CASH Report
Technical solutions to salt reduction across 8 categories of food

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Professor Graham MacGregor, Chairman
Katharine Jenner, Campaign Director
Hannah Brinsden, Nutritionist
Malcolm Kane, Food Technologist and CASH member
Email k.jenner@qmul.ac.uk

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Introduction:

In the UK, and indeed around the world, we are all eating too much salt. Salt raises blood pressure and this is the major cause of strokes, heart attacks and heart failures; the most common causes of death and illness in the world. A high salt diet is also linked to kidney disease, kidney stones, cancer of the stomach, osteoporosis, obesity, Meniere's Disease, Alzheimer's Disease and diabetes.

The UK is leading the world in salt reduction, providing an invaluable template of how to reduce salt, that is: by setting progressive salt reduction targets to ensure the food industry has a 'level playing field', whereby all food companies have to work towards similar reductions in the salt content of food in the same time period. The progressive nature of the targets also ensures that the consumer palette can be re-trained, to become more sensitive to the taste of salt and lower salt containing foods are preferred.

Leatherhead Food Research has been commissioned by the Food and Drink Federation (FDF) and the British Retail Consortium (BRC), on behalf of their members, to perform a review of technical solutions to salt reduction across 8 categories of foods. The report has been commissioned in part to ensure food manufacturers have the information available to them to meet the Responsibility Deal's Salt Pledge, which states the following caveat to meeting the 2012 salt targets:

'For some products this will require acceptable technical solutions which we are working to achieve'

This document has been compiled by CASH, to assist with the production of the Leatherhead Food Research report.

The majority of the 2012 salt targets, as part of the Responsibility Deal salt pledge, have already been met by the food industry. There are only a few products across 8 categories which the food industry has deemed the 2012 targets 'difficult' to achieve including: meat; bread; cheese; snacks; cakes, pasties and pies; canned fish; pesto and thick sauces; puddings.

In this document, we report examples of products meeting the targets in all categories of food and demonstrate that the 'acceptable technical solutions' to salt reduction are increasingly widely available; any barriers to salt reduction relate mainly to taste, rather than food safety. CASH do not consider 'taste' an acceptable technical barrier, firstly because excess salt in the diet is a serious public health issue that needs to be tackled, secondly because there has been a wide range of solutions formulated by the research industry to help maintain taste, and thirdly, even if changes in flavour are detectable, taste buds will adjust to less salt given gradual market wide reductions.

Information in this CASH report has been compiled from the following sources which are available on request:

- ⇒ The 2008 Food Standards Agency's (FSA) meetings to discuss setting the 2012 targets
- ⇒ Guidance from our CASH member independent food technologist
- ⇒ Published independent advisory report to the FSA from May 2006.
- ⇒ Product data has been collected from ASDA, Sainsbury's and Tesco websites as well as CASH surveys, and is intended to act as a guide rather than a comprehensive picture of current levels.

NB CASH had no access to sales weighted data to assist with this report.

1. Meat

This section refers to the salt target categories 1.1 – 1.7: <u>Meat and meat products, especially sliced meats, cured meats (pepperoni), bacon, sausages, burgers and meat pies</u>

Salt Function:
Sodium, along with the water activity (Aw)*, acidity (measured by pH), storage and processing method plays a role in the control of microbial growth in meat products. Sodium also has water binding properties which is used to increase product weight and, in turn, succulence. A significant source of salt in sausages are the pre-prepared seasonings.

Salt Reduction Technologies:
By compensating for a reduction in sodium by altering other factors it is possible to reduce the salt content of meat without a negative impact on safety. A combination of temperature controls, preservatives (e.g. potassium chloride has been shown to be useful in a 50:50 ratio of NaCl to KCl), preservative gases (e.g. a combination of nitrogen and CO2 gases) and different packaging systems can be used to permit lower salt levels of meat products. Certain functions of salt can be achieved with alternative ingredients such as functional proteins for binding and enzymes for gluten strengthening. Furthermore, reducing the salt level in the seasonings would result in a reduction in salt in the sausage.

