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ADVICE PAPER
No.13 - September 2013

The future of the Social Sciences and Humanities in Europe: collected LERU papers on the SSH research agenda

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Content

We thank the LERU Social Sciences and Humanities Community, the Research Policy Committee and all individuals at member universities who provided valuable input for the paper and comments during the drafting process.

Introduction

In June 2012, LERU published the advice paper "Social Sciences and Humanities: essential fields for European research and in Horizon 2020". In this paper LERU explains why Social Science and Humanities (SSH) research, as the scholarly discipline which generates new and intrinsically valuable knowledge pertaining to all human aspects of the world, is of vital importance to the future of Europe. The disciplinary SSH agenda, we argue, is increasingly complemented by an interdisciplinary agenda addressing societal challenges in Europe. These challenges include international conflicts, human rights, ethics, religious traditions of acute contemporary relevance, economic and educational inclusion, institutions and governance networks, social and environmental resilience, changing media, literacy, identities and cultural memories, linguistic diversity, creative industries, cultural heritage, life long education and learning, developmental disorders, psychopathologies, psychological disorders, addiction, and man-machine interactions. A thorough SSH insight into these challenges is as important as contributions from natural-scientific and technological disciplines to the creation, implementation and evaluation of effective public policies and innovative structures underpinning corporate performance.

Social Science and Humanities research is of course essential for the seven societal challenges identified by the European Commission as those to be pursued in the Horizon 2020 research programme. The 2012 LERU advice paper argues that SSH researchers should be involved in the agenda setting process in relation to all societal challenges, meaning that SSH researchers will take part in the whole process, from problem formulation to project evaluation and project implementation. In order to stimulate that process, LERU has produced seven notes, one on each of the H2020 societal challenges, to illustrate how SSH can contribute to the research needed to solve them. This major effort was undertaken by the SSH Community within LERU, bringing scientists together from all SSH disciplines in LERU universities.

The seven separate notes on SSH research within the societal challenges of Horizon 2020, all written in the period March-June 2013 before the final Trialogue approval of Horizon 2020, have now been assembled into one advice paper. Also included are a statement and agenda for ethics research in Horizon 2020 (April 2013), as well as a statement on possible research for a resilient and dynamic Europe in a globalised world (July 2013).

By bundling these separate short papers on the many intriguing questions that SSH research will need to address in the coming years into one advice paper, we hope to provide a comprehensive and united thought piece on SSH research which will make a useful contribution in the formulation of European research policy in Horizon 2020 and beyond.

Essential SSH Research for the Societal Challenge
Health, demographic change and wellbeing

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the challenge 'Health, demographic change and wellbeing' in Horizon 2020.

The first author of the paper is Prof. Philip Spinhoven, Professor of Clinical Psychology at the Universiteit Leiden, with significant contributions from the LERU Community of Social Sciences and Humanities and with the support of Prof. Wim van den Doel, Professor of Contemporary History at the Universiteit Leiden and Chair of the LERU SSH Community and Dr Katrien Maes, LERU Chief Policy Officer. *We explicitly wish to thank all individuals at the LERU member universities who provided valuable input for the paper and comments during the drafting process.*

Introduction

1. Ever increasing numbers of very old people can remember times when a person's final illness lasted for a couple of days or, at most, weeks. Now that we live longer, we may live with ill health for years, sometimes decades. At the same time, neonatal medicine rescues the lives of infants no larger than a human hand, sometimes at the cost of life-long developmental impact/disability,resulting in problematic functioning. At the same time our society gets increasingly more complicated and participation becomes difficult for less advantaged groups as we place more and more emphasis on self-reliance, flexibility and success. For people, especially children with developmental disorders such as a mild intellectual disability, psychiatric or behavioural disorders these changes mean there is increasingly less place for them in our workforce and in society in general, in an increasingly demanding society.

2. But institutions where those unable to lead independent lives used to be hidden from view, often in conditions of extreme misery, have closed. All these developments have their favourable aspects: there is more of life for more of us but recent budget cuts erode solidarity in our society and hit less advantaged groups hard. This will reduce their ability to participate and paints a bleak future in institutions and prisons (in the US one out of hundred inhabitants is currently jailed).

