**Chapter 11**

**Rescuing Food: Economic, Social, Health, and Environmental Benefits**

**1.1 million tons of food could have been rescued in Israel in 2022**

The combination of increased food waste, the climate crisis, the high proportion of Israeli households living with food insecurity, and the resultant health and economic costs, all indicate the need to make food rescue a key national policy tool.

The phenomenon of food waste is not unique to Israel. This problem exists worldwide, and to a similar extent, in all Western economies. According to UN estimates, over a third of all the food produced in the world is wasted, in terms of quantity, or about a quarter of it, in terms of caloric value.

The European Union’s Waste Framework Directive established a hierarchy of priorities for handling unconsumed food. Each level in the hierarchy highlights a different management strategy for reducing food waste. The clear priority is on preventing food waste, and using rescued food to feed disadvantaged populations. These strategies have the greatest environmental, economic, and social benefits, and are therefore are the most effective ways to address the problem.

Figure: Economic-Environmental Hierarchy for Addressing Food Waste

Source: Environmental Protection Agency

There are many policy tools to help disadvantaged populations and address the problem of food insecurity. In Israel, the most common policy measures are donations, subsidies, stipends, and relief assistance. Food rescue is unique in that it provides assistance to people in need at a low cost, as it is only necessary to finance the cost of rescuing the food, rather than the full cost of purchasing the food.

There is a socio-economic debate, in Israel and around the world, between an approach whose central goal is encouraging growth (“growing the pie”) and an approach whose central goal is reducing inequality. Rescuing food intrinsically combines these approaches. **Distributing rescued food to disadvantaged populations increases economic output while decreasing inequality**.

Additionally, food rescue policies can increase food reserves and promote food security in times of crisis and emergencies that disrupt local and global food supplies, such as the Covid-19 pandemic and climate change.

There are four main benefits of preventing food waste and rescuing food:

1. **Economic**: Food waste decreases economic productivity, since investments and labor inputs are lost. Wasted food with no value or a negative value is given positive economic value when rescued food, with full nutritional value, is distributed for consumption by disadvantaged populations. Food rescue increases economic output and productivity, since its cost is lower than the cost of investing producing and transporting additional food products.
2. **Social**: The costs of food waste along the entire value chain, from growing and producing food, through marketing, distribution, and consumption, are ultimately paid by consumers. This affects the cost of living in Israel. Food rescue can reduce social disparities, lower the cost of living, and lessen food insecurity among disadvantaged sectors of the population.
3. **Health**: Food security is not measured only in caloric terms, but also relates to the nutritional value and quality of the food. Being able to afford healthy food that provides adequate and essential nutrition for physical, emotional, and cognitive functioning is a necessary aspect of realizing food security. On a personal level, food insecurity is a risk factor for chronic physical and mental illness, lower academic achievements, and diminished earning capacity. On a national level, it leads to economic distress, increased healthcare expenses, and lower productivity. Rescuing healthy food, particularly fruits and vegetables, and distributing it to needy people may lower the proportion of the population that lives with food insecurity and thus improve their health. This can reduce unnecessary healthcare costs borne by the Israeli economy.
4. **Environmental**: About 37% of Israel’s local agricultural products become waste or surplus. All the resources used during the processes of growing, producing, distribution, and marketing – land, water, fertilizers, chemicals, and fuel – also go down the drain. Agriculture and industries that produce food for human and animal consumption utilize many non-renewable resources, which cause pollution and negatively impact the quality of water, soil, air and biodiversity around the world. In addition to the environmental impacts of producing unconsumed food, the wasted food must be disposed of. In Israel, the majority of waste is buried in landfills. Decomposing organic wastes in landfills emit methane, a greenhouse gas linked to climate change, and cause soil pollution. About a third of household waste is organic food waste. Rescuing food maximizes utilization of the resources already invested in producing it, and reduces the need to use additional natural resources and other inputs.

The combination of these four benefits is distinctive to food rescue activities. There is a need to formulate appropriate policy tools to advance them in the field.

**Comparing Food Production and Food Rescue**

|  |  |  |
| --- | --- | --- |
|  | Food Production | Food Rescue |
|  | Food with full nutritional value | Food with full nutritional value but possible aesthetic defects |
| Nutritional value | 100% | 100% |
| Use of land | yes | Minimal\* |
| Use of water | yes | Minimal\* |
| Greenhouse gas emissions while raising crops | yes | no |
| Use of fertilizers and pesticides | yes | no |
| Cost of logistics, distribution and transportation | yes | yes |

\* Most of the resources are invested while growing and producing the food, and only minimal additional resources are needed in the process of rescuing it.

About half of the total wasted food is rescuable, representing more than 1.1 million tons. Rescuing it could prevent about 3% of the greenhouse gas emissions in Israel, and reduce healthcare costs to the Israeli economy by 5.2 billion NIS. Most food rescue activities, in Israel and around the world, are carried out by nonprofit social organizations supported by donations. Nevertheless, the main basis for the food rescue activity is not to give charity, but to offer an alternative to producing food, which has direct economic benefits and reduces economic inequalities.

The direct cost of rescuing food is, on average, about 1.6 NIS per kg. The direct value of the saved food is about 5.7 NIS per kg, representing a value multiplier of 3.6. That is, every shekel invested by the food rescue organizations generates 3.6 NIS worth of food products for the populations receiving the donations. The field of food rescue in Israel is still in its infancy, and there is apparently great potential for increasing the scope of activity. Taking advantage of economies of scale could reduce the cost of food rescue operations and increase the value of the rescued produce. However, in an effort to be conservative, the estimates presented here are based on the current cost structure.

In terms of benefit to the national economy, the impacts on the environment and healthcare must also be considered. Every kilogram of rescued food is estimated to represent a reduction in greenhouse gas emissions, air pollution, and waste treatment valued at 1.1 NIS (see Chapter 10), such that every shekel invested in food rescue yields a value of 4.3 NIS to the national economy. Every kilogram of rescued food is estimated to reduce healthcare costs by about 12.5 NIS (see Chapter 8) such that every shekel invested in food rescue yields a value of 11.8 NIS.

**Estimating the Profitability of Rescuing Food: Cost / Benefit per kg of Food**

**(estimates provided by BDO)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Value of rescued food, per kg \*** | **Environ-mental benefit** | **Health benefit** | **Total value to the national economy** | **Cost of food rescue** | **Profit from food rescue** | **Value multiplier =**  **Value to the national economy/the cost of rescue** |
| Benefit to the national economy by reducing greenhouse gas emissions and air pollution | 5.7 NIS | Not applicable | Not applicable | 5.7 NIS | 1.6 NIS | 4.1 NIS | **3.6** |
| Benefit to the national economy by reducing greenhouse gas emissions, air pollution, and waste treatment | 5.7 NIS | 1.1 NIS | Not applicable | 6.8 NIS | 1.6 NIS | 5.2 NIS | **4.3** |
| Benefit to the national economy by reducing greenhouse gas emissions, air pollution, waste treatment and healthcare costs | 5.7 NIS | 1.1 NIS | 12.2 NIS | 19.0 NIS | 1.6 NIS | 17.4 NIS | **11.8** |

\*Market value of an alternative product with the same nutritional value

The scope of food waste in Israel is similar to that of developed countries around the world. In recent years, the Israeli government has taken the first steps in promoting initiatives to reduce food waste (see Chapter 12). However, while many other countries have formulated legislation, national plans, and multi-year goals to encourage food rescue and reduce waste, Israel does not yet have a national policy on this issue.