

SPAIN, TOWARDS A PIG FACTORY FARM NATION?



ISSUE BRIEF • MARCH 2017

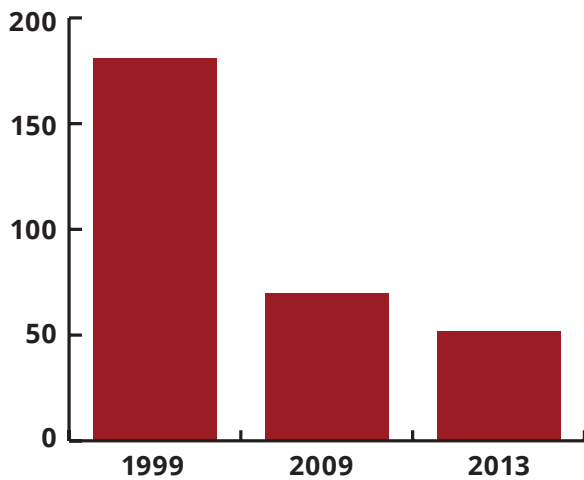
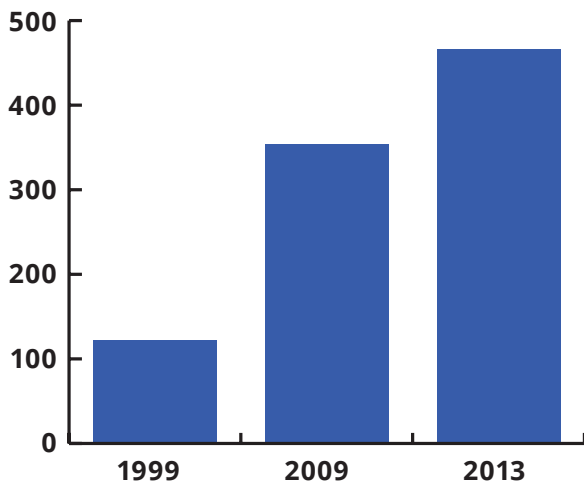
In Spain, the pork industry accounts for 37 per cent of total livestock production and for 14 per cent of total agricultural production, generating some €6 billion in revenue in 2014.¹ Spain is the third largest exporter of pork after China and the United States and became the top pork exporter in the European Union (EU) in 2015, surpassing Germany and Denmark.² In 2015, Spain also had the largest pig population in the EU, at 28.3 million animals.³ As other pork producers in Europe suffer declines, Spain has increased its production and exports as a result of high industry integration and the lowest production costs among major EU producers.⁴

Because of integration and low production costs, the Spanish pork industry is increasingly concentrated in just a few hands, with the number of farms diminishing rapidly and farmers facing growing marginalization. Meanwhile, the size of pig farms has grown dramatically, with thousands of pigs now packed into large confinement barns. This concentration has resulted in worsening labour conditions and in rising impacts on the environment and animal welfare.

Historically, pork production in Spain occurred mainly in the western part of the country, where farmers raised traditional Iberian pig breeds in the extensive farms and forests of the region.⁵ Industry consolidation began in the 1960s with the development of the feed industry, a key factor in the emergence of factory farming. Today, the pork industry is controlled by vertically integrated companies that provide the feed, animals, production standards and rules, while farmers are contracted to raise and fatten the animals for sale at a previously agreed upon price.

Since the 1960s, consolidation processes have emerged in other areas of the production chain, such as slaughterhouses, as well as through co-operatives — such as Coren and Guissona — that began operating at various levels of the production chain. Meat companies such as El Pozo and Valls developed their own integration processes. The final wave of consolidation came from large supermarkets such as Carrefour, Eroski and Mercadona.⁶

Spain has developed an export-oriented pork industry that is heavily concentrated and extremely reliant on world markets, both for consumer demand and for inputs. Feed accounts for 70-80 per cent of pork production costs.⁷ Prices for soy — the main source of protein in pig feed and a leading commodity in international agricultural markets — change every week.⁸ (See Box.) Labour, by comparison, accounts for just 2.1 per cent of pork production costs.⁹