3. Demographic change as well as the definition and study of wellbeing and the mechanisms of adaptive abilities in humans, in and by themselves, require social sciences. Demographic change, wellbeing and adaptive behaviour are aspects that medical disciplines do not really know how to handle, focused as they are on diseases; moreover, even if there are quantitative approaches in medical sciences such as epidemiology, demographic change is a social issue more than a medical one. Moreover, demographic change as well as wellbeing result from a true interaction of biological (and genetic, but not only), cognitive, social and cultural variables.

4. Therefore LERU would like to stress that the purpose of this note is not only to include essential SSH research in the programme, but also SSH researchers in *all* relevant committees so as to ensure that several perspectives are adopted on all the subtopics.

Developmental changes in the normal population

5. There have been too few studies on developmental changes in the normal population, whether throughout childhood or through the adult life period; most often one assumes that average values (of whichever variable, whether physical or mental) or group values apply to all "normal" individuals, and that only sick/ill persons do not conform. On the contrary, research is needed to understand

   - that inter- and intra-individual differences are the norm within the general population. LERU would also like to point to the growing interest in the medical world for what is now termed "personalised medicine"; it shows that there is a growing awareness that individual differences are crucial, but it tends to be restricted, once again, to the ill;
   - that, because of these differences in underlying

mechanisms which regulate functioning, the same individuals are to be followed through longitudinal studies across a period of time;

- that there is, in most cases, a continuum between normality and pathology. One is not ill or healthy; it is, in most cases, a question of threshold.

Somatic and mental health

6. The concept of health has important cultural, social, developmental, behavioural and psychological (neurocognitive) dimensions, which are not explicitly mentioned in the Horizon 2020 proposal (EC, 2011). Besides somatic health, health also involves mental health defined by the WHO as a "state of complete physical, mental and social wellbeing, and not merely the absence of disease". Following this definition, mental health is related to the promotion of wellbeing, the prevention of mental disorders, the early diagnosis of disorders and the treatment and rehabilitation of persons affected by mental disorders.

7. Thirty-eight per cent of the EU population in the age range of 2–65+ years are, or have been, affected by at least one mental disorder in the past year (e.g. anxiety disorders, major depression, somatoform disorders, conduct disorder/antisocial personality disorder, oppositional defiant disorder, attention deficit hyperactivity disorder, substance use disorders) and approximately 1.3 % of our population has a mild intellectual disability. Mental disorders account for almost one third of all disease burden, with depression alone being the largest component of Europe's total burden of all diseases.

8. Cost-of-illness studies consistently indicate that the economic and social costs of mental disorders are enormous - considerably larger, for example, than the costs of diabetes or cancer. Approximately €255 billion a year can be attributed to a mental disorder in a strict sense. Most of the mental disorders are characterised by proportionally low direct costs (diagnostic measures, treatment, care), but exceedingly high indirect costs (sick days and disability, early retirement but also relatively high societal costs like drug use and crime). Work-related stress accounts for 50-60% of workdays lost, which corresponds to 4% of the EU GDP.

9. In 2009 the European Parliament passed a resolution calling for a coordinated effort that is proactive, evidence-based and directed to the design and implementation of comprehensive, integrated, effective and cost-efficient mental health systems. Adopting an integrative and promotive approach to mental health and wellbeing, the full spectrum of mental health and wellbeing has to be covered –not only its biological, but also its psychological, epidemiological, public health, social and economic aspects.

10. Social Sciences and Humanities can contribute substantially to research into causes and determinants of specific mental and neuro-behavioural disorders, as well as their prevention, early diagnosis, treatment and rehabilitation. Such an approach recognises the fact that physical and mental health are closely connected and that mental health cannot be viewed or treated in isolation: mental health problems and their solutions will vary by age, gender, culture and socio-economic circumstances. Besides pharmacological interventions, psychological interventions (for example internet-interventions such as Cognitive Bias Modification) are established treatments for almost all mental disorders and mental health problems – and often a first-line treatment. They are also the preferred methods for increasing the general wellbeing of healthy people.