Current Industry levels (see table 1):
Bacon: The majority of supermarket bacon contains 3-4g of salt/100g, thus are far higher than 2012 target of 2.88g/100g. M&S cited problems with cured and uncured meats in their Responsibility Deal (RD) update while some of the cafes (e.g. Costa) claim that the ham contained in their sandwiches is making it hard to meet the targets.

However VION (bacon supplier) have recently announced that they have developed a bacon containing 30% less salt at 1.8g/100g using umami flavouring technology, thus demonstrating that further reductions are possible. This bacon is now used in M&S. They plan to roll the technology out to sausages, cooked ham and gammon.

Sausages: A CASH Survey in 2011 showed that approximately 15% of sausages were already below the target of 1.13g/100g, with many containing 1.0 - 1.1g/100g (mostly of the premium ranges). Samworth Brothers (a leading sausage manufacturer) stated in their RD update that they have reached the targets in the majority of their products. Norfolk County Council has recently developed a pack to enable local butchers to reduce the salt levels of their sausages by up to 35%, even when using pre-prepared seasoning.

Ham: The majority of products exceed the 2012 targets and contain approximately 2-2.5g/100g, however there are some lower products available demonstrating it is possible for further reductions to be made across the categories in order to meet the target.

Conclusion:
It is clear that in each of the sub-categories of meat deemed 'challenging' by the food industry, it is possible to meet the targets. Product examples for each sub-category were found that contained salt levels approximately 30% lower than the 2012 targets. As such, CASH expects the food industry to be able to meet the 2012 targets on schedule.

Table 1: Meat and meat products, especially sliced meats, cured meats (pepperoni), bacon, sausages, burgers and meat pies		
Product	**2012 target**	**Low salt examples (April 2012)**
1.1 Bacon Includes all types of injection cured bacon, e.g. sliced back, streaky, smoked and unsmoked bacon, bacon joints etc. Excludes all dry and immersion cured bacon.	2.88g salt (av p)	Tesco Smoked Healthy Living Bacon Rashers - **2g/100g** *(Note, VION bacon developed a 30% lower bacon now available in M&S at 1.8g/100g)*
1.2 Ham/other cured meats Includes hams, cured pork loin and shoulder etc. Excludes 'Protected Designation of Origin' and traditional speciality guaranteed products, e.g. Parma ham. Also excludes speciality products produced using traditional methods such as immersion and dry cured processes including cured tongue.	1.63g salt (av p)	Sainsbury's Be Good To Yourself Cooked Ham - **1.38g/100g**
1.3 Sausages1.3.1 Sausages Includes all fresh, chilled and frozen meat sausages, e.g. pork, beef, chicken, turkey, etc.	1.13g salt (max)	Riley's 10 Traditional Pork Sausages - **0.52g/100g**
1.3.2 Cooked sausages and sausage meat products Includes all cooked sausages and sausage meat products e.g. stuffing, turkey roll with stuffing etc.	1.5g salt (max)	Sainsbury's Basics Cheese & Onion Pasties - **0.5g/100g**
1.4 Meat Pies1.4.1 Delicatessen, pork pies and sausage rolls Includes all delicatessen pies, pork pies and sausage rolls e.g. game pie, cranberry topped pork pie, Melton Mowbray pork pie etc.	1.13g salt (max)	Tesco Mini Melton Mowbray Pork Pie - **1g/100g**
1.4.2 Cornish and meat-based pasties Includes all Cornish and meat-based pasties only.	1.0g salt (max)	Sainsbury's Cornish Pasty - **0.58g/100g**
1.4.3 Other meat-based pastry products including pies and slices, canned and frozen products. Includes all meat-based pastry products, pies, slices etc whether chilled, canned, frozen etc.	0.75g salt (max)	Sainsbury's Taste the Difference Steak Pie with Shortcrust Pastry- **0.28g/100g**
1.6 Burgers, grillsteaks etc 1.6.1 Standard fresh and frozen burgers and grillsteak products Includes beef burgers, hamburgers, pork/bacon burgers, chicken burgers, turkey burgers and all kebabs. Excludes canned burgers (see category 1.7.1)	0.75g salt (max)	**Beef Burgers:** Waitrose Aberdeen Angus Beef Quarter Pounders - **0.5g/100g** **Chicken Burgers:** Birds Eye Chicken Burgers - **0.5g/100g**
1.6.2 Speciality and topped burgers and grillsteaks Includes all flavoured products.	0.88g salt (max)	**Grillsteaks:** Tesco 2 Peppered Beef Grill Steaks - **0.8g/100g** **Flavoured burgers:** Tesco Finest 4 Sweet Tomato And Basil Burger - **0.7g/100g**

