

Practice to be assessed and included in the Guidelines

**Number/code:** OM/PR3

**Title:** COMPOSTABLE AND ECO-FRIENDLY TABLEWARE PURCHASING FOR PREVENTING UNSORTED WASTE

**Guidelines section:**

<input type="checkbox"/>	Governance	<input checked="" type="checkbox"/>	Operational management
		<input type="checkbox"/>	<i>Context of the event</i>
		<input type="checkbox"/>	<i>Event</i>
		<input type="checkbox"/>	<i>Stadium management</i>
		<input checked="" type="checkbox"/>	<i>Procurement</i>
		<input type="checkbox"/>	<i>Mobility and logistics</i>
		<input type="checkbox"/>	

**Description:**

Food packaging is another substantial source of waste during an event: it is difficult to use reusable cutlery and plates so disposable tableware is usually preferred. However, dirty plastic tableware has to be disposed of with unsorted waste whereas dirty paper tableware can go in the organic fraction (only for certain types of paper). In order to prevent high production of unsorted waste during events, some criteria on the usable tableware can be inserted in the tenders and contracts prepared with the catering service providers.

In particular, taking also into consideration the local segregate waste collection rules, the usage of biodegradable and compostable tableware could be imposed, or a more general ban on the usage of plastic tableware and packaging can be applied.

The usage of compostable tableware presents the advantage of making all the used tableware disposable in the organic fraction all together with food waste. This also makes the separation operations easier and faster even for caterers.

Examples:

- 1) Women Football World Cup Germany 2011: Catering companies were required to use as little packaging as possible at the World Cup and no plastic materials were allowed. In cases of doubt, paper boxes provided an environmentally friendly and cheaper alternative to plastic plates. With the exception of chip forks, almost no non-disposable plastic packaging was used. In the VIP areas, non-disposable packaging was almost completely absent.
- 2) EXPO Milano 2015: In order to prevent waste production from catering services, suggestions were put forward to use plates, cups, cutlery etc. made of such materials as to be washable on site and reusable, as well as to provide water and beverages on tap. A fundamental criterion adopted to maximise recovery, instead, consisted in the request, whenever washable and reusable

tableware had not been provided for, to employ compostable and biodegradable (EN 13432 certified) disposable items, thereby simplifying the set of recommendations for visitors/clients regarding the correct sorting of waste produced by consumption activities within catering areas. At the end of July 2015 a thorough verification was carried out at all 168 food outlets on the Site in order to check the actual compliance with the provision and identify corrective actions whenever necessary. It turned out that only 57% of the used tableware was compostable, 4% was reusable and 37% was mixed. Therefore, even though the prevalent use of compostable disposable items was certainly a positive achievement, which definitely supported the effectiveness of actions carried out, the share of non-compostable disposable items was still relevant, especially in specific cases such as cutlery and ice-cream cups.

All considered, there was a certain amount of confusion concerning compostable and non-compostable materials. Furthermore, both visitors and staff encountered several difficulties in visually making out the difference between compostable and non-compostable polymers. Such issues could be solved if, for example, there were a unique, international colour coding for the different types of packaging materials, and in particular to make a distinction between compostable and non-compostable ones: colours are more readily understandable than the various certifying labels.

- 3) The Portland Trail Blazers divert nearly 90% of their operations waste from landfill (about 1,000 tons annually) through initiatives such as extensive, well-marked recycling stations for visitors and a food waste composting program with vendors. According to the Blazers, 100% of food waste at the arena is collected for composting, and all food and beverage service ware is compostable.
- 4) The San Francisco Giants found that while compostable food containers worked for their system, compostable plastic cups were not the right solution for them. When the Giants offered compostable cups in their ballpark, fans were confused and did not consistently compost them, so the cups ended up contaminating the recycling stream. The Giants changed their service ware options so all of their drinkware was recyclable, while the food packaging remained compostable. This simplified procedures and messaging and helped the team to achieve a diversion rate of nearly 90 percent.
- 5) Philadelphia Eagles: After changing cutlery, plates, napkins, and cups to compostable products, the Philadelphia Eagles struggled to find a compostable wrapper for their hot sandwiches. In partnership with their concessionaire, ArAmArK, they continued to ask for the product they needed and at the end of 2011 were finally able to find a compostable sandwich wrapper that met their quality standards.
- 6) Folsom Stadium, Colorado: In 2008, the University of Colorado Boulder Athletics Department partnered with the school's Environmental Center and Facilities Management Department to implement a "zero waste" system at Folsom Stadium. Athletics branded the effort "Ralphie's Green Stampede" (named for the school's mascot, Ralphie the buffalo) to market the program to potential corporate sponsors, and it worked: White Wave foods, Boulder Toyota, Eco-Products Inc., and the stadium concessionaire, Centerplate, all signed on with sponsorships that helped fund the up-front infrastructure and outreach costs. Dave Newport, Director of the Environmental Center, noted that the "zero waste" program had relatively low implementation costs, and he hopes that ongoing costs will go down over time as the price of compostable service ware becomes