11. Behavioural science is extremely relevant for somatic health problems: psychological, behavioural and cultural factors are involved in the mechanisms that regulate physical health and illness, in addition to or in interaction with biological (epigenetic) factors. Psychological factors can affect health directly (e.g. high levels of stress causing a shift in the HPA-axis, changing the release of corticoid hormones which in time can damage the body and cognitive regulation functions over time) and indirectly via a person's own behavioural choices, which can harm or protect their own health (such as smoking or exercising) but also the wellbeing of others, e.g. risky behaviour or criminal conduct.

12. Factors that influence upbringing have high developmental impact on emotional and physical wellbeing and adult outcome in children and adolescents (e.g. in obesitas and behavioural problems). Opportunities for cognitive and social learning, in adaptation to genetic and epigenetic factors, influence life time self-regulation mechanisms that determine self-management and self-control. Behavioural scientists can improve health by unravelling mechanisms of self-regulation that are related to self-management and adaptive behaviour and by

promoting healthy life styles, increasing quality of life and wellbeing. They do this both on a small scale - working with individuals and on a larger scale - in public health programmes and by training healthcare professionals (e.g. physicians and nurses).

The true size and burden of mental disorders

13. Learning problems and behavioural dysfunction in the EU have been significantly underestimated in the past and are increasing as our society grows more complex. Concerted priority action is needed at all levels, including substantially increased funding for basic, clinical and public health research, in order to identify better strategies for improved prevention, early diagnosis and treatment for disorders of the brain and developmental disorders as the core health challenge of the 21st century (Wittchen et al., 2011).

14. Recent studies estimate that 38% of the EU population suffers from mental/brain disorders (Wittchen et al., 2011), with an estimated economic burden of €789 billion (Gustavsson et al., 2011). Note that this estimation does not include the costs of smoking and alcohol abuse, two of the most frequent and costly problems. When included, total costs are estimated to be €924 billion per year, with addiction (including harmful use of tobacco) ranked highest, mood disorders second, followed by dementia, psychosis and anxiety disorders (Effertz & Mann, 2012). Interestingly, the large majority of people (78%) with the most costly disorders (addictive behaviours) do not receive formal treatment, and for the two other most costly mental disorders the treatment gap is estimated to amount to around 50% (Kohn et al., 2004). During the year before assessment, only 8% of people with an alcohol problem, 26% of people with an anxiety disorder and 37% of people with a mood disorder received formal treatment (Alonso et al., 2004). The majority of people suffering from common mental disorders are left untreated, which costs the EU much in terms of personal wellbeing and societal damage.

Medical humanities

15. Health and wellbeing are embedded in medical research but there is growing appreciation of the need for more holistic approaches which focus on broader health and wellbeing issues and wider systems of social care beyond the provision of medical care. Health problems are risk factors in the social development of children and adolescents into adults who can participate in society. SSH research is of great importance to create forward looking and effective medical education and practice.

16. The 'medical humanities' include an interdisciplinary field of humanities, social science and the arts, and provide insight into the human condition, development, suffering, personhood, our responsibility to each other as well as how social conditions and social institutions influence health and wellbeing and the effects of medical care. They also offer a historical perspective on medical practice. Attention to literature and the arts help to develop and nurture skills of observation, analysis, empathy, language and self-reflection - skills that are essential for humane adaptive function and medical care. Not only can humanities scholarship help foster these skills among medical practitioners, it also has the potential to participate more directly in the therapeutic process by helping patients suffering from disorders to achieve peace of mind and enjoy a more rewarding social life. Close cooperation between medical science and cultural scholarship, including practice-based research in the arts, is needed to test and develop this potential beyond the level of well-meant intuitions.

Demography

17. Europe has to adapt to long-term social and demographic changes such as population ageing, below-replacement fertility, extended life expectancy, increased complexity of family networks, increased female labour force participation, and increased mobility both within and across countries. Across Europe, old forms of inequalities, e.g. between social classes, have resurfaced and new forms of social and economic inequalities, e.g. between the young and the old, and between dual-earner and single-earner couples, have developed. These social and economic developments pose key challenges to governments and other societal stakeholders across Europe.

18. An understanding of how these new social and economic realities impact European populations also requires a focus on generational and gender interdependencies in families and other social networks, and on how these dependencies are shaped by the educational system, labour market, housing market, civil society, and welfare state policies. Institutional

frameworks support individual autonomy or impose dependencies between men and women and between family generations. Work, residential, and care arrangements are a reflection of cultural values shaped by socio-economic and political contexts. People take decisions related to schooling, work, leaving home, partner relationships, childbearing, housing, care, and their personal life with reference to moral and socially negotiated views about what conduct is right and proper.