2. Bread

This section refers to salt target categories 2.2 – 2.3: <u>Bread particularly speciality and morning goods</u>

Salt Function:
Bread with additions: Bread itself does not require salt for a functional purpose. Much of the salt in 'bread with additions' will be from the additions such as olives and cheese.
Morning goods: The sodium contained in morning goods will primarily be from the yeast or raising agents used e.g. Sodium bicarbonate.

Salt Reduction Technologies:
Bread with additions: Changing processing methods and/or changing from a baking yeast to a brewing yeast can help to reduce salt levels. Some products, e.g. Naans and some Mediterranean 'special breads' have a long shelf life – reducing salt is thought to increase mould/bacteria growth. In 2008 FSA meetings the BRC were questioned over whether this long shelf life was required. Lower salt additions will help to lower the salt level of 'bread with additions' and manufacturers should source lower salt ingredients in order to meet the targets.

Morning Goods: Ammonium and potassium based raising salts have been used successfully in some products as alternatives to the commonly used sodium bicarbonate. In 2008 FSA meetings, the FSA raised the issue that crumpets are chemically leavened with sodium bicarbonate, in addition to containing salt, and suggested that crumpets could therefore lose their structure if salt was reduced. However, there are some known examples of products meeting maximum targets (see below), so CASH does not accept this. There is a potential role for alternative raising agents to be used, for example a low sodium raising agent based on altering the sodium crystals to provide the same 'salty hit' with much less sodium has been developed by Eminate and Kudos Blends has developed a potassium based raising agent. Potassium salts have already been explored by the food industry and are being successfully used to replace sodium, demonstrating the industry is receptive to such alternatives.

Current Industry levels (see table 2):
It is difficult to isolate products that are meeting the targets to act as a benchmark as there is such a wide range of products included in this category. It is evident that many products that fall into the 'bread and rolls with additions' category contain 1-1.2g/100g and are therefore meeting the 2012 targets, with only a couple of exceptions (e.g. Cheese scones). In the morning goods category a wide range of levels were found in each of the sub-categories. There were examples across the product types meeting the 1g maximum target. NB only a couple of examples were found (bagels and croissants) that met the lower average target of 0.75g/100g. In the RD updates, Premier foods cited difficulty with morning goods as they claimed there was no alternative to sodium raising agents. However, EAT claims to meet all morning goods figures, with a 50% reduction in fruit brioche being made. Such inconsistent reports do not assist the industry case.

Conclusion:
It is evident that many products in the 'additions' category meet the target, and that sourcing lower salt ingredients to lower those that are not is crucial. There were a wide range of levels found in each of the morning goods sub-categories, with examples meeting the 1g maximum target in all. CASH would be keen to see the work that has been done by the industry further lower the levels in morning goods to bring them closer to the average targets, for instance: have alternative raising agents been explored?