closer to that of traditional fossil fuel–derived plastic disposables. “The program is also saving money thanks to reduced trash disposal costs,” said Newport.

- 7) FIFA Men World Cup Germany 2006: Stadium kiosks served such items of food as sausages and schnitzels without additional packing. In addition, notice boards at stadium entrances and kiosks provided information on returnable beakers and separate collection of waste.
- 8) IOC replaces oil-based plastic material with plant-based plastic materials in catering and disposable tableware.
- 9) Resource Efficient Scotland: It suggests as best practices to use re-usable crockery, glassware, cutlery and tablecloths, but where disposable options are unavoidable use only compostable or recyclable alternatives like paper, wooden or biodegradable plastics (corn-starch). Ban non-recyclable packaging like polystyrene.

### **Environmental benefits:**

Reduction of unsorted waste production and supporters’ awareness raising towards environmental issues. Furthermore, if the venue is near a composting plant or a biogas plant all the organic waste can be turned in compost or biogas.

### **Economic benefits:**

Compostable tableware is actually more expensive than plastic and/or paper tableware.

### **Applicability and replicability potential**

The measure could be replicated in every stadium: the choice of the preferred material for tableware should be taken considering the local waste segregation rules and the waste facilities around the venue.

### **Sources**

[Women Football World Cup Germany 2011](#) (pp. 36-37)

[EXPO Milano 2015](#)

[Portland Trail Blazers, S.Francisco Giants, Colorado Boulders and Philadelphia Eagles](#) (pp. 9, 13-14, 21)

[France Guidelines for Sustainable Evets Communication](#) (p. 33)

[FIFA World Cup Germany 2006](#) (pp.12, 53)

[ICO](#) (p.47)

[Resource Efficient Scotland](#) (p.11)

## Case studies:

### **EXPO Milano 2015**

During our desk research, we did not find precise data on the environmental benefits and economic costs of this practice, but we analysed the case study of the EXPO Milano 2015, from which we can draw some considerations<sup>1</sup>.

In order to prevent waste production from catering services, the Milano Expo 2015 promoted the use of eco-friendly products for tableware (plates, cups, cutlery etc.) – i.e. washable on site and reusable – as well as to provide water and beverages on tap. Where washable and reusable tableware was not provided, compostable and biodegradable (EN 13432 certified) disposable tableware was used, offering recommendations to visitors/customers regarding the correct separate collection of waste produced by consumption activities within the catering areas.

At the end of July 2015 a thorough verification was carried out at all 168 food outlets on the site in order to check the actual compliance with the provision and identify corrective actions whenever necessary. It turned out that only 57% of the used tableware was compostable, 4% was reusable and 37% was mixed. Therefore, even though the prevalent use of compostable disposable items was certainly a positive achievement, which definitely supported the effectiveness of the actions carried out, the share of non-compostable disposable items was still high, especially in cases such as cutlery and ice-cream cups.