19. In order for the social sciences to provide answers to these questions, data are needed that (1) cover the complete adult life course and focus on key decisions and transitions in men's and women's lives, (2) are longitudinal, prospective, and forward-looking, (3) are cross-nationally comparable, and (4) combine information on institutional context and individual behaviour. If we want to prepare Europe for the future ahead, we need data that are based on a life course perspective, which views individuals' life course as shaped by earlier life circumstances, the families and social networks in which people are embedded, and the institutional, cultural and economic context.

Health, wellbeing, ageing and physical activity

20. Numerous studies have shown the impact of a moderate and regular activity on health. Thirty minutes of motor activity each day is associated with a 30% mortality decrease. Physical activity has a positive impact on, for example, cardio-vascular risks, type 2 diabetes and breast cancer, but also on depression and wellbeing; neurological diseases are affected as well. Recent studies show a 30% decrease of Alzheimer when people are physically active. More generally quality of life (physical, mental and social) and self-esteem improves when people are physically active (between 30 and 90 minutes of exercise daily). The latest studies show that this is particularly true for ageing people. Cognitive performance is impacted by physical activity at all ages.

21. The processes that lead to such results begin to be known: weight loss, hormonal impact, stress regulation, brain oxygenation, and immunity. But more needs to be done to understand the impact of physical activity on (mental) health and wellbeing. However, the challenge resides mostly in engaging people in staying physically active. Beside the physiological limitations, socio-environmental obstacles need to be taken into account as well as psychological beliefs and habits of modern life. Studies have to be done on the socio-psychological perspective. The social benefits are obvious: less dependence, less disease, less health cost.

Culture and ethics

22. Prevention efforts have recently turned to understanding how micro-environmental factors, such as physical living environments, impact on non-communicable diseases, such as overweight. Much less attention has been paid to how macro-environmental factors, such as the media environment, impact on health. Even though the larger part of the population now has access to health information 24/7 through entertainment and news media, little is known how media selectivity impacts on health risk perceptions and behaviours. Ecological approaches that integrate individual-level and micro- and macro-environmental level variables in the explanation and prevention of non-communicable diseases should be developed, tested and refined.

23. Furthermore, humanities scholarship can provide necessary protection against hasty extrapolations about human nature on the basis of neuroscientific findings and, more productively, can help neuroscience to refine its research questions and to achieve results at a level of precision adequate to the human condition. Equally important is the question of how cultural values and beliefs influence policies and legislation on medical research, e.g. in the recently contested EU ban on patents based on human stem-cell research.

24. In the Horizon 2020 proposals it has been signalled that the costs of health and social care systems are rising as a result of the care and prevention measures and the increasing life expectation. The aim is to ensure health and wellbeing, but at the same time to lower the costs to such an extent that the health system remains financially sustainable. To achieve this aim scientific tools and methods to support policy making and regulatory are needed. This includes the development of methods to monitor the safety, efficacy and quality of health technologies. Additionally, support for "improved risk assessment methodologies, testing approaches and strategies relating to environment and health" are required (EC, 2011, p. 53).

25. At this point, ethical aspects are already mentioned

explicitly. This does not come as a surprise, because debates on all the mentioned topics already exist in bioethics. These are debates with established methodologies, publication media and research institutes. In the last 20 years the European Commission has strongly facilitated the debate in Europe. Currently, there is a need to further develop the methodology of ethics research in this area. Important research topics are:

- The further development of the human rights regime as normative framework for bioethics.
- The ethical significance of instruments for the measurement of welfare and their applicability in health care.
- The role of health care towards the background of demographic changes.
- The ethical assessment of the whole genome diagnosis.
- New possibilities of prenatal testing which will influence the scope of the application of genetic testing.
- New possibilities with respect to enhancement, especially related to the question of who has access to this new development and who has not.

A focus on these topics will further improve the quality of the systematic reflection on the normative dimensions of the health related challenges.