Table 2: Bread particularly speciality and morning goods		
Product	**2012 target**	**Low salt examples (April 2012)**
2.2 Bread and rolls with additions Includes all bread and rolls (as listed at category 2.1 above) with "high salt" additions e.g. cheese, olives, sundried tomatoes etc. Also includes cheese scones.	1.2g salt (av r)	**Cheese Bread:** Tesco Finest Goats Cheese And Red Onion Hand Crafted Bread - **0.8g/100g** **Cheese Scone:** Tesco Finest 4 Cheese Scones - **1.3g/100g** **Olive Bread:** Sainsbury's Taste the Difference Spanish Olive Bread Sticks - **1.04g/100g** **Foccacia:** Sainsbury's Taste the Difference Gruyere Cheese & Red Onion Focaccia - **0.50g/100g**
2.3 Morning goods Includes plain and fruit scones, crumpets, pikelets, English muffins, Scotch pancakes, bagels, croissants, brioche, soda farls and waffles etc. Also includes all buns, e.g. hot cross, teacakes etc, except iced finger buns (see category 12.1 Cakes). Excludes cheese scones (see category 2.2).	0.75g salt (av r) 1.0g salt (max)	**Bagels:** Tesco Value Plain Bagels – **0.7g/100g** (range: 0.7-1.3g/100g) **Scones:** Sainsbury's Sultana Scone – **0.94g/100g** (range: 0.94-1.3g/100g) **Crumpets:** Sainsbury's Crumpets – **0.99g/100g** (range: 0.99-2.08g/100g) **Pancakes:** Sainsbury's Scotch Pancakes – **0.99g/100g** (range: 0.99-1.2g/100g) **Croissant:** Tesco all butter Croissants – **0.7g/100g** (range: 0.7-1.1/100g)

3. Cheese

This section refers to salt target categories 4.1 - 4.2.1: <u>Cheese particularly soft cheeses and cheddar</u>

Salt Function:
Salt has two major functions in cheese

1) It is a determinant of water activity (Aw) which in turn effects microbial growth
2) Along with acidity (pH) and calcium (Ca), the salt levels can effect casein hydration and aggregation which can impact on textural and cooking properties

Salt Reduction Technologies:
Hard Cheeses, e.g. Cheddar: The overall salt level is not important according to Guinee, 2004, rather it is the salt in moisture level (e.g. the ratio of the two). This means that any reductions in salt can be compensated for by altering other variables such as pH, process, temperature, plant hygiene and culture availability. These need to be explored thoroughly by the food industry. A stringent HACCP process, modern processing systems and careful control should ensure that these targets can be met. The partial replacement of sodium with potassium chloride may also have value in this type of cheese. Schroeder states that "dry salting (the process by which cheddar is made) is an inherently controlled process, thus specifying minimum salt levels is feasible in a modern plant". He concludes that "there is no scientific or technical barriers which would prevent the FSA's target levels for salt in hard cheese being possible. Even lower levels may also be possible.

Fresh cheese e.g. Soft cheeses: Fresh cheeses such as cottage cheese, fromage frais, mascarpone have a too high water activity (Aw) for salt to play a role as a preservative. They also do not require salt in their formation and instead rely on the cold chain and intrinsic high acidity for their storage. All cheeses in this category (category 4.2) contain very low levels or no salt at all. Soft white cheeses e.g. Philadelphia have been cited as an exception to this and companies have reported difficulty in reaching the targets. Schroeder comments that the use of Nicin (common use in US, not Europe) has been shown to improve shelf life and safety of such products and concludes that more work is required in this area. He calls for more predictive modelling to be presented by the industry.

Current Industry Levels (see table 3):
Hard Cheeses e.g. Cheddar: From our product research it is clear that almost all hard cheeses meet the 1.8g/100g target, with examples of products containing much less salt. Mature cheddar products are also typically meeting the targets despite previously having a higher target. A number of the other hard cheeses e.g. Wensleydale, are lower than cheddar at 1.3-1.5g/100g, and much lower than the target. Costa has stated cheese levels in sandwiches/paninis as one of the difficulties they are having with meeting the targets, however our research shows that it should be possible for them to source lower salt cheeses.

Fresh Cheese e.g. Soft cheese: Philadelphia branded soft cheese fails to meet the targets and contains 1g/100g. However, the supermarkets all have an own branded soft white cheese containing 0.5g salt/100g (below target), thus demonstrating it is possible to meet the targets.

Conclusion:
The targets for cheddar and soft cheese are clearly achievable based on the number of low examples found. The fact that some hard cheeses e.g. Wensleydale are able to be consistently made with lower levels of salt compared to needs to be explored.