FIGURE 1**TOTAL NUMBER OF PIG FARMS***in thousands of farms***AVERAGE NUMBER OF PIGS PER FARM**

SOURCE: INE 2011 & INE 2014

Fewer farms, bigger farms

The total number of pig farms in Spain has declined dramatically in recent years. From 1999 to 2009, more than 110,000 farms disappeared, a loss of 61.4 per cent in only a decade.¹² Over that same period, the country's total pig population increased 12.3 per cent, to nearly 25 million animals.¹³ Of the pig farms that remain, 80 per cent are considered "intensive" operations, together hosting some 90 per cent of Spain's pigs.¹⁴

By 2009, intensive pig farms had accommodations for some 27.5 million pigs. Of these accommodations, 87.3 per cent were for housing pigs indoors on complete or partially slatted floors.¹⁵ These animals have no access to the outdoors and will never experience fresh air or daylight. Only around 5 per cent of Spain's pigs were kept free on straw litter.

Meanwhile, industry concentration continues. Data indicate that during the five-year period between 2009 and 2013, another 18,000 pig farms disappeared in Spain, a 25 per cent decrease, leaving just 51,767 farms remaining.¹⁶ Meanwhile,

Soy

In 2007, Spain imported 4.2 million tonnes of soy to feed its factory farms.¹⁰ Most of the soy came from South America, where the rapid expansion of soy plantations has contributed to massive environmental and social impacts. A 2010 report by Friends of the Earth Europe highlights the following impacts:¹¹

- **Deforestation and biodiversity loss.** The expansion of soy plantations — due mainly to factory farming — is responsible for massive deforestation, habitat and biodiversity loss, especially in ecologically significant areas such as the Amazon.
- **Climate change.** The manufacture of animal feed from soy results in considerable greenhouse gas emissions because of the clearing of forests for soy production and the use of fertilizers to grow the soy.
- **Water use and water pollution.** Soy can be a water-intensive crop when irrigation is used to boost yields. The United Kingdom consumes an estimated 1.43 billion cubic metres of Brazilian water annually through imported soy.
- **Expansion of genetically modified (GM) crops and corporate control.** GM soy accounts for more than half of the world acreage of GM crops. Most of this soy is grown from "Roundup Ready" seed that has been modified by Monsanto to be resistant to the company's glyphosate herbicide Roundup. The introduction of GM soy has increased glyphosate use dramatically, polluting water and affecting local communities.
- **Land grabbing:** The majority of soy plantations are owned by large landowners and multinational companies. As land is grabbed for soy plantations, small-scale farmers, indigenous peoples and rural populations are displaced. In Paraguay alone, 9,000 peasant families have been displaced from their lands due to expanding soy production.



the pig population increased to 28.3 million in 2015.¹⁷ The number of animals per farm has skyrocketed from an average of 122 in 1999 to 354 in 2009 to 467 in 2013.¹⁸

Traditional pig farming in Spain still occurs in the regions of Andalucía, Castilla y León and Extremadura. On traditional farms, pigs roam freely in *dehesas* — a cultural landscape of open forests — and are raised primarily from the traditional Spanish Iberian pig breed. In 2008, this model accounted for 1 million of the Iberian pigs slaughtered; another 3 million of the Iberian pigs slaughtered were raised on factory farms and by other mixed production means.¹⁹ The loss of pig farms has been most acute in the regions of Castilla y León, Extremadura, Andalucía and Galicia, bringing severe damage to local rural economies.