Recommendations

26. It is clear from the above that there is an urgent need for the European Commission to consider the inclusion of SSH research in the programme for addressing the challenge Health, demographic change and wellbeing. LERU also wishes to stress that all programme committees and sub-committees should be composed of several disciplines, first of all SSH. This is the only way to achieve the breakthrough progress in research that Horizon 2020 is supposed to achieve.

LERU suggests the following research lines:

Horizontal issues and framework conditions

27. For basic, clinical and public health research it is crucial to increase the participation of mental health professionals and organisations, patients and service users, families or carers, policy makers and administrators and donor organisations. Stakeholder involvement adds value to mental health research, e.g. by suggesting feasible research designs or patient relevant optimal research outcomes. This improves the real world value of research.

28. Mental health research covers a wide range of disciplines ranging from social science, psychology, educational sciences and cognitive sciences to genetics, biomedical research, imaging, basic neuroscience, etc. Funding allocated to mental health research is not proportionate to the burden of disease and is fragmented among disciplines. What is needed is a consistent strategy at the national and European levels for the development of a coordinated approach for mental health research integration.

29. The 'medical humanities' include an interdisciplinary field of humanities, social science and the arts, and provide insight into the human condition, suffering, personhood, our responsibility to each other as well as how social conditions and social institutions influence health and wellbeing and the effects of medical care. Again, a consistent strategy at the national and European levels is necessary to develop a coordinated approach to medical humanities research.

30. Applied cognitive sciences and neurosciences involving natural and artificial mind studies should be considered as a privileged paradigm in order to study the relationship between lifestyle, individual choices, wellbeing and health. Furthermore, within the same paradigm it is possible to design, test and validate new tools to improve individual and social wellbeing, both supporting prevention activities and specific therapeutic programmes.

31. Research training and critical mass should be enhanced by providing incentives for research careers in mental health, medical humanities and applied cognitive sciences research and encouraging broader, structured training programmes across all relevant disciplines and careers.

Pillar 1: Prevention, screening and early diagnosis

32. To obtain optimal health outcomes, research on communication processes (mass media, social media as well as interpersonal), health promotion and education is crucial. For instance, mass media strategies can be used to effectively communicate a healthier lifestyle, interpersonal communication strategies can be used by caregivers in prevention, detection and/or treatment of health problems. Healthy behaviour promotion needs large-scale studies in order to test which action at social and individual level are actually efficacious in helping people to adopt healthier lifestyles, thus preventing known risk factors. (Neuro)cognitive and behavioural approaches should be enhanced, also through the development of technological innovations (web-based tools, social networks applications, portable communication and assessment devices), with the aim to increase the efficacy of policies and educational programmes.

33. As mental disorders result from the interplay of genetic and environmental factors, interdisciplinary population-based research by biological, neurocognitive and behavioural scientists is needed to identify their developmental and life-course determinants. Large-scale datasets and repositories of biological, (neuro)cognitive and social determinants of mental health as well as large-scale longitudinal cohort studies are needed in order to unravel the multiple genetic, social and environmental mechanisms involved in mental health problems. But also small studies targeting the 'frontiers' of social and psychological science are in dire need of funding.

34. Knowledge of the adverse environmental influences on brain and social development is crucial for developing and testing primary preventive strategies at the level of the individual (e.g. cognitive-behavioural therapy for ultra-high risk groups for schizophrenia to prevent conversion into caseness; therapy and treatment of a growing number of developmental disorders like autism, attention deficit problems and behavioural problems in children). Especially early detection of individuals at risk to develop mental disorders or behavioural problems allows intervening at an early stage or before the worst symptoms occur and help to prevent long-term cognitive and social-emotional damage. Prevention programmes for various (often transgenerational) mental disorders need to be developed and tested as regards (cost-) effectiveness and feasibility.

Pillar 2: Care and cure

35. It is necessary to develop and test new, more effective treatments for mental and developmental disorders and implement them more rapidly. Developments in genetics, developmental biology and neurobiology are beginning to answer the question how genes and their interactions with the environment influence neural systems underlying aberrant cognitive processes of mental disorder (such as inattention, impulsivity and emotional instability like aggression, empathy and insufficient self-control) (Baron-Cohen, 2012). Multidisciplinary interaction between the disciplines of behavioural science, neuroscience, genetics medicine and more specific neurology and psychiatry will result in more stratified treatment options for various mental disorders.