Table 3: Cheese particularly soft cheeses and cheddar		
Product	**2012 target**	**Low salt examples (April 2012)**
4.1 Cheddar and other similar "hard pressed" cheeses e.g. Cheshire, Lancashire, Wensleydale, Caerphilly, Double Gloucester, Leicester, Derby etc, including mild, medium or mature and those products where levels of fat have been reduced	1.8g salt (av r)	**Cheddar:** Sainsbury's Taste the Difference West Country Farmhouse Mature Cheddar - **1.68g/100g** **Other hard cheese:** Sainsbury's Real Yorkshire Wensleydale - **1.3g/100g**
4.2 "Fresh" cheeses Excludes fromage frais as no salt is added to this product. Also excludes Brie, Camembert and other similar soft rinded cheeses. 4.2.1 Soft white cheese e.g. Philadelphia - Includes all soft white cheese, flavoured or unflavoured, including reduced fat products. Excludes cottage cheese (see categories 4.2.2 and 4.2.3)	0.55g salt (av r) 0.75g salt (max)	**Soft Cheese:** Sainsbury's Basics Soft Cheese - **0.50g/100g**

4. Crisps & Snacks

This section refers to salt target categories 11.2 - 11.3: <u>Extruded and pelleted snacks</u>

Salt Function:
With the possible exception of some extruded snacks, salt does not play a significant part in establishing the structure and texture of savoury snack products.

Schroeder reports that there are no food safety issues with reducing the salt in such products, and any structural effects that there may be in certain products can be overcome by formulation changes. Some manufactures have claimed that salt plays a role in the extrudability of certain extruded and pelleted snacks, but there is no evidence in the literature and companies should be asked to provide evidence to support this claim. In 2008 FSA meetings, SNACKMA indicated that they felt they had reduced salt to the limit, however further reductions since then indicate this was not the case.

Salt Reduction Technologies:
Some companies have already introduced potassium salts into their product range e.g. KP Hula Hoops in order to lower the level of sodium salts. There is a range of flavour enhancing technologies that have been developed by e.g. Soda-lo and Pepsico.

Current Industry Levels (see table 4):
Key brands such as Walkers and United Biscuits reported meeting 2010 targets for both pelleted and extruded snacks, however the 2012 targets are significantly lower (approximately 30% lower). Brand leaders are either not meeting or only just meeting the 2012 targets, while supermarket own label products and smaller brands have produced products with up to 84% less salt. Poppadoms are still very high in salt across the board , containing around 3g/100g, much higher than the target. However, lower examples which meet the target were found.

In the RD updates Associated British Foods reports that 'all extruded snacks meet targets', the Authentic food company expects to have their snack range, which included poppodoms, meeting targets by the end of the year and United Biscuits state that the entire Niknak range meets the extruded snack target. However, Premier foods have not yet met the target and cite salt as required in the expansion process of pelleted snacks, while PepsiCo say 'sodium plays a key role in the functionality and consumer acceptability of savoury crisp and snack products' and that further reductions are reliant on 'the investment in and development of new technologies'. Such inconsistent reports do not assist the industry case.

Conclusion:
There is evidence of products which are meeting the targets, with small brand and own-label products typically being much lower than the leading brand examples. This clearly demonstrates further reductions are possible and CASH would like to see the larger brands following suit, as this will have the greatest impact on salt intake.

Table 4: Extruded and pelleted snacks		
Product	**2012 target**	**Low salt examples (April 2012)**
11.2 Extruded snacks All extruded snacks e.g. cheese flavour corn puffs, potato hoops, all flavours except salt and vinegar	1.88g salt (av r) 2.5g salt (max)	**Cheese flavour Corn Puffs:** Organix Goodies Organic Cheese & Herb Puffs - **0.3g/100g** (Wotsits: 1.98g/100g) **Potato Hoops:** Tesco Potato Loops - **1.9g/100g** (Hula Hoops: 2.25g/100g)
11.3 Pelleted snacks All snacks made from pellets e.g. prawn cocktail flavour shell, crispy bacon flavour corn snacks, curly cheese snacks, all flavours except salt and vinegar. Also includes pappadoms.	2.25g salt (av r)	**Prawn cocktail shells:** Sainsbury's Prawn Cocktail Shells - **2.25g/100g** (Skips: 2.75g/100g) **Bacon corn snacks:** Tesco Bacon Rashers - **2.2g/100g** (Frazzles: 2.87g/100g) **Curly cheese snacks:** (Quavers: 2.21g/100g) **Pappadoms:** Asda Plain Poppadom - **2.0g/100g**