The catering operators summarised the most recurring situations that led to the lack of full compliance to the provision as follows:

- some precooked foods were distributed in the same packaging (made of plastic or composite materials) that was used for their conservation and transportation prior to the arrival at the venue;
- it was objectively hard to promptly find suitable materials for the specific product served and proceed to branding beforehand;
- some operators found it difficult to recognise certification marks or obtain the related guarantees from their suppliers;
- following the large visitor turnout in the final months, some participants turned to new types of disposables, due to the running out of previous stocks of compostable items;
- as the closing of the event approached, almost all washable items were withdrawn and replaced with compostable and non-compostable disposable ones due to logistics and dismantling reasons.
- In order to provide information to visitors and clients, Expo 2015 issued a notice, displayed in the most visible spots, to indicate at each food outlet which containers were made of compostable and biodegradable materials. Nevertheless, there was still a certain amount of confusion among visitors and staff concerning compostable and non-compostable materials. Both visitors and staff encountered several difficulties in visually making out the difference between compostable and non-compostable polymers. Such issues could be solved if, for example, there were a unique, international colour coding for the different types of packaging materials, and in particular to make a distinction between compostable and non-compostable ones: colours are more readily understandable than the various certifying labels.

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All of this hindered the positive environmental impacts of this practice derived from the reduction of unsorted waste production. Economic costs were higher since compostable tableware is actually more expensive than plastic and/or paper tableware.

### **The San Francisco Giants and the Municipality of San Francisco**

The San Francisco Giants declared to have achieved a waste diversion rate of nearly 90 percent (57 percent in 2009, 75 percent in 2010, 85.2 percent in 2011, 94.7 percent in 2012, 94.1 percent in 2013 and 95.7 percent in 2014, 94.8 percent in 2015), through the use of recyclable and compostable materials, including cans, bottles, plastic cups, cardboard, paper, wood pallets, electronic components, light bulbs, batteries, cooking grease, food waste and grass clippings. They are considered to be the single largest contributor to the San Francisco Compost Program<sup>2</sup>. However, a similar problem to that of EXPO Milano was highlighted: when they offered compostable cups in their ballpark, fans were confused and did not consistently compost them, so the cups ended up contaminating the recycling stream<sup>3</sup>.

An interesting article written by a US environmental attorney pointed out that compostable plastics is not a solution, for three main reasons<sup>4</sup>:

For years, San Francisco has used compostable plastic containers, cups and cutlery because it's supposed to be the better environmental choice. But in practice, the municipality isn't composting some or even most of it, so they are brought to the landfill. Again, the reason is that, with the exception of "biobags" and other clearly marked items, it's extremely hard for sorters to distinguish between traditional plastic and compostable plastic, not only at the consumer level, but also at the composting facility.

Another reason that hampers the environmental benefits of this practice and that should be taken into consideration relates to the fact that compostable plastic can take longer to decompose (industrial composting is necessary to heat the bioplastic to a high enough temperature that allows microbes to break it down). If they end up in marine environments, they'll function similarly to petroleum-based plastic, breaking down into micro-sized pieces, lasting for decades, and presenting a danger to marine life<sup>5</sup>.

In addition, it can expose compost to hazardous fluorinated substances, such as PFAS and PFOS. It can either be made by extracting sugar from plants like corn and sugarcane to convert into polylactic acids (PLAs), or it can be made from polyhydroxyalkanoates (PHAs) engineered from microorganisms. These chemicals keep grease and water from sticking to disposable foodware. Studies have linked them to numerous health impacts, including hormone disruption, immune system dysfunction and cancer. Portland, Oregon has even told residents to leave compostable containers out of their green bins.

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<sup>2</sup> <https://www.mlb.com/giants/ballpark/green-initiatives>

<sup>3</sup> <https://www.nrdc.org/sites/default/files/sports-venue-composting-guide.pdf> ; p. 13

<sup>4</sup> <https://www.sfexaminer.com/news-columnists/compostable-containers-dont-end-up-where-you-think-they-do/>

<sup>5</sup> <https://www.nationalgeographic.com/environment/article/are-bioplastics-made-from-plants-better-for-environment-ocean-plastic>

Therefore, the article shows the need for better labelling and performance standards from manufacturers, so compostable plastic can actually be composted.

Another article from the National Geographic adds two more reasons why bioplastics are not a good environmental solution, as the socio-environmental costs offset the benefits. For instance, according to a 2011 study from the University of Pittsburg, other environmental issues associated with growing plants for bioplastic are pollution from fertilizers and land diverted from food production<sup>6</sup>.

Overall, it is still unclear whether bio-based plastics are ultimately better for the environment than oil-derived ones, and so far, the best choice is to “strive toward a refillable and reusable future”.

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<sup>6</sup> <https://www.nationalgeographic.com/environment/article/are-bioplastics-made-from-plants-better-for-environment-ocean-plastic>