36. Only one third of persons in the EU with mental disorders receives adequate treatment. Since the available treatment resources are limited, new science-based models of service delivery have to be developed and tested - especially for those conditions with the highest prevalence (e.g. depression), highest economic costs (e.g. autism, learning disorders, ADHD) and harder to reach individuals (e.g. the homeless, delinquents, the elderly and migrant patients). One opportunity to reduce the 'treatment gap' is to use innovative IT approaches based on the web and use of Ipad or mobile phones. The development of innovative IT approaches could be done with greater partnership with industry to increase leverage.

37. Addressing the organisation of mental health care could also reduce the burden of mental disorders. Models of timely targeted diagnoses, prevention programmes and early intervention, collaborative care of general practitioners with psychologists/psychiatrists and training of general practitioners and health psychologist in somatic, psychological, behavioural and social determinants of mental health have to be developed and tested for (cost-) effectiveness and feasibility.

38. The medical humanities should also be given attention, including issues related to the arts and the brain – how does the experience of music, pictorial art and literature interact with cognitive and affective function? Or literature as a facilitator of understanding – how can the study of fiction, poetry and drama improve the emotional intelligence of the caring professions? Or cultural activity as self-therapy – how does the adoption of a cultural activity (art or

music classes, literary expression) assist the healing process? Healing in other cultures should also be researched – what do the practices of past and foreign civilisations tell us about ways of reducing human suffering and anxiety? Work in the related interdisciplinary fields of memory studies and trauma studies has become increasingly comparative and multidirectional in recent years and holds valuable potential for addressing human distress caused by medical disorder and societal breakdown.

Pillar 3: Wellbeing and health development

39. Mental wellbeing is more than the absence of somatic or mental disorder and involves the presence of positive characteristics such as participation, resilience, self-esteem, empathy for others and self-control, determining quality of life. Pivotal for wellbeing is the capacity to live and cooperate with other people, the social adaptive development. Studies to identify the neurobiological and psychological underpinnings of wellbeing across the life span and health development are needed. These could provide the basis for evidence-based public health strategies to promote wellbeing in the workplace and in schools, educational and social care services for the elderly and group-based parenting programmes.

40. Given the rapidly ageing European population, in particular "independent" living of the elderly in different social and cultural contexts within Europe should be facilitated by developing programmes for self-management including smart assistive technology. Other questions which should be addressed include issues related to ICT and disability – how can people with learning disabilities and physical impairments use information and communication technology in life-enhancing ways? Or related to faith, mind and body – what are the mechanisms behind the longer spans of healthy life observed in regular worshippers?

41. There is an urgent need for large-range, longitudinal studies (prospective studies in which the same individuals are followed through time) in order to adapt to long-term social and demographic changes such as population ageing, below-replacement fertility, extended life expectancy, increased complexity of family networks, increased female labour force participation, and increased mobility both within and across countries.

Pillar 4: The ethical dimension of health and wellbeing

42. Across the whole medical and health remit there are also important ethical and cultural issues related to end of life, treatment interventions, genetics, reproduction and healthcare regulation. Questions which should be addressed by research include life choices and prioritisation in health care – what, if any, ethical rationales can be found for the allocation of health-care resources in the context of individual responsibility? Organ trafficking – what are the ethical implications for all agents in this trade, including the recipients of organs? Infertility – what are the ethical implications of granting and withholding treatment on the basis of various criteria, such as parental age? The termination of life – how can life-terminating and non-life-prolonging measures be given a basis in a code of practice resting on shared and recognised ethical principles? 'The long goodbye' – what cultural elements associated with funeral practices and grave-sites can be seen to enhance the quality of life of survivors? Research is needed on the ethical significance of instruments for the measurement of welfare and their applicability in health care, the role of health care towards the background of demographic changes, the ethical assessment of the whole genome diagnosis, the new possibilities of prenatal testing, which will influence the scope of the application of genetic testing and the new possibilities with respect to enhancement, especially related to the question of who has access to this new development and who has not.

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Essential SSH Research for the Societal Challenge
Food security, sustainable agriculture and forestry

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the challenge 'Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bio-economy' in Horizon 2020.