5. Cakes, pastries and pies

This section refers to salt target categories 12.1 – 12.3: <u>Cakes, pastries and fruit pies</u>

Salt Function:
These products share one common factor – salt is not a key ingredient particularly when the entire product is yeast raised or when it has a yeast raised component. When chemically leavened, sodium salts can be at least replaced in part or totally by potassium or ammonium salts. There is minimal research in this area, but there is one review which clearly shows that salt is present in a lot of recipes for flavour/historic reasons and *<u>not</u>* for product shelf life or microbiological safety. Water Activity (Aw) and safety of pastries and pies is determined by the sugars and soluble carbohydrates, not the sodium. Sodium has no role in formation of pastry texture or structure after baking. Some ingredients such as chocolate may provide some sodium, but the targets are conservative to allow for this to be accounted for.

Salt Reduction Technologies:
In his report, Schroeder concludes that "alternative technologies are available and a reduction is sodium could be achieved by looking beyond sodium bicarbonate". For buns and cakes the issue of reducing sodium levels is with the use of raising agents containing sodium and yeast. Brewing yeasts which are similar to baking yeasts can be used, as with bread. Alternatively altering processing conditions can help. Ammonium or potassium based raising salts have been used successfully in some products and Eminate's low sodium raising agent and Kudos Blends potassium raising agent may be examples of suitable raising agents which could be used to reduce the sodium in this category (see pg.6).

Current Industry Levels (see table 5):
As with morning goods, it is difficult to isolate products that are meeting the targets to act as a benchmark as there is such a wide range of products included in this category, particularly for cakes.

In the cake category there are a number of examples of products containing less salt than the target across a range of cake types, including sponge cake, cake bars and flapjacks. In the fruit pie category products were found containing 'trace' levels of salt demonstrating that there is no requirement for salt in these products.

In their RD update Premier foods cites problems with cakes due to no suitable alternative raising agent being available, however with the introduction of alternatives such as potassium raising agents CASH does not accept this reasoning.

Conclusion:
A number of products were found which exceed the targets in these categories. Importantly however there are also a number of clear examples of products that not only meeting the 2012 targets, but contain much less salt. The fact that some products in the fruit pies category contain trace levels of salt demonstrated that the salt is unnecessary in much of this product range. CASH would be keen to see justification for why some products still contain such high levels, particularly for doughnuts, American muffins and profiteroles.

Table 5: Cakes, pastries and fruit pies		
Product	**2012 target**	**Low salt examples (April 2012)**
12.1 Cakes Includes all sponge cakes, cake bars, malt loaf, American muffins, doughnuts, flapjacks, brownies etc. Also includes iced finger buns.	0.5g salt (av r) 1.0g salt (max)	**Victoria Sponge:** Asda Chosen By You Victoria Sandwich Cake - **0.3g/100g** **Chocolate Cake:** Sainsbury's large Seriously Chocolate Cake - **0.25g/100g** **Carrot Cake:** Tesco Finest Carrot Cake - **0.5g/100g** **Doughnuts:** Tesco Glazed Ring Doughnut – **0.3g/100g** (range: 0.3-1g/100g) **Traybakes:** Tesco Chocolate Drizzle Flapjack – **0.2g/100g** (range: 0.2 - 0.5g/100g) **American Muffins:** Tesco Mini Muffins – **0.4g/100g** (range: 0.4-1g/100g) **Malt Loaf:** Tesco Value Malt Loaf - **0.4g/100g** (range: 0.4g - 0.83g/100g) **Cake bars:** McVities Jaffa Cake bars –**0.2/100g** (range: 0.2-0.8g/100g)
12.2 Pastries Includes all puff pastry based and laminated pastries, such as Danish pastries, maple and pecan plait etc.	0.5g salt (av r)	**Danish Pastry:** EAT Maple pecan plait – **0.5g/100g** (range: 0.5-0.9g/100g)
12.3 Fruit pies and other shortcrust and choux pastry-based desserts Includes all fruit pies and other desserts made with shortcrust and choux pastry e.g. apple pie, tarte au citron, tarte au chocolate, profiteroles, choux buns etc.	0.33g salt (max)	**Fruit Pies:** Tesco Value Apple Pies – **tr/100g** (tr-0.3g/100g **Chocolate/lemon Tart:** Tesco Milk Chocolate Tart- **tr/100g** (range: tr-0.7g/100g) **Profiteroles:** Tesco Profiteroles - **0.2g/100g** (range: 0.2-1.65g/100g)

