage is through comprehensive and coordinated government treatment. Without belittling the commitment of each governmental element, the State Comptroller's Office recommends to the government that it will give one ministry or one administrative body overall responsibility for the area and adequately finance this ministry or administrative body. The body assigned to coordinate the treatment of this area will establish and lead a national food wastage reduction program. The program will be prepared and implemented together with the Ministries of Social Affairs, Agriculture, Environmental Protection, Economy, Health and Education, through an inter-ministerial team assisted by and cooperating with the National Nutritional Security Council. The same body should initiate a government decision to promote the area.

Given that there are many governmental bodies connected to the area of food recovery, and given the lack of experience in any integrated governmental effort in this area, we also suggest that the Coordination, Planning and Organization Department of the Prime Minister's Office, coordinate the promotion of an overall program. This department is in charge of the management and coordination of cost-efficiency lateral projects. This effort should include coordination with relevant ministries, so that this issue is placed on the government's agenda as soon as possible.

Based on worldwide experience, this type of program should include the following milestones: (a) Measurement and goal setting – Identifying the main areas of food loss and food wastage, quantifying surpluses and setting food waste reduction goals, while encouraging relevant research; (b) Public information dissemination – Creating a shift in awareness regarding food value and wastage prevention; (c) Removing barriers and setting food donation incentives – Applying regulatory tools for optimal food surplus usage.

The elimination of these inadequacies and the implementation of the report's recommendations will be a significant step toward the reduction of food wastage, nutritional insecurity rates, and environmental damage in Israel. The State Comptroller's Office believes that the Israeli Government should, as soon as possible, conduct a thorough discussion and formulate its policy on this very important issue, ethically, socially, economically and environmentally.