The main authors of the paper are Emanuela Scarpellini, Roberta Sassatelli, Alessandro Banterle and Alessandro Olperle (Università degli Studi di Milano), with significant contributions from the LERU Community of Social Sciences and Humanities and with the support of Katrien Maes, LERU Chief Policy Officer. *We explicitly wish to thank all individuals at the LERU member universities who provided valuable input for the paper and comments during the drafting process.*

Introduction: a historical perspective

1. One accepted definition of the term "food security" states that every household should have access to adequate amounts of healthy, nutritious food in a form that also respects the family's dietary preferences. This implies an analysis of health and hygiene conditions, typologies of farming, food production industry characteristics, commercial chain structures, food distribution and many other elements. A key element in this approach, however, is linked to the traditions and cultures of specific regions and social groups, which do not necessarily correspond to national boundaries, including traditional practices, religious beliefs, socio-cultural differences, stratification by gender and age group, local gastronomic culture, aesthetics and taste, geographical influences and government strategies. All historical studies related to food have shown that it is necessary to take into account all the cultural and socio-economic variables that define the distinctive nature of one particular area. Food can be seen as an identity marker, as suggested by many anthropological studies. Food, food items and foodways can be symbols of local cultures seemingly or apparently resisting the onslaught of foreign food and food styles, but they can also be carriers of globalisation actively transmitting culinary patterns from elsewhere, in addition to which there are also many forms of hybridisation. Cafes, restaurants, supermarkets and food shops can be seen as a microcosm of relatively clearly delineated cultural or socio-economic entities or even arenas where the local and the global may meet, mix, reinforce or even clash with each other. They can thus be used as a lens to investigate wider processes connected to globalisation and their impact on global cities, and notably on the production, consumption and wasting of food in urban environments.

2. The practical consequence of this premise is that a food security policy that sends generic messages and is equal for everyone may, in fact, not be understood or even be rejected by its intended beneficiaries. One example of this involves the influence of religious and cultural beliefs concerning what can be accepted as food. There are, for instance, many well-known strictures against eating some food items - despite their high nutritional value - like all meat or meat from specific animals, the consumption of fermented drinks, and limits on the quality and quantity of food at certain times of year. Food that is readily accessible because it is locally produced or imported may remain uneaten for cultural reasons.

3. Not only does usage vary greatly according to conditions whose origins are deeply rooted in time, but food availability and access are also greatly influenced by history and culture. Availability of food has always been extremely variable, depending on socio-economic conditions or job type, especially in the absence of remedial strategies. Rigid hierarchies still dictate food allocation within the family or social groups according to gender and age. Technology, which could often widen availability and access, can also be an obstacle. Technology is not a "black box" whose operation is a mystery - it is an instrument to be interpreted and used according to acquired cultural codes. In Europe many of the problems surrounding access to food were resolved during the nineteenth century. However, the recent

crisis has seen the appearance of new forms of poverty - not all linked to recent immigration - that place these problems in a contemporary context and demand targeted policies. As a result the following three issues are particularly relevant:

Cultural food practices and taboos

4. In-depth research into the customs and limitations surrounding specific types of food or their combinations stemming from traditional practices and religious prohibitions is needed. The ideal would be to complete a comprehensive mapping of these usages, which exist in all European countries, also reflecting the numbers of different ethnic groups that retain - partially, at least - the food customs of their origins as a link with their land of origin. Only in this way can food security policies effectively target consumers, avoiding waste of resources and energy. They should also lead to a wider interpretation of the concept of food security, forcing us to adopt a more realistic approach. In particular we recommend a careful analysis of alimentary taboos. This means more than just religious prohibitions - take, for example, the growing popularity of vegetarianism or the fall-out from situations such as those created by recent food industry scandals regarding the presence of horsemeat in processed products. In this last case the levels of outrage differed across Europe. There was no real anger in areas where eating horsemeat is a normal part of traditional practices, but there was an intense reaction in countries where horses are not regarded as working animals, but are seen as pets on the level of dogs and cats. The result of this attitude is the development of a taboo against killing and eating animals with a sentimental appeal.