Industry concentration

Just six Spanish provinces — Lerida, Huesca, Zaragoza, Murcia, Barcelona and Segovia — host half of the pigs in the country.²⁰ Lerida, with 443,029 inhabitants, hosted nearly 10 pigs per person in 2015.²¹ In one county of Lerida, La Noguera, the ratio was 23 pigs per person. In the county of Cinco Villas, in Zaragoza province, the ratio is 25 pigs per person. La Litera, in Huesca province, hosts more than 40 pigs for each of its 18,696 inhabitants.²²

Similarly, just five provinces account for 54.4 per cent of pig slaughtering in Spain: Barcelona, Gerona, Murcia, Lerida and Malaga, all of which are located close to the country's main consumption centres and meat industries.²³ In 2015, the pork industry slaughtered 46.4 million pigs, 3 million more than in 2014.²⁴ This amounts to nearly 4 million tonnes of meat¹, and pork production records continue to be surpassed year after year.²⁵ In 2015, one pig was slaughtered for every person living in the country.²⁶ Spain is home to some 700 slaughterhouses, 20 per cent of which work exclusively with pork.²⁷ The region of Catalonia alone accounted for 42.2 per cent of all meat production in the country in 2015.²⁸

Traditionally, almost all pigs sold in Spain were sold at auction or through direct negotiations between farmers and meat producers. Today, most pigs are controlled by the meat industry, supermarkets or meat processors well before the time of slaughter, either because these players own the pigs or because they have already contracted to buy them. Due to increased vertical integration, traditional cattle markets (*lonjas*) are now focused mainly on providing information about prices and markets. Meanwhile, large companies have considerable negotiation capacity and are able to fix prices by imposing their own business models, characterised by strict conditions and market volatility.²⁹

Manure overload

The tremendous amount of manure produced on pig factory farms is stored in lagoons and applied (often over-applied) to cropland.

The 28.3 million pigs registered in Spain in 2015 produced nearly 61 million cubic metres of manure. The amount of pig manure produced in just one year in Spain could fill more than 23 times the capacity of the F.C. Barcelona stadium

A country full of manure

Spills and illegal discharges related to manure management in the pork industry have been reported all around Spain. The problem worsened after 2014 when the government canceled subsidies for manure treatment plants (which used manure to produce electricity), a move that resulted in the closure of numerous plants.⁴¹ The following is an overview of media reports from 2015 and 2016.

Law enforcement and environmental agencies in Catalonia reported frequent intentional direct dumping of manure into rivers or municipal sewage systems.⁴² But illegal manure spills were investigated all over the country, including 15 cases in just five months in the small Matarraña river basin in Aragon, where poor maintenance of manure lagoons contributed to leakage into the river.⁴³ Other incidents include an illegal manure spill in Huesca and an accidental manure spill in Salamanca.⁴⁴ In Murcia, authorities launched a regional police operation focused on illegal manure discharge called "Operación purín" (Operation Manure).⁴⁵

An individual was sentenced to one year of prison for illegal manure discharge in Seville, and another was issued a big fine in Fuerteventura.⁴⁶ Three people were involved in a court case on groundwater pollution from manure discharge in Malaga, where pollution levels in some water sources were 45 times over the legal limit.⁴⁷ An attorney called for four years of prison for the owner of a pig factory farm in Huelva for manure discharge that caused environmental damage to a natural park and affected the health of neighbouring residents.⁴⁸

The deaths of thousands of fish were reported in Coruña and Lugo as a result of illegal manure discharge in several rivers.⁴⁹ The deaths of protected crab populations from similar causes were reported in Barcelona⁵⁰

Communities complained about noxious odors from manure over-application in villages of Tarragona³, Alicante⁴ and Segovia, where a new regulation might ban the field application of manure during weekends, holidays and other festivities to protect tourism.⁵¹

Complaints about illegal manure discharge were reported in Murcia⁷ and Valencia.⁵² A forest fire revealed an illegal manure discharge in Pontevedra.⁵³ Accidental manure spills to rivers in Coruña and Toledo forced the cancellation of drinking water supplies to the affected areas.⁵⁴ In Lugo, a manure spill from a truck resulted in the closure of a local road, and another truck spilled two tonnes of manure on a bridge over the Miño River.⁵⁵

Antibiotic misuse on factory farms

Antibiotics are critical tools in human medicine. But medical authorities are warning that these life-saving drugs are losing their effectiveness. Bacteria evolve in response to the use of antibiotics both in humans and in animals. The development of antibiotic resistance is hastened by the use of low doses of antibiotics on industrial farms. For decades, the livestock industry has used drugs routinely not to treat sick animals, but for disease prevention and growth promotion, a practice known as nontherapeutic use. This is a common practice in densely packed and unsanitary concentrated animal feeding operations.⁵⁶ The EU phased out the use of antibiotics for growth promotion in 2006, but the drugs are still being used as a prophylactic treatment to prevent diseases.

