

Janice and Lynne believe that with plant-based eating there is an improved likelihood of achieving nutritional targets and this does not require people to give up meat completely, but to put plant foods first. A conservative approach would be to reshape the Eatwell plate so that plant-based foods make up two-thirds of the plate and animal foods make up one-third. A more ambitious approach would be to aim for an 80:20 split. A plant-based diet is achievable and 20-25% more affordable.

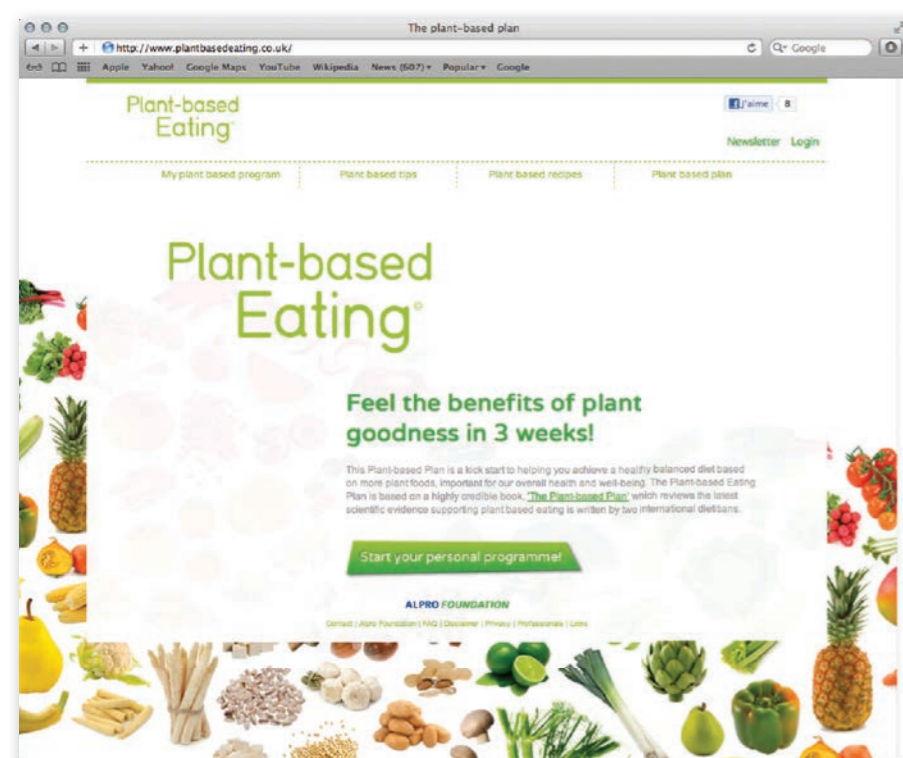
## Summary and concluding remarks by Louise

The synergies between the WWF Livewell report and Dr Janice Harland's and Lynne Garton's Plant-based eating plan convey the message that we need to shift our dietary intake towards a much higher proportion of plant-based foods to meat

and dairy foods in order to promote health and reduce GHG emissions. We have the scientific evidence to show that plant-based models of eating can meet our nutritional requirements. Government and policy makers need to address this important issue. Health professionals including dietitians should play an important role in communicating its meaning as well as offering practical advice on healthy and sustainable diets.

### References

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## Comments and Commentary from the Parliamentary Food & Health Forum Meeting 18<sup>th</sup> October 2011: Plant-Based Eating and a Sustainable Food Policy, House of Commons, London.

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### Introduction

The aim of this meeting was to explore what a sustainable food policy for the UK would look like and whether we are on track to deliver it. Its aim was also to establish whether plant-based eating could meet all our nutritional requirements and, if so, whether Government advice on healthy eating needed to change. Baroness Miller of Chilthorne Damer welcomed members to the meeting and introduced the guest speakers: Mark Driscoll, Head of the One Planet Food Programme at WWF-UK; and Dr Janice Harland, a qualified nutritionist, author and consultant, as guest speakers.