6. Canned Fish

This section refers to salt target category 23: <u>Canned fish</u>

Salt Function:
The primary source of salt in canned fish products is from the addition of flavouring tablets; these contain salt and are used to ensure that standardised weights of ingredients/flavours are used in a strict 'unit at a time' operation. It is these tablets therefore where the salt reductions need to be made. Canning is a sterile process and salt has no function in canned fish; In 2008 FSA meetings taste issues alone were cited as reasoning for added salt in salmon.

Salt Reduction Technologies:
There are very limited suppliers of these tablets, so a reduction in the salt content needs the consensus of the entire food industry and needs the industry to apply sufficient pressure on the tablet manufacturers to make this change. Given that there are only a handful of companies, theoretically the process will be easy if the pressure is applied. The importance of a collective request from the UK food industry was raised at the 2008 FSA meeting.

Current Industry Levels (see table 6):

Conclusions:
The targets are clearly possible to meet for this category, based on the low examples found. The no salt salmon product demonstrates that the salt is not necessary and is included for historical rather than technical issues.

Table 6: Canned Fish		
Product	**2012 target**	**Low salt examples (April 2012)**
23.1 Canned tuna Includes all tuna canned in oil, brine, spring water etc. Excludes fish with sauce products (see category 23.3).	1.0g salt (av p)	Sainsbury's/ Princes Tuna in water - **0.75g/100g** (1g in brine/oil)
23.2 Canned salmon Includes all standard canned salmon. Excludes fish with sauce products (excludes category 23.3).	0.93g salt (av p)	Sainsbury's No Added Salt Wild Pacific Red Salmon - **0.12g/100g** (normal Salmon 1g/100g)
23.3 Other canned fish Includes sardines, mackerel, pilchards in brine, oil etc and canned fish with sauces e.g. tomato, barbeque, mustard etc. Also includes canned shellfish e.g. prawns, crab, mussels etc. Excludes anchovies, smoked fish, lumpfish caviar and fish roe.	0.93g salt (av r)	**Sardines:** Sainsbury's Sardines in Water -**0.18g/100g** **Mackerel:** Princes Mackerel in Olive Oil - **0.75g/100g** **Canned fish in sauce:** wide range depending on sauce type (range: 0.4-1.7g/100g)

7. Sauces

This section refers to salt target categories 15.2 – 15.3: <u>Pesto and other thick sauces</u>

Salt Function:
The concentration of traditional ingredients such as parmesan in pesto or soy sauce in stir fry sauces contributes to the high salt content of these products. The fact that variations of sauces have been made that are lower in salt demonstrates that there is no technical function of salt. Due to the high salt ingredients used in many of these sauces, the addition of extra salt as a flavouring is unnecessary.

Salt Reduction Technologies:
As the ingredients will be a major source of salt in these products, lower salt ingredients need to be sourced, and this has been shown to be possible.

Current Industry Levels (see table 7):

Pesto: A CASH survey in 2011 showed a wide range of salt levels in pesto from 0.3g – 3g with 75% meeting the 2.0g/100g target.

Stir fry: A wide range of salt levels were found in stir fry sauces, ranging from as little as 'trace' to as much as 2.8g/100g, saltier that seawater! Hampstead farms has produced a range of 'no added salt' sauces which are currently stocked at Ocado.

Conclusion:
There are clear examples of products meeting, and going further than the targets in this category, thus demonstrating that further reductions in this category are possible. CASH sees no reason why one stir fry sauce can be produced with trace levels of salt, while another has a greater concentration of sodium compared to seawater.