In Spain and worldwide, the agriculture sector uses vastly more antibiotics than human medicine. It uses drugs from every major class of antibiotics used in human medicine. In the United States, with its massive factory farming industry, 80 per cent of all antibiotics are sold for agricultural purposes. Many livestock producers may not even know just how many antibiotic drugs can be found in the pre-mixed feed that their contracts with meat companies require them to use.

Although the livestock industry continues to downplay its role in antibiotic resistance worldwide, the evidence is clear. There is a wide agreement in academia that nontherapeutic uses of antibiotics in livestock pose a threat to human health. Antibiotic-resistant bacteria can spread from farm animals to humans via food, via animal-to-human transfer on farms and in rural areas, and through contaminated waste entering the environment.

Spain has the highest consumption of antimicrobials in the EU. One-third of all drugs used for food-producing animals in the EU in 2014 were sold in Spain. The Spanish meat industry used 419 milligrams of veterinary antimicrobial agents per 1,000 tonnes of produced meat, around 3 times the amount used in Germany and nearly 10 times that used in Denmark, other important meat-producing countries. Ninety-six per cent of those antibiotics are integrated directly into the feed, or are sold to be added to the feed or water directly on the farm for group animal treatment. Group medication is used mainly in poultry and pig factory farms.⁵⁷

Antibiotic resistance causes 25,000 deaths in Europe every year, with an annual cost of over €1,500 million. If resistance continues to grow at the current rate, by 2050 more than 10 million people could die worldwide from infections that previously could have been treated by antibiotics.⁵⁸

“Camp Nou”.³⁰ Pigs in Spain produce more manure than the country’s 46.5 million residents (which produce around 41.8 million cubic metres per year).³¹

The pork industry is concentrated in specific regions. Catalonia and Aragon hosted around half of the pigs in the country in 2013, housing 6.7 million and 5.3 million pigs, respectively.³² Just three counties in Catalonia — Segrià, Noguera and Osona — together hosted more than 2.5 million pigs, which produced 16 times more manure than the total population of those counties. The pigs in Segrià, Noguera, Osona and Alt Empordà counties alone produced more manure in 2009 than the total population of Catalonia, at 7.5 million people.³³

Regional concentration of the pig industry has contributed to a massive manure management problem that impacts local communities, water supplies and the environment. (See Box.) Researchers have identified a direct link between the number of pigs in an area and elevated nitrate concentrations in local drinking water supplies.³⁴

Unlike in cities, where human waste ends up at a sewage treatment plant, untreated livestock waste is flushed from confinement buildings into large lagoons. These waste pools can leak or burst, especially during storms, spilling into local waterways, killing fish and spreading waste and odor across communities. Manure from lagoons is applied to fields as a fertilizer, but



when such applications exceed the ability of fields to absorb the nutrients, the residual nutrients (mostly nitrogen and phosphorus) and bacteria leach into groundwater and rivers.³⁵

Local news sources frequently report instances of villages that have had to issue prohibitions on tap water drinking due to high nitrate concentrations.³⁶ In 2015, authorities in

Aragon released 61 official alerts related to nitrate pollution in drinking water.³⁷ In Catalonia, nitrate pollution now exceeds the regulatory limit (50 milligrams per litre) in 41 per cent of groundwater tables, and nitrate pollution has led to problems with access to drinking water in 142 of the region's 947 municipalities.³⁸ The Catalan government invests more than €6 million annually to provide clean drinking water to the affected populations.³⁹

Communities also are experiencing problems related to labour conditions. The media has reported on exploitative working conditions, low wages and racism towards workers — most of them migrants from Africa, China or Eastern Europe — in slaughterhouses and in the pork industry as a whole.⁴⁰

Conclusion

Spain's pork industry is expanding rapidly, with development characterised by increased concentration, low production costs, and heavy reliance on exports and international markets. But this industry is not being held accountable for its impacts on the environment, workers and communities.

