Table S1 Positive impacts per event according to their classification and type (events N=52)

Event	Improving transport infrastructure	Improving the livability of the city	Environmental education	Restorative initiatives: Tree planting	Reduction of air pollution	Clean-up of contaminated soil	Sustainable construction	Increasing the Ecological Civilisation Index	Green initiative on the event	Keeping events away from protected areas	Visitor perception: No increase in pollution	Visitor perception: No degradation of the environment	Total
Giga-events (n=19)	**3**	**1**	**1**	**1**	**6**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**15**
Summer Olympic games (n=19)	3	1	1	1	6	1	1	1	0	0	0	0	15
Barcelona 1992 (n=1)	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*
Athens 2004 (n=1)	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*2*
Beijing 2008 (n=6)	*0*	*1*	*0*	*0*	*3*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*5*
London 2012 (n=4)	*1*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*3*
Rio de Janeiro 2016 (n=6)	*1*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*3*
Multiple's editions (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Mega-events (n=15)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**1**	**0**	**0**	**5**
Football World Cup (n=9)	0	0	0	0	0	0	0	1	1	0	0	0	2
Germany 2006 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*1*
South Africa 2010 (n=4)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Brazil 2014 (n=2)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Russia 2018 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*1*
Qatar 2020 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Winter Olympic Games (n=3)	0	0	0	0	0	0	0	1	0	1	0	0	2
Torino 2010 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Sochi 2014 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*1*
Multiple's editions (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*1*
Games of the Commonwealth de 2010 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Eurocup 20122012 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Universiade Kazan 2014 (n=1)	0	0	0	0	0	0	0	1	0	0	0	0	1
Major-events (n=18)	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**
World Ski Championships in St. Moritz 2003 (n=2)	0	0	0	0	0	0	0	0	0	0	0	0	0
FA Cup Final 2003/2004 (n=2)	0	0	0	0	0	0	0	0	0	0	0	0	0
Rally World Championship 2004 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
AFCON 2013 (n=1)	0	0	0	0	0	0	0	0	0	0	1	1	2
Tour de France 2007 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
World games of the Kaohsiung 2009 (n=1)	0	1	0	0	0	0	0	0	0	0	0	0	1
Australia GP F1 2009 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Baseball major leagues 2010-2016 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
Rally international of Hail 2016 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0
no event assigned (n=7)	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**
TOTAL	**4**	**3**	**1**	**1**	**6**	**1**	**2**	**4**	**1**	**1**	**1**	**1**	**26**

Table S2 Negative impacts by event according to their classification and type (events N=52)

Event	Increased air pollution	Residents' perception: increase in pollution	Residents' perception: infrastructure and transport deficiencies	Residents' perception: adverse environmental effect	Residents' perception: high water consumption	Residents' perception: increased waste	Residents' perception: high energy consumption	Residents' perception: Destruction of nature and biodiversity	Lack of communication with residents	Poorly formulated sustainability programme	Omission of environmental responsibility	Waste generation	Major event incompatibility and sustainability	Environmental destruction biodiversity	Destruction of protected areas	Poor urban Planning	Poor coordination	High energy and water consumption	**Total**
Giga-events (n=19)	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**1**	**0**	**0**	**13**
Summer Olympic games (n=19)	0	1	1	1	0	0	0	0	1	1	1	1	2	2	1	1	0	0	13
Barcelona 1992 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Athens 2004 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Beijing 2008 (n=6)	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*
London 2012 (n=4)	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*6*
Rio de Janeiro 2016 (n=6)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*2*	*1*	*1*	*0*	*0*	*5*
Multiple's editions (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*1*
Mega-events (n=15)	**4**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**3**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**18**
Football World Cup (n=9)	2	1	0	0	1	1	1	1	0	2	2	0	0	0	1	0	2	0	14
Germany 2006 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
South Africa 2010 (n=4)	*1*	*1*	*0*	*0*	*1*	*1*	*1*	*1*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*9*
Brasil 2014 (n=2)	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*1*	*0*	*1*	*0*	*5*
Russia 2018 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Qatar 2020 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Winter Olympic Games (n=3)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Torino 2010 (n=1)	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*
Sochi 2014 (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Multiple's editions (n=1)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Games of the Commonwealth de 2010 (n=1)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Eurocup 2012 (n=1)	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Universiade Kazan 2014 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Major-events (n=18)	**7**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**1**	**14**
World Ski Championships in St. Moritz 2003 (n=2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FA Cup Final 2003/2004 (n=2)	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	5
Rally World Championship 2004 (n=1)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
AFCON 2013 (n=1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tour de France 2007 (n=1)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

World games of the Kaohsiung 2009 (n=1)	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Australia GP F1 2009 (n=1)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Baseball major leagues 2010-2016 (n=1)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Rally international of Hail 2016 (n=1)	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
no event assigned (n=7)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**4**
TOTAL	11	3	1	2	1	1	1	1	1	5	5	4	2	3	3	1	2	2	49

Table S3 Inconclusive impacts per event-by-event classification and type (events N=52)

Event	Neutral emissions	Importance of the planning phase	**TOTAL**
Mega-events (n=15)			
Football World Cup (n=9)	**1**	**0**	**1**
Qatar 2020 (n=1)			
Major-events (n=18)	**0**	**3**	**3**
World Ski Championships in St. Moritz 2003 (n=2)	0	2	2
FA Cup Final 2003/2004 (n=2)	0	1	1
TOTAL	**1**	**3**	**4**

Figure S1 Selection and data extraction (editable)

