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# Ethics of Food Security in a Changing Society – Learning from the Past to Shape the Future



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## A Cumberland Colloquium Summary Report

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### **Dr Muzna Rahman**

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### **Dr Michelle Springfield**

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### **Matthew Wright**

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## INTRODUCTION

Food security is a significant concern in today's world and this conference viewed the issue from several angles. Food security in European countries and their former colonies was explored from the colonial period until the present day and beyond; with particular focus on how formerly being a colonised or a colonising country has impacted upon food security. The consequences of the resultant agricultural systems in the colonies affect daily life, the spread of wealth and food security up to this day. The engineering, along with the socioeconomic, aspect of this conference discussed how technological advances, particularly in the fields of food preservation and decentralised energy supply, can play a vital role in securing the livelihoods of people, especially in disadvantaged regions.

The explicit aim of this conference was to develop new concepts based on past experience with the existing systems which are not constrained by the lack of communication between disciplines and not dominated by advocates of the current systems and approaches. This inter-disciplinary conference allowed us to use the expertise of the different disciplines involved to help develop new and more ethical approaches to global food security, as well as help participants to network with people from different fields whom they otherwise would not meet at this point in their careers.

The day began with a short introduction to the Cumberland Lodge by Canon Dr. Edmund Newell and a brief welcome from the Principal Organiser of the conference, Helen McKee. McKee took this opportunity to thank all participants, Cumberland Lodge and the funding bodies who supported the event. Those organisations were the Economic and Social Research Council (ESRC), the Institute of Food Science and Technology (IFST), the University of Lillehammer, the Douglas Bomfort Trust (DBT) and the Royal Economic Society (RES).

## FOOD SECURITY IN HISTORY

- Dr Rachel Herrmann

First to present at our conference was Dr. Rachel Herrmann from Southampton University who was speaking on black Loyalist food laws in Eighteenth-Century Sierra Leone. In October 1793, black Loyalists Cato Perkins and Isaac Anderson went to London to petition on behalf of the other unhappy black colonists living in Freetown, Sierra Leone. They were hungry. The colony in Sierra Leone was faltering, and although they hoped for “Land and [to] be able to make a Crop to support us” before the advent of “the rainy Season,” the company had not yet allotted land, and “Health and Life” remained “very uncertain.” Herrmann stated that prior analyses of the black Loyalists’ lives have focused on land allotment failures, yet problems with provisioning and experiences with restrictive food laws significantly reshaped their existence when they migrated to Sierra Leone. In Sierra Leone black Loyalists enacted food laws to attempt the regulation of indigenous Africans’ trade. Once the black Loyalists began using food laws to differentiate themselves from neighbouring populations, tensions rose.

Herrman highlighted how late-eighteenth-century Freetown suffered from staggering food insecurity and that the black Loyalists’ efforts to legislate against scarcity led to the 1800 uprising—which was actually an early modern food riot. This case study challenges the work that food studies scholars have done on power and place while arguing for a closer look at the early modern period. The black Loyalists did not have to contend with a modern, national food policy created in England. Rather, a small, previously enslaved portion of the population wrote a food system at the edge of empire that revised the ineffective food system put in place by white officials. Their 1800 food riot stands at a crossroads between early modern food history and the rise of state-controlled food politics in the twentieth century.

In conclusion, Herrmann suggested that food insecurity should prompt us to think about how food insecurity encourages the formations of coercive systems of food control and how those systems are products of brief periods of accommodation, longer histories of war, and more insidious forms of violence.

- Matthew Wright

Following Rachel Herrmann’s contribution to the food security debate from a historian’s perspective, we had another historian, Matthew Wright from Durham University, speak about the World Bank, population control and food security between 1968 and 1973.

By way of an introduction, Wright told us that, in 1968, Robert McNamara joined the World Bank as its new President. In the same year he published 'The Essence of Security', in which he spelled out the challenges facing the USA and her allies, including growing food shortages and the resultant instability in developing countries. Using this as a starting point, Wright explored how discussions about food security in a newly post-colonial world played into broader strategies by the World Bank to control and enhance social and economic conditions in developing countries. One example given was that, whilst the Bank sought to increase the supply of food, it also increased lending to reduce the populations of these countries through birth control schemes which were often brutal in their application. Wright also highlighted how discussions about food security have historically taken place in a wider context, and correspondingly a range of policies going well beyond food production and consumption have been legitimated by fears about food shortage. Wright concluded by discussing what lessons these approaches hold for modern day food security strategies.

- Dr Muzna Rahman

Concluding the session was a presentation from Dr. Muzna Rahman, a lecturer in English at the University of Lincoln. In this presentation, Dr. Rahman discussed the role of literature in food security debates, with a particular focus on Tsitsi Dangarembga's novel *Nervous Conditions*. Rahman argued that the role of literature is an often overlooked area in interrogations and discussions of food security whilst disciplines like health, agriculture and the life sciences take the centre stage. However, with the growing perception that there is a need for a broader understanding of hunger, the field of food studies has emerged as a response to the demand for a more holistic and humanistic apprehension of food related matters. Dr. Rahman interrogated how wider contemporary understandings of food insecurity are still mired by misrecognition of colonial, historical narratives despite the large strides made in academic circles. Rahman used *Nervous Conditions* to demonstrate how this misrecognition manifests and what the larger socio-cultural implications are for the people who are affected by it. The novel is based in colonial Rhodesia and is centred on a 13-year-old girl, Nyasha Siguake, and her extended family. The novel explores issues of manifest food insecurity in colonial Rhodesia during the 1960s, but also delves into resulting socio-cultural impacts that continue to affect global perceptions of African food insecurity today. Using this novel, Rahman demonstrated how literature can illuminate current elisions in global understandings of food insecurity, and reach a broader audience in a deeply effective way. Rahman concluded by revealing how food insecurity – particularly instances that have a colonial causative root – can manifest in subtle cultural misapprehensions in affected areas decades later in fields such as gender and racial discrimination that may remain largely unexplored by traditional food security disciplines.

## PRACTICAL ISSUES

- Francis Mwambo

Francis Mwambo from the University of Bonn opened the session with a discussion of his research, which assesses the ecological-societal impacts of West African farming practices with a particular focus on energy efficiency. Mwambo began by giving a brief introduction to agriculture in West Africa, which is dominated by small-scale farming and where labour is mainly manual or animal powered. Mwambo argued that the concept of shifting cultivation in combination with slash and burn practices is resulting in the fallow period becoming progressively shorter. Together with a greatly increasing demand for food from the fast growing population, the practiced low-input farming leads to fast dynamics of land use change with considerable impacts on biodiversity, but also on future food and water security.

Mwambo's discussed his work in relation to a larger project named BiomassWeb which is funded by the German Federal Ministry of Education and Research. This project developed the concepts for better efficiency in the use of locally produced bio-resources by means of value clusters. The research presented here assessed a small part of this: the impact of different agricultural production and connected resource processing schemes using energy efficiency as a proxy and relates this to the provision of public goods and ecosystem services. The overall aim of the BiomassWeb project is to conceive a comprehensive and scale sensitive assessment framework that supports consulting land use, but also decisions as to what extent and at which scale (local / regional) processing of bio-resources should be combined with the primary production. Mwambo's presentation represented a first approach on how to structure the assessment framework and how to consider scale effects.

- Marina Maier

Marina Maier of the University of Exeter widened the conversation to include enhanced structural path analysis as a potential solution for dynamical life cycle inventory studies in the agricultural sector. Maier introduced a new dynamical Life Cycle Inventory (LCI) methodology including process-relative temporal distribution. Recent research shows that ignoring temporal changes, which are inherent in most production, distribution and consumption processes, influences the results of Life Cycle Assessments (LCA) and is therefore a significant limitation in LCA. The method used in Maier's study is called the Enhanced Structural Path Analysis (ESPA). It uses technical and environmental flows and captures temporal information within the LCI to obtain a dynamical, and hence improved, representation of the assessment. Applying this method offers new opportunities to identify high potentials for reducing environmental impacts in a wide range of processes, applications and industries. To show the benefits this method, and of dynamical LCA approaches in general, an introductory case study of the cultivation of wheat was conducted by Maier. Due to the worldwide importance of wheat growing and usage, the case identified production steps and production times with high emissions, which can be used to improve the sustainability of wheat production.

Maier stated that this study only shows a basic introduction into dynamical life cycle assessment using the Enhanced Structural Path Analysis. Nevertheless, it already indicates the great benefit of this method. The emission for each time step of a process can be identified rather than just the emissions released in each production step. Furthermore, the method can be used to determine products for future environmental improvements. Especially in the food and agricultural sector, where the conflict between the amount of food that has to be produced and the reduction of environmental impacts becomes more important, the method can achieve more representative results.

- Amanda Musandiwa

The Australian National University's Amanda Musandiwa concluded the session with her work on the behavioural economics of meat consumption and its effects on food security in Norway and South Africa. This used a hybrid analysis of meat choice and behavioural change. Musandiwa explained that Norway and South Africa currently produce and consume large quantities of meat. In both countries, meat is not only hinged upon traditional meals, but it is also considered a staple for everyday consumption. Livestock production systems negatively impact food security, diverting crops away from human consumption, raising food prices whilst also contributing to climate change, water scarcity and land degradation. Given these challenges, meat consumption is still increasing in both countries. Musandiwa sought to illustrate how meat production negatively affects food security and proposed a novel, hybrid model of behavioural economics that addresses both the psychological and economic factors influencing meat consumption. Through the investigation of the psychological and economic processes of meat consumption, Musandiwa argued that interventions (educational programmes and pricing policies) can be implemented and aimed at reducing meat demands.

## DEBATES AROUND FOOD SECURITY

- Christopher Coghlan

Christopher Coghlan from the University of Oxford began the session with a discussion of the need to assess how studies collect their data in order to highlight the differences in methodologies. Coghlan argued that food security studies have been defined by contrasting methodologies which occur at different scales, some studies using national level and some using household. Two major studies were analysed in the presentation: the International Food Policy Research Institute's Global Hunger Index and the Government of India's National Nutritional Monitoring Bureau survey work. Coghlan then used data from the Food and Agricultural Organization of the United Nations and Indiastat to illustrate how the inclusion of food groups at each scale fills a research gap in understanding nutritional outcomes. His findings show variation in data availability across scales; establishing that trade balances at the national level and dietary recall at the household level illuminates links between food production, trade, consumption and nutrition. Overall, Coghlan demonstrated how food groups exist as a thematic unit which manifest themselves differently via complimentary data at various scales. Coghlan argued a more holistic understanding of the food system is advantageous as it increases the opportunity to effectively approach structural and distributional inequalities.

- Michael Bourne

Next to continue the discussion was Michael Bourne of Oxford Brookes University with his research on International agricultural investment and the G8's New Alliance for Food Security and Nutrition. Bourne's presentation explored the recent growth in international investment in agriculture in the light of the Hobbesian notion of 'sovereignty', and Hayekian idea of 'cosmos'. These two seemingly opposing ideas – the former that of authority being ceded to an external agent for the good of society, the latter that of an endogenously emerging natural order – were used as 'frames' to address trends towards (dis)empowerment in global food production, and specifically international agricultural investment. As a case study two separate sets of principles for responsible agricultural investment – the 'PRAI' developed by a number of global institutions led by the UN's Food and Agriculture Organisation (FAO), and the 'rai' being developed by the (UN's) Committee on World Food Security (WFS) (currently at the 'First Draft' stage of a lengthy consultation process) – were compared for the emphasis they place on external intervention (such as from governments, NGOs or foreign investors) and empowerment of residents in the recipient areas (local knowledge, differing cultural norms etc.). Bourne concluded that it is to be expected that Hobbes' and Hayek's intended definitions of, respectively, the Monarch/State as sovereign, and the market as cosmos will be found to be too simplistic, but that these ideas of defunct philosophers still have interesting things to say in discussions around global agricultural investment.

## - Michelle Springfield

To conclude this panel, Michelle Springfield of Royal Holloway presented her research on the prospects for food sovereignty in contemporary East Africa. Springfield argued for a more complex approach to the question of food sovereignty and suggested a model that recognized political, social and economic inequalities as determinants of access to food. In particular, she focused on the enduring problem of food insecurity in Ethiopia and Kenya. Springfield proposed that food insecurity needs to be understood both in acute terms, the occurrence of famine, and chronic terms, famine vulnerability, often referred to as food insecurity. Locating the occurrence of famine, and countries vulnerability to it, in the context of the global food system (GFS) is key to a greater understanding. Springfield stated that the GFS has been overlooked as a causal factor in the past and believes it is likely to become a greater factor in the future. Further, she advocated that the global food system is, as yet, an under examined factor in contemporary food security analysis. Springfield stated that her presentation aimed to make a substantive contribution to understanding the concept of food sovereignty, arguing that food sovereignty deserves to be a more significant part of contemporary narratives that presently dominate the political and social dilemmas about food insecurity.

Springfield highlighted how it is accepted that there are serious obstacles such as political relationships, land tenure and the industrial system of agriculture that hinder the development of food sovereignty as a viable option. Natural disasters, demographic pressures and ill conceived economic policies are an ongoing part of the story but in essence, argued Springfield, food insecurity is ultimately political. The conclusion was that food sovereignty should be explored as a political solution to a political problem.

## POSTER PRESENTATIONS

- Joanne Bridger

Joanne Bridger, representing the University of Leeds, produced a poster which showed her research on food security in the West Bank and 'neo-colonial' marketization. This highlighted the connections between the Israeli occupation, American and British neo-colonialism, and agriculture in the West Bank. Her poster demonstrated how agriculture and food production played a large role in the formation of Israel, and the colonization of Palestinian land. Rather than add to the existing literature, the fieldwork undertaken sought to identify Palestinian responses to food insecurity. Bridger provided descriptions of Palestinian food sovereignty, through permaculture and 'slow food' movements. However, she also outlined different forms of former, existing and neo-colonial connections to food security within West Bank agriculture. Three forms were identified, and interconnected; aid from USAID and DIFID, agricultural certification schemes such as Fairtrade and GlobalGAP, and the export trade of agricultural produce. Bridger concluded that Palestinian food security in the West Bank is not affected solely by the Israeli occupation, but by the relationship both Israel and Palestine has with donors, corporations and consumers.

- Saad Albalawi

Saad Albalawi from Griffith University in Australia displayed his poster on food security in Saudi Arabia during the era of uncertainty. The poster gave a brief introduction to the issue and stated that geographic and weather conditions largely prevent the Arabian Peninsula, predominantly Saudi Arabia, from growing sufficient food to feed its people. Agriculture is an important economic sector of Saudi Arabia, although with a hostile environment and increasingly uncertain climate induced by global warming, the sector has been facing challenges on several fronts including agricultural practices. The ability to provide the food security of the Saudi population through domestic sources is becoming increasingly difficult. Thus, the nation has been paying greater attention to investing in agriculture and livestock sectors. As a result, agriculture's contribution to GDP in 2007 was approximately Riyal 40 billion, making its share to the non-oil sector 7%. In 2005, employment in agriculture constituted more than 7 per cent of the total labour force. The poster addressed the import demand model of red meat consumption in Saudi Arabia with a view to propose a policy plan in the medium to long term.

## - Helen McKee

Helen McKee of Newcastle University presented a poster on how historical investigation can help in research on the problematic of food security in Jamaica. McKee explained that, during the early plantation era, enslaved populations were reliant on their owners to provide sustenance. The preferred policy at this time was to “buy rather than breed” slaves so enslaved populations were extremely food insecure. In times of upheaval, for example in the Revolutionary period, naval blockades meant that colonists could not buy food from elsewhere to give to their slaves, so they encouraged slaves to grow their own food in ‘kitchen gardens.’ These kitchen gardens increased the food security of enslaved populations.

Upon emancipation, former slaves moved away from the plantations and resided upon small-scale landholdings. Many planters refused to break up their plantations to sell in smaller lots, even when in debt, so these former slaves often lived illegally on the lands. The crops they grew supported the populations but the land was not theirs. This was exacerbated in the later decades of the nineteenth century when banana cultivation took off and Jamaica land was, once again, concentrated in the hands of large-scale plantation owners.

McKee proposed that historical evaluation of the development of attitudes towards land ownership can help unravel the complex legal situation facing Jamaican farmers today. The chaos of post-emancipation Jamaica means that the former slaves may have been given permission to live on the lands but not necessarily to own the lands. Alternatively, they may have been given ownership of the lands by someone who did not have the authority to make such a decision. They may also have been granted ownership by the plantation owner and subsequent claims by others may be based on false authority. Historical inquiry will help us understand the situation.

Across the globe, more than a quarter of people do not have free access to land and are, therefore, unable to grow crops sustainably to support themselves and provide them with a livelihood. Scholars examining food security in Jamaica have not yet fully explored the complex, and changing, world of legal land ownership in Jamaica. McKee suggests it is necessary to examine land laws implemented by the colonial government, Afro-Caribbean responses to these European-implemented laws and, finally, laws implemented for the support of the landless and the food insecure from the time of emancipation in 1834 until independence in 1964 to understand the current food insecurity, related to a lack of legal land ownership, within Jamaica.

## - Angel Nguyen

Angela Nguyen from the Australian National University also presented her research on beef consumption by way of a poster. The poster showed how beef consumption is considered a culinary social norm in many western countries. However, growing research indicates that beef consumption is a contributing factor to higher rates of obesity and heart disease. Additionally, the beef industry has shown to be one of the highest producers of carbon emissions, causing significant damage to our environment. Reducing beef consumption is thus both a health and environmental initiative. However, encouraging people to reduce beef consumption is not a light issue as the motivation, values and beliefs of beef consumption vary from individual to individual.

Nguyen argued that understanding how people identify with a social issue is imperative to establishing the foundations for social change. The poster explored the social identities of beef consumption and the psychological processes associated with these identities. In particular, it drew upon the results from a recent Norwegian study assessing the effectiveness of an intervention website aimed at reducing beef consumption. Social identities were extracted from the various themes and issues that were used by the website to engage with participants (e.g., health and environmental themes / identities). Levels of identification with these social issues were measured among the participants to assess the potential influence of these social identities over the participants' level of beef consumption. The research presented also analysed how different social identities can influence different levels of beef reduction among individuals. In particular, implications for social influence strategies through 'identity-structured' media and communication were discussed.

## - Dr Barbara Sturm

Dr Sturm presented a poster on Cost of Tea Production and its impact on rural livelihoods in Sri Lanka. Sri Lanka is one of the biggest tea producers worldwide and tea production contributes 12% of the annual export earnings. Small holder farms support more than 2 million people, whilst regional production companies and government owned plantations directly employ over 550,000 people.

Cost of tea production (COP) is significantly higher in Sri Lanka than any other major producing country (Sri Lanka 1.75 \$/kg; Bangladesh 1.35 \$/kg; India 1.25 \$/kg; Kenya 1.10 \$/kg; Vietnam 1.00 \$/kg), which has a significant impact on competitiveness of Sri Lankan tea on the world market.

Tea manufacturing requires significant amounts of thermal and electrical energy input. Whilst the provision of firewood is considered uncritical, there are severe problems with electricity generation and distribution, leading to ever increasing electricity prices on the one hand and planned power cut offs on the other. Therefore, one of the main concerns for tea manufacturers is to significantly reduce electricity demands in production.

A scoping study including targeted interviews with the factory managers of all major tea factories in Sri Lanka was carried out. The results show that there is significant concern regarding the increasing electricity costs and decreasing accessibility of electricity and the effects this has on the competitiveness of Sri Lankan tea on the international market. The participants see the reduction of electricity consumption and, therefore production costs, as the key to securing competitiveness of Sri Lankan tea and, subsequently, the livelihoods depending on tea production. They also identified the withering process as the most electricity intensive production step. Hence, ways need to be found to increase efficiency of the withering process in particular.

Grace Iara Souza presented a poster on Food Security & Environmental Conservation in the Brazilian Amazon. The Brazilian Amazon is the largest continuous remaining tropical forest on the planet. With about 4,2 million km<sup>2</sup>, the Amazon biome covers 49% of the Brazilian territory, distributed along nine States (Fig.1). It has the world's largest drainage basin, the River Amazon, responsible for approximately 15-20% of the world's fresh water with approximately 6,925km<sup>2</sup> long. Its waters influence in the raining regime of Brazil and the whole Latin America and have directly impact on agricultural production. Additionally, the Amazonian rainforest stores about 20% of the planet's carbon in the form of carbon dioxide, trapped by photosynthesis (ibid. 2006:256). The Brazilian Amazon ecological mosaic has a rich variety of fauna, flora and soil types, and significant climatic differences. It provides a wide array of ecosystem services that support human life and more than 2000 species of plants with nutritional and medicinal value. It also hosts approximately 20 million Brazilians that differ in their history, culture, demography, social and political organisation, and attitudes to nature.

Despite the richness of natural resources and ecosystem services that the Amazon basin offers, a large part of its inhabitants remains food insecure (Orz et al. 2013:33). Only in 2004, the highest concentration of food insecure people in the Brazilian Amazon (between 40% and 20% of the population) were in the states of Roraima, Maranhão and Acre, whereas in Mato Grosso and Rondonia the percentage of food-insecure population was somewhat lower (10-20%). Except for the poorest segments of urban populations in the Amazon, food security has mainly been a serious issue in the rural areas during periods of natural catastrophes, such as major flooding (2009) and the major drought along the Amazon River in 2005.

The facts that most contribute to the high deforestation rates in the Brazilian Amazon are: market-driven agribusiness growth, expansion and modernization of traditional cattle ranching, slow growth of peasant agriculture, logging in forest frontiers, resurgence of agro-extractive economies. Galford et al. (2010) calculated that

by converting natural vegetation and pasture for row-crop agriculture the GHG emissions in Mato Grosso averaged annually 179 Tg CO<sub>2</sub>-e; i.e., over half of the typical country's fossil fuel emissions. Moreover, intensive use of fires for preparing land for agriculture and the leakage of these fire often degrade any surrounding remaining forests, thereby pushing towards an eco-climatic 'tipping point' into a more degraded scrub system (Nepstad et al. 2008). The use and produce of biofuels as a way of mitigating climate change is also closely linked with the food security debate

## AGRICULTURE AND COMMODITIES

- Dr Michael Bantle

Dr Michael Bantle from SINTEF in Norway began the discussion with his research on food security and ethics from an energetic point of view. Bantle began by stating that the population of the world is estimated to be 13 billion by 2100 and that this increase is the “main problem” for food security as this will result in an increased demand for food, which in turn contributes to an increased need for energy. One of the answers to this problem is better usage of available food (and feed) sources. Bantle argued that food preservation will be a key element in this. In particular, Bantle discussed the benefits and disadvantages of drying vs. freezing. However, food preservation of existing food sources is only part of the solution. Another is to explore new food and feed sources, for example algae. But how is it possible to influence producers and consumers? Bantle proposed two methods: money and legislative.

Bantle discussed in detail three methods of food preservation: super-chilling, heat pump drying, and superheated steam drying. He highlighted the advantages and disadvantages of both in terms of energy demand and socio-economic considerations. Overall, Bantle concluded that there is an increasing demand for high-quality food and feed, and reliable “green” energy. However, this raises the question of increased prices for such food and energy. In particular, the meat/Fish industry is associated with high amounts of greenhouse gases. Therefore, Bantle argues, the use of “new” technology, which is more energy efficient, is crucial. One problematic, however, is that the food/feed industry is quite conservative towards innovations. In order to make it attractive to those industries, and therefore feasible, the payback time should be short. Bantle argued that heat pumps could be used for an upgrade to premium energy.

- Dr Ben Richardson

Dr Ben Richardson, a professor in International Political Economy at Warwick University, posed the question “What can security do for food?” The presentation focused on the example of Brazil and asked ‘what are the analytical benefits of using the security vocabulary when addressing issues of human well-being?’ Richardson also raised the point ‘to what extent can a security framing of these issues be useful in the normative and political sense? That is, when making judgments about existing policies and when formulating and implementing alternative ones? Richardson used the case of food security to engage with these questions. He argued for a shift away from conceptual fine-tuning of what food security should mean and towards an appreciation of how security functions as a political modality. Whilst acknowledging that this modality can work to encourage international conflict, enable governmental control and empower global capitalism, Richardson refuted the idea that security has an inherent logic which denies progressive politics. Drawing on the idea of emancipation in critical security studies, and applying it to empirical examples from contemporary Brazil, Richardson concluded by showing how food security can help expedite action to address harm and vulnerability, reinforce the public sphere and widen the scope of social concern.

## - Stuart Crichton

Newcastle University's Stuart Crichton rounded out the panel with his research on food security from the disciplines of engineering and neuroscience. His topic addressed the use of computer vision and the consumer perception of tomatoes for the minimisation of product wastage. Crichton stated that the E.C. estimates that, within industrialised countries, over 40% of food wastage occurs after harvest. This wastage occurs at both the retail and consumer levels and is, in part, connected to aesthetic appeal. The preferences of consumers, and thus the effect of storage conditions on food are of great importance. Crichton argued that with retail wastage we can consider visual aesthetics to be of great importance. Crichton's research investigated the effect of three different storage conditions (over 15 days) upon the visual appeal of tomatoes. This was achieved through the use of a visual questionnaire on untrained subjects, with the results then compared to chromatic information captured through the use of hyperspectral imaging. Crichton's results showed the effects, using statistical and chemometric methods, of storage condition upon the chromatic and consumer visual perception of tomatoes.

## THE FUTURE: WHERE ARE WE HEADING?

- Dr Luca Panzone

Dr. Luca Panzone, a lecturer in Consumer Behaviour from Newcastle University, opened the conversation with his paper which explored whether consumers make coherent decisions in the presence of an environmental policy targeting behavioural change in multiple food grocery choices. In the project, the impact of policy (labelling, subsidy, and ban) on a food basket was tested through an incentive-compatible field experiment in a UK retailer targeting four categories. Panzone's results suggest that consumers respond differently to a policy when making one choice compared to two choices: a second decision can significantly increase or decrease the probability of an initial environmentally-friendly choice. Furthermore, instances of moral licensing indicate consumers often balance the purchase of "clean" and "dirty" options: pro-social behaviours are substitutes across categories because the pursuit of pro-social goals complements the pursuit of private goals. Consumers appear to maximise an overarching "global" utility function spanning across the basket, which aims at the satisfaction of both goals. In conclusion, Panzone argued that it seems consumers understand environmentally-friendliness as making green choices in some categories rather than in all categories.

- Dr Jeffrey Collmann

Jeffrey Collmann, an anthropologist from Georgetown University, concluded the day's presentations before the final keynote address. Collmann began by discussing the perception of food security within anthropology, arguing that food translates macrosociological changes and conditions into microsociological phenomena. In other words, food becomes an area of contention. For example, colonial dispossession and dislocation often changed the source, availability and substance of food supply for indigenous people. Further, for contemporary rural producers in developing countries, economic globalization threatens livelihoods and ways of life. Collmann argued that the ethics of food security included:

- Beneficence: obligation to nourish
- Nonmaleficence: obligation to provide safe food
- Autonomy (individual): safe, adequate nourishment a condition of personal autonomy
- Autonomy (communal): control of means of food production a condition of social autonomy for agricultural communities – "food sovereignty"
- Social justice: obligation to fairly distribute food-related harms and benefits

The ethics of social justice have a temporal dimension, according to Collmann. The consequences of food supply changes (hunger, diabetes) persist even as colonial, neocolonial and neoliberal policies change whilst the consequences of dispossession and loss of livelihood (poverty) also persist over generations. As a result, the ethical reasoning about food entails a dynamic synthesis of past and projected future in the present context. Collmann then went on to highlight the case of Aboriginal Australians. Access to food and education justified the forced relocation to settlements and removal of children from parents. As a form of protest, fringe-dwellers maintained access to but withdrew from white resources. They minimized their demands to the barest minimum, lived less well than necessary and hedged their bets against catastrophe through the sharing of alcohol and food, the two symbols of affluence.

This was highlighted in the case of Katy Mayhew, an archetype fringe-dweller. She lived in the colonial occupation of Northern Australia and spent a life resisting and negotiating the consequences of these processes. Her identity as fighter synthesizes all the roles available in colonial Australia into an image of independence and self-sufficiency. Collmann concluded that by showing how food as an area of contention is necessary to an understanding of the complexities of food security in the future.

Professor Collman's presentation served as a fantastic conclusion to the conference and led into a short break before the keynote address from Professor Tim Benton, UK Champion for Food Security. This break gave us the opportunity to present our postgraduate awards. The prize for Best Paper went to Francis Mwambo of the University of Bonn and the prize for Best Poster was awarded to Jo Bridge from the University of Leeds. It was an extremely difficult task to decide on these prizes as all presentations were well presented and offered fascinating contributions to our stimulating debate.

## KEYNOTE PUBLIC LECTURE

- Professor Tim Benton

After a short break, Professor Tim Benton gave a fascinating keynote address on a holistic approach to food security. In his talk he gave particular thought on the different economic, social and ecological aspects playing into food security. He also emphasised that due to growth of population, climate change, desertification and other major factors, the question of food security is growing in complexity. He therefore called for more inclusive and multi-disciplinary approaches towards tackling food insecurity. Within his presentation Prof Benton also pointed out, that currently a great part of the produced food stuffs are lost, either due to market rejection (developed world) or lack of preservation technologies available (developing world). Particularly in context of the former, re-evaluation of buying preferences of consumers and better post purchase management within the households seem to be the core point towards reduction of these losses.

In conclusion, Professor Benton called for a new understanding of the problematics of food insecurities and more collaboration between the stakeholders on every level of society with a greater understanding of each other's points of view.

Professor Benton's talk was a well matched conclusion of the day's topical wealth and was followed by a very fruitful discussion.

## CONCLUSION

This conference represented the first event in which such a wide range of disciplines came together to address the issue of food security and insecurity. It was a fantastic opportunity to search for solutions together and look at the problems from different angles. It was fascinating to see engineers and psychologists so engaged with presentations from historians and literature scholars, and vice versa. All presentations were enriched by the questions posed from within, and outside, the disciplines of the presenters. As an organising committee, we feel that solutions to such a complex issue as food security cannot come from one discipline alone. We must bridge the disciplines to have any chance of finding real-life, workable answers to this global problem. We cannot propose solutions without questioning how we got here, where we are now, and where we are going. This conference was the first step in doing just that.

## ABOUT CUMBERLAND COLLOQUIA

Through the Cumberland Colloquium scheme, Cumberland Lodge offers its expertise and beautiful venue to facilitate interdisciplinary and inter-institutional conferences, run by and for postgraduates and early career researchers. Fully mentored by Cumberland Lodge, organisers will have the opportunity to deliver a well-crafted one-day conference and gain valuable experience in the processes of funding applications, administration, recruitment, networking, publicity, report-writing and press releases.

Find out more at:  
[www.cumberlandlodge.ac.uk/about-us/our-work-with-students](http://www.cumberlandlodge.ac.uk/about-us/our-work-with-students)

## ABOUT CUMBERLAND LODGE

Cumberland Lodge is an educational charity which was established in 1947 as an institute dedicated to the betterment of society through the promotion of ethical discussion.

Inspired by the beauty and history of its surroundings, Cumberland Lodge is dedicated to the discussion of ethical, spiritual and topical issues in contemporary society. Preparing young people for their future responsibilities is at the heart of its work, but the Lodge seeks through the enquiring nature of its programmes and the quality of its hospitality to enhance the well-being of people whatever their age or wherever they live.

## CUMBERLAND LODGE STAFF

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“Ethics of Food Security in a Changing Society  
– Learning from the Past to Shape the Future”  
Summary report written by Dr Helen McKee  
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