As more and more factory farm projects are announced in the country, resistance is growing among communities that are suffering the impacts of this industry. There is an urgent need to rethink Spanish development of the pork industry, so that farming can again be an activity that supports rural communities, meets consumer demands, and respects the environment and labour conditions.

Endnotes

- 1 Coordinadora de Organizaciones de Agricultores y Ganaderos (COAG). "Anuario Agrario." 2015.
- 2 Rousseau, O. "Denmark loses place as top EU pork exporter." *Global Meat News*. 24 March 2016.
- 3 Ministerio de Agricultura, Pesca, Alimentación y Medio Ambiente. "Caracterización del Sector Porcino Español año 2015." 2016.
- 4 Rousseau, O. "Spain offsets Europe's pig herd decline." *Global Meat News*. 25 February 2016.
- 5 Asociación Interprofesional del Cerdo Ibérico (ASICI). "Plan Estratégico del Sector Porcino Ibérico." 2009.
- 6 Tribunal Gallego de la Competencia. "Estudio Sobre el Sector de los Mataderos en Galicia Desde el Punto de Vista de la Competencia." 2008.
- 7 COAG (2015).
- 8 COAG (2015).
- 9 Ministerio de Agricultura, Alimentación y Medio Ambiente. "Ganado Porcino de Ciclo Cerrado en Aragón. Estudios de Costes y Rentas de las Explotaciones Agrarias. Resultados Técnico-Económicos." 2013.
- 10 Amigos de la Tierra. "Alimentos Kilométricos. Las Emisiones de CO2 por la Importación de Alimentos al Estado Español." 2012.
- 11 Friends of the Earth Europe. "How the CAP Is Causing Soy Expansion and Deforestation in South America." 2010.
- 11 Instituto Nacional de Estadística. "Censo Agrario 2009." 2011.
- 13 Instituto Nacional de Estadística. "Censo Agrario 2009." 2011.
- 14 Consejería de Agricultura y Pesca. "Junta de Andalucía. La Producción de Carne en Andalucía." 2010.
- 15 Instituto Nacional de Estadística. "Encuesta sobre Métodos de Producción en las Explotaciones Agrícolas." 2009.
- 16 Instituto Nacional de Estadística. "Encuesta sobre la Estructura de las Explotaciones Agrícolas 2013." 2014.
- 17 Ministerio de Agricultura, Ganadería, Alimentación y Medio Ambiente. "Caracterización del Sector Porcino Español año 2015."
- 18 Instituto Nacional de Estadística (2011); Instituto Nacional de Estadística (2014).
- 19 ASICI (2009).
- 20 Fundación Cajamar, "El Sector del Porcino en España." 2011.
- 21 Institut d'Estadística de Catalunya. "Pigs in Lerida in 2015." Anuario Estadístico de Catalunya. Ganadería. Available at www.idescat.cat/pub/?id=aec&n=452&lang=es&t=2015; Institut d'Estadística de Catalunya. "Population of Lerida in 2015." Anuario Estadístico de Catalunya. Evolución de la Población. Available at <http://www.idescat.cat/pub/?id=aec&n=245&t=2015&lang=es>.