### Presentation on the One Planet Food Programme

Mark Driscoll, presented the WWF's One Planet Food Programme. This was launched two years ago with the aim to reduce the negative environmental and social impacts of UK food production and consumption and move towards a more sustainable, equitable and fair food system. WWF believes plant-based eating has social, environmental and health benefits and governments should focus on this win-win agenda: linking sustainability criteria with healthy eating advice. He stressed WWF does not advocate a vegetarian diet, but we should eat more plants for our own health and plant producers need to be paid a fair price for food to reflect environmental improvements.

The food system has a substantial impact on climate change. It is a driving force behind habitat and biodiversity loss and a huge drain on water resources, both due to the direct production of food and the growing of crops to feed animals.

Mark Driscoll claimed that if everyone in the world consumed natural resources and generated greenhouse gases at the same rate as people in the UK, we would need almost 3 planets to support us. Food accounts for 23% humanity's ecological footprint and a similar proportion of our contribution to climate change.

### FOR MORE INFORMATION

*The Alpro Foundation is an independent non-profit organisation, supporting and promoting scientific research in the field of health and nutrition.*

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The goal of the One Planet Food Programme is to reduce greenhouse gas (GHG) emissions from our food supply by at least 70% by 2050, in line with the Climate Change Act. WWF commissioned the Rowett Institute to research the GHG intensity of the UK's current eating habits and compare it to the GHG intensity of the Eatwell plate. The results were used to formulate the Livewell report which includes their Livewell plate. This was published earlier this year.

The methodology used in the report, put practical limits on food choices to develop a realistic "acceptability" outcome. For example, it ensured that the Livewell diet includes enough milk to have on breakfast cereals. The Livewell Report includes a sample 7 day menu and shopping list to demonstrate that it could be a recognisable and acceptable diet and does not exclude meat.

**The Livewell conclusions are that the current UK diet is neither healthy nor sustainable.** Eating a healthy diet is affordable and compatible with reducing GHG emissions, but it requires eating a different balance of food to the current UK diet. The key finding was that meat and dairy consumption was associated with higher GHG emissions compared with other food groups. Further, there was a need to reduce these foods in view of the UK's intake exceeding its protein requirements thus leading to an impact on both climate and health.

Although there is yet to be a universally accepted definition of a sustainable diet, the WWF's Livewell plate starts to define it by integrating the nutritional and GHG information of the different food groups. The Livewell plate, like the Eatwell plate, emphasises the need for us to eat a greater proportion of plant-based foods to animal foods. Furthermore, an important point for dietitians and healthcare professionals to note is that the Livewell plate distinguishes between plant-based and animal protein foods, given the emerging information on the environmental effects of producing the different types of protein. It was demonstrated to be affordable.

WWF hopes the Livewell Report will be a starting point for understanding ways of achieving healthy, sustainable diets. WWF is now calling on the Government to support the development of "sustainable diets" by defining key principles and linking sustainability criteria into healthy eating advice, whilst highlighting them as a national policy objective.

## The Plant-based Eating Plan

Dr Janice Harland explained she had been asked to speak about whether plant-based eating could meet all our nutritional needs and, if so, whether Government advice on healthy eating should encourage more plant-based eating. Her comments would be based on a few chapters in a new book, The Plant-based Plan - Reference guide for plant-based nutrition and she thanked her co-author, Lynne Garton, for all her help with the research for this book and the Alpro Foundation for funding it.

To review the evidence on plant-based eating, Lynne and Janice conducted a Medline search looking for all references to "plant-based". They found this to be a relatively modern term, so supplemented the search with other related terms, such as vegetarian and "Mediterranean Diet". They drew on systematic reviews and observational data and found a total of over 900 references. They sought to extract all the information from the appropriate references and to summarise it in the book.

A plant-based diet is based on fruit and vegetables; nuts and seeds; pulses including soya and wholegrains; but the plant-based eating is not suggesting that people should exclude meat completely, just that it should be a smaller part of our diets. There is a spectrum of plant-based eating from vegans to plant-based meat eaters and people do not share the same criteria for common descriptions so, for example, some vegans eat dairy products and some pescetarians eat small amounts of meat.

The current UK diet fails to meet the targets for saturated fat, fibre, fruit and vegetables set in national guidelines. The UK does not have a target for wholegrains, but the USA does and we are eating less than a third of the amount of wholegrains recommended in the USA.

The Oxford arm of the EPIC study is very useful because it compares meat eaters with vegans, vegetarians and fish eaters. It shows that anyone not eating meat tends to eat fewer calories, less fat and less saturated fat, but more polyunsaturated fatty acids (PUFAs) and more fibre - non-starch polysaccharides (PSG) - than meat eaters.

Some research by the MRC Human Nutrition Research Unit shows that wholegrain consumers, representative of higher fibre consumers, eat more fruit and vegetables and less saturated fat. It also shows that there are fewer people in this group failing to meet national targets for certain important micronutrients, including iron, calcium, zinc, riboflavin and vitamin A.

If we look at a plant-based diet against key nutritional and dietary recommendations we can see that it does meet all the UK recommendations for intake of fat, saturated fat, fibre, fruit and vegetables as well as the USA recommendation for wholegrains.

If we look at where saturated fat in our diet comes from, we can see that over 46 % sat fat in our diet comes from meat and dairy produce.

The three major health issues facing the UK and European populations are cardiovascular disease (CVD), obesity and diabetes.



A plant-based diet is associated with a reduction in overall cholesterol level of 8-10% and a reduction in LDL cholesterol level of 9-15%. For example, a long-term portfolio-diet study conducted by Professor Jenkins shows a diet rich in soya protein, viscous fibres, tree nuts and plant sterols is associated with a 13% reduction in LDL cholesterol levels. Typically the observational studies show a reduction of about 20% in CHD if they involve people who are vegans, vegetarians or eating a Mediterranean diet. It is a trend in the right direction and the overall evidence from clinical studies, portfolio diet studies and observational studies supports the conclusion that plant-based eating tends to promote heart health.

With respect to overweight and obesity, a recent large meta-analysis shows that adults and children have a lower body weight if they are on a vegetarian diet. It also indicates that vegetarians tend to put on less weight over time. More epidemiological evidence from four studies shows that vegetarians gain less weight over time. A WHO report has identified the key causes of obesity as reduced physical activity and increased consumption of energy-dense foods high in saturated fats and sugars. It found that plant-based eating is associated with lower body weight and less weight gain over time; and that plant-based foods and eating patterns are typically low in saturated fat and high in unsaturated fats and fibre, which is important for control of body weight. It suggests that specific components found intrinsically in plant foods may work together to help with appetite regulation and promoting satiety, but more research is needed before definitive conclusions can be drawn about this. WHO guidelines recommend increasing fruit and vegetable consumption and focusing on whole grain foods to manage weight. Diabetes is linked to obesity and heart disease and often associated with them. Most of the evidence Janice and Lynne found in this area was based on observational data. A systematic

review of 12 cohort studies found that the risk of developing diabetes was 17% higher when comparing high and low meat intake. For each 120g increase in red meat intake the risk of developing diabetes was 20% higher

Some people are concerned that a plant-based diet will not provide enough calcium to sustain healthy bones. There are two meta-analyses that considered the evidence in this area. The most recent cites evidence from 9 observational studies. It found that overall bone density at lumbar spine was 2% lower in lacto-ovo vegetarians than omnivores; 4% lower in vegetarians and 6% lower in vegans; although the bone marrow density at femoral neck was similar in vegetarians and omnivores. The authors concluded that these differences were not clinically significant and Dr Lanham-New, who reviewed this analysis, confirmed that vegetarianism is not a serious risk factor for osteoporotic fracture. Dr Lanham-New also pointed out that the analysis made no adjustment for body weight which was a significant design weakness.

There is evidence to show that plant-based eating supports bone growth throughout life provided a wide variety of plant foods is eaten. Some plant-based foods, such as soya, may contain phyto-chemicals that can support bone density, but more research in this area is needed. Meanwhile it may be sensible, where possible, to choose plant foods fortified with calcium.

**Various international bodies, including the WHO, WRCF and the American Dietetic Association have recommended plant-based eating.** One report concluded that "the totality of evidence documenting a beneficial impact of plant-based dietary patterns on CVD risk is remarkable and worthy of recommendation."