Gender role

5. We recommend an in-depth study on the primary importance of women in food security, analysing their manifold role in food production, preparing meals, consumption and educating children about their food culture (especially looking at the historical evolution of this issue). Food messages and policies must be specifically directed towards the section of the population that is directly responsible for the majority of activities linked to food. That is why it is important to understand women's needs, their cultural position, local traditions, educational level, how meals are prepared at home and the way in which information is communicated. Only a more forceful message that targets women more effectively will prepare the way for the implementation of useful policies in the medium and long term.

Ethics

6. The quality of food is important for public health outcomes, thus overlapping with crucial health policies and the agenda of the health sector: dietary lifestyles matter both to individuals and to society, opening the space for interventions on individual choices motivated by public needs that are ethically questionable. Valuable local identities and cultural peculiarities might be threatened by technical solutions for improving agricultural yields throughout the food system, with different stakes pointing toward different solutions. Concerns for environmental sustainability and food security must also be addressed at the same time, thus opening up the possibility of tensions between these key developmental goals. The cosmopolitan nature of food production and distribution systems give rise to debates pertaining global justice and the duties and rights of people belonging to different nation states and supranational institutions. In the public perception, there are furthermore fundamental moral disagreements about the use of genetically modified organisms and the management of animals. Ethics can be valuable in highlighting specific places of ethical disagreement in the design and implementation of food policy. If moral theorists can employ results in the field of medical humanities to address the controversial issues arising from food policy for health, it is clear that the moral questions regarding who should act- and on the bases of which duties- will be crucial in the implementation of just solutions for the food challenges.

A sociological perspective

7. As the sources and quality of food are increasingly invisible to consumers in modern globalising industrial food systems, a discourse on food quality is becoming paramount, and many consumers appear to deploy increasingly politicised frames to consider their access to quality food. On their part, the social sciences have long shown that food, food choices and food practices are political: food unites - meals bring people together in social collectivities - and divides - food may express cultural conflicts and meals can also be quite alienating events. Thus, if food

and food habits have been only implicitly addressed in classical sociological literature, the field of food studies is now quite established. For rural sociologists, food has been central in studies of agricultural and technological change for some decades now. For medical sociologists, food and nutrition are increasingly recognised as an important factor in the study of health and wellness. Cultural and economic sociologists have stressed the symbolic role of everyday practices and the way in which food systems, trust in food and food communication are intertwined with different social and economic arrangements. More recently political sociologists and political scientists have stressed how food practices of an alternative kind and food movements contribute to new forms of sub-politics parallel or alternative to more traditional means of democratic participation.

Media communication

8. Indeed, food has increasingly become a debated area at social and political level in contemporary societies. In the 1990s, European societies witnessed a number of so-called food scandals or at least debates in the media about various issues related to food, such as BSE, salmonella, pesticide residues, obesity, animal welfare, GMO and functional foods, which highlighted the issue of food safety. All in all, food issues in contemporary society are relevant for a number of different social actors, from farmers to food industry producers, from retailers to scientific experts, from cultural intermediaries to individual consumers. With the intensification of media debates about both food safety and food security, and with the increased presence of discourse surrounding the quality of food and nutrition (in terms of safety, a refinement of taste, a rising of consciousness for ethical themes and an health agenda) the distribution of responsibility among social actors for handling and solving food problems is contested and food becomes more clearly a political issue. The politics of food clearly deals with food consumption as well as what comes before and after it, what makes it possible and what are its consequences beyond its immediate meanings and rewards. It thus stretches to the entire commodity circuit, including consumption, production, distribution, regulation and representation. Indeed, a number of discourses and practices which address the politics of food today are predicated on the attempt to make the commodity circuit more transparent, shorter and fairer. The diffusion of low-cost standardised fast-food as well as food scares associated with heavily industrialised farming have often catalysed public attention towards products which are "natural", "local", "traditional", as well as sourced from "sustainable" agricultural practices and produced through "fair" labour relations. As a result, the issues of food quality and social inequalities are particularly relevant, as described below.

Food quality

9. Data coming from the Eurobarometer 2012[1] illustrates that more than 96% of EU citizens find quality an important factor when buying food (even before price, which is cited by 91%), while around 60% considers food security a relevant matter in Europe and tended instead to express concern (75%) at the challenge of feeding the world's population. Still, while access to adequate nutrition may appear less urgent in Europe to European consumers, many of the themes which are now collected under the label of food quality indeed express the particularly European vision