- 22 Gobierno de Aragón. "Pigs per county in Aragon." Directorio Porcino 2008-2013. Available at www.aragon.es/estaticos/GobiernoAragon/Departamentos/AgriculturaGanaderiaMedioAmbiente/AgriculturaGanaderia/11_Estadisticas_Agrarias/EstadisticasGanaderas/Directorios_ganaderos/DIRECTORIO_PORCINO_2008_2009_2013.xls; Gobierno de Aragón. "Population per county in Aragon." Instituto Aragonés de Estadística. Available at www.aragon.es/estaticos/GobiernoAragon/Organismos/InstitutoAragonésEstadística/Documentos/docs/Areas/Demogra/1_CifrasPoblacion/CifrasOficialesPoblacion/DCOMSEXO.xls.
- 23 Fundación Cajamar (2011).
- 24 Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente (2016).
- 25 Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente (2016).
- 26 Instituto Nacional de Estadística. "Cifras de Población y Censos Demográficos." 2016. Available at http://www.ine.es/inebaseDYN/cp30321/cp_inicio.htm.
- 27 Fundación Cajamar (2011).
- 28 Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente (2015).
- 29 PRODESCON S.A. "Informe Sobre las Lonjas de Productos Agropecuarios." 2013.
- 30 Camp Nou dimensions are 48 metres high by 250 metres long by 220 metres wide, from F.C. Barcelona, "Un estadi cinc estrelles." Available at <https://www.fcbarcelona.cat/club/instal·lacions/fitxa/camp-nou-un-estadi-cinc-estrelles>.
- 31 Pig manure production based on Boletín Oficial del Estado. "Real Decreto 324/2000, de 3 de marzo, por el que se establecen normas básicas de ordenación de las explotaciones porcinas." 2000. Available at https://www.boe.es/diario_boe/txt.php?id=BOE-A-2000-4447; human manure production based on US Department of Agriculture. Natural Resources Conservation Service. "Part 651: Agricultural Waste Management Field Handbook. Chapter 4. Table 4-17." 2008. Available at <http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=31475.wba>.
- 32 Instituto Nacional de Estadística (2014).
- 33 Pigs per county in Catalonia from Institut d'Estadística de Catalunya. Generalitat de Catalunya. "Anuario Estadístico de Catalunya." 2015. Available at <http://www.idescat.cat/pub/?id=aec&n=449&t=2015&lang=es>.
- 34 Gomis García, M. et al. "Contaminación por Nitratos en las Aguas Subterráneas de Doce Comarcas de Cataluña Consideradas Zonas Vulnerables." *Tecnoagua*. 2013.
- 35 Food & Water Watch, "Factory Farm Nation." 2015.
- 36 "La Contaminación por Nitratos afecta a una Treintena de Municipios." *El Heraldo de Aragón*. 19 June 2015; "Dos Pueblos Prohíben el consumo de Agua por Exceso de Nitratos." *El País*. 14 June 2013. "El Agua Contaminada con Nitrato Amenaza a 65 pueblos de Tarragona." *Diari de Tarragona*. 10 October 2013.
- 37 Servicio de Seguridad Alimentaria y Salud Ambiental Dirección General de salud Pública. Gobierno de Aragón. "Calidad del Agua de Consumo Humano en la Comunidad Autónoma de Aragón Año 2015." 2015.

- 38 “El 41% de los Acuíferos está Contaminado por Nitratos.” *El País*. 7 April 2016.
- 39 “El 41% de los Acuíferos está Contaminado por Nitratos.” *El País*. 7 April 2016.
- 40 “Sobrevivir al Matadero.” *El País*. 14 April 2016; “En este Matadero de España ‘los Trabajadores se Mean Encima Porque no Pueden Austentarse.’” *Vice News*. 13 July 2016; “La Gran Revuelta de los Mataderos.” *El País*. 14 July 2016.
- 41 “El Cierre de las Plantas de Tratamiento de Purines Causa Vertidos Ilegales de Residuos.” *Cadena Ser*. 15 April 2014.
- 42 “La Guardia Civil denuncia los propietarios de una granja de Sant Pau de Segúries.” *La Vanguardia*. 20 April 2016; “ACA denuncia a una granja de Navata por verter purines al alcantarillado.” *El Mundo*. 22 November 2016.
- 43 “Aumentan las Denuncias por los Vertidos de Purines.” *El Periodico de Aragón*. 9 June 2016.
- 44 “Denuncian un Vertido Ilegal de Purines en un Campo de Puente de la Reina de Jaca.” *Radio Huesca*. 2 June 2016; “El Seprona Investiga las Consecuencias de un Vertido de Purines entre Villoruela y Babilafuente.” *Salamanca al Día*. 31 January 2015.
- 45 “La Guardia Civil Investiga al Responsable de una Granja por Vertidos Ilegales de Purines.” *La Región*. 8 June 2016.
- 46 “Condenado un Ganadero a un Año de Cárcel por Verter Purines al Río en Sevilla.” *La Vanguardia*. 25 November 2016; “Condenado un Ganadero por un Vertido de Purines en Fuerteventura que Afectó al Barranco de Godoy.” *El Diario*. 14 June 2016.
- 47 “Implicadas Tres Personas por Contaminar un Acuífero de Almargen con Purines.” *La Opinión de Málaga*. 10 March 2016.
- 48 “Piden 4 Años de Cárcel para Ganadero por Vertidos Tóxicos Dañaron Salud Vecinos.” *La Vanguardia*. 6 November 2016.
- 49 “Denuncian el Vertido ‘Continuado’ de Purín en los Ríos Maroñas y Xallas.” *La Voz de Galicia*. 12 October 2016; “El Seprona Investiga un Vertido de Purín en un Río de Guitiriz.” *La Voz de Galicia*. 20 July 2015; “La Muerte de Peces en un Afluente del Miño irá a los Tribunales.” *La Voz de Galicia*. 7 August 2016.
- 50 “Denuncian un Vertido de Purines que ha Matado Miles de Cangrejos de Río en Osona.” *La Vanguardia*. 30 September 2016.
- 51 “Vecinos de Cambrils Alertan de Olores ‘Pestilentes’ por el Arrojo de Purines.” *Diari de Tarragona*. 18 August 2016; “Vecinos de Blancafort, Hartos del Fuerte Olor a Purines de una Granja.” *Diari de Tarragona*. 13 April 2016; “El Seprona Investiga Vertidos de Purines Denunciados por vecinos Desde Hace Años.” *Informacion.es*. 16 June 2016; “El Mal Olor y los Vertidos de Purines Asfixian los Negocios de Turismo Rural.” *El Norte de Castilla*. 15 November 2015; “El Turismo Rural Pide Prohibir el Vertido de Purín También los Viernes.” *Acueducto.com*. 2 December 2016.
- 52 “IU-V Denuncia ante el Seprona que Hay un Vertido Ilegal de Purines en Purias.” *La Opinión de Murcia*. 2 February 2016; “Denuncian Vertidos Incontrolados de Purines en el Barranco de L’Horteta.” *Levante-EMV*. 16 March 2015.
- 53 “Un Incendio Deja a la Vista un Vertido de Purines a un Afluente del Río Asneiro.” *El Faro de Vigo*. 13 July 2015.
- 54 “Los Vertidos Contaminantes al Mendo por Purines son ‘Muy Habituales.’” *La Voz de Galicia*. 7 July 2016; “Prohibido el Consumo de Agua en Gálvez por un Vertido de Purines.” *La Tribuna de Toledo*. 28 February 2015.
- 55 “Un Vertido de Purín Obliga a Cortar la LU-113 en Abadín.” *El Progreso*. 30 August 2016; “Ecologistas Piden que el Vertido de Lodos de Castro de Rei se Lleve a la Vía Judicial.” *La Voz de Galicia*. 7 September 2016.
- 56 Food & Water Watch. “Antibiotic Resistance 101. How Antibiotic Misuse on Factory Farms Can Make You Sick.” 2015.
- 57 European Medicines Agency. “Sales of Veterinary Antimicrobial Agents in 29 European Countries in 2014. Sixth ESVAC Report.” 2016.
- 58 O’Neill, Jim. “Tackling Drug-Resistant Infections Globally: Final Report and Recommendations.” 2016.

Food & Water Europe is a program of Food & Water Watch, Inc., a non-profit consumer NGO based in Washington, D.C., working to ensure clean water and safe food in Europe and around the world. We challenge the corporate control and abuse of our food and water resources by empowering people to take action and transforming the public consciousness about what we eat and drink.

Copyright © March 2017 by Food & Water Europe. All rights reserved.
This issue brief can be viewed or downloaded at foodandwatereurope.org.