Table 7: Pesto & other thick sauces		
Product	**2012 target**	**Low salt examples (April 2012)**
15.2 Pesto and other thick sauces Includes thick cooking sauces intended to be used in smaller quantities, e.g. pesto, stir fry sauces, etc. (e.g. a portion size of under 90g)	1.5g salt (av r) 2.0g salt (max)	**Pesto:** Tesco Finest Pesto Rosso - **0.5g/100g** **Stir In:** Dolmio Cherry Tomato & pesto Stir in sauce - **1.05g/100g** (range: 1.05-1.48g) **Stir Fry:** Sainsbury's Sweet Chilli Stir Fry sauce - **tr/100g** Hampstead Farms Ginger & Lime Stir Fry Sauce – **tr/100g** (range: tr-2.8g/100g)

8. Processed Puddings

This section refers to salt target category 20.4: <u>All other puddings</u>

Salt Function:
In 2008 FSA meetings issues regarding salt reduction and the resulting reduced shelf life of the puddings were raised, for instance in Christmas puddings which are required to have a long shelf life. CASH questioned the importance of this. The industry did raise some concerns about the lower average target with this category due to the accumulation of ingredients containing naturally occurring sodium e.g. cream, fat spreads, chocolate.

Salt Reduction Technologies
Where sodium based raising agents are the primary source of sodium, alternatives such as Ammonium and potassium based raising agents can be used (see pg. 6)

Current Industry Levels (see table 8):
Note – due to seasonal constraints CASH was unable to check levels in Christmas puddings.

Conclusion:

There are many examples of low/trace levels of salt were found across this product range. CASH would like to see further justification for cited problems in this area.

Table 8: All other puddings		
Product	**2012 target**	**Low salt examples (April 2012)**
20.4 All other processed puddings, Includes all other processed and pre-prepared puddings e.g. bread and butter pudding, brownie desserts, crumbles, trifle etc. Excludes fruit pies and all other desserts made with shortcrust and choux pastry (see category 12.4). (NOTE – not cheesecake, sponge based puddings, or dessert mixes)	0.18g salt (av r) 0.3g salt (max)	**Trifle:** Tesco Strawberry Trifle - **tr/100g** (range: tr-0.3g/100g) **Bread & Butter Pudding:** Tesco Bread & Butter Pudding - **0.2g/100g** (range: 0.2-0.3g/100g) **Crumble:** Tesco Bramley Apple Crumble - **tr/100g** (range: tr-0.4g/100g)

Conclusion:

The majority of the 2012 salt targets, as part of the Responsibility Deal salt pledge, have already been met by the food industry. There are only a few products across 8 categories where the food industry has deemed the 2012 targets 'difficult' to achieve.

However, there are now a wide range of technologies available and in current use which enables the food industry to meet all of the salt targets for 2012. As we have shown in this report it is possible, even in these 'difficult' categories, to reduce the salt levels to meet the 2012 targets. We found many examples across the 8 categories where products not only meet the target but contain salt levels much lower than the target. The findings clearly demonstrate the 2012 targets are achievable and questions why, if one company is able to meet them, why can't the rest.

It is vital for the food industry to continue to gradually reduce the amount of salt that they are adding to food as this is the most cost effective public health policy. At the same time it is essential that further targets are set by the Department of Health in order to ensure a 'level playing field' for the food industry.

The UK currently leads the world in salt reduction and we wish to congratulate all of those companies that have played such an important role in making this possible. We must ensure that the UK continues to lead the world in showing that large reductions in salt are possible, if we are to save the maximum number of lives.

The salt reduction programme will continue to save many people dying or suffering unnecessarily from stroke, heart attacks and heart failure.

**Throughout this report we refer to 'Water Activity, or Aw'. This is a measure of how efficiently water can take part in chemical reactions. Typically Aw will be low in dry products eg. Crackers and high in wet products eg. Cheese and milk. It is the water activity rather than the water content that is correlated to bacterial growth (ie. a high Aw product will have greater bacteria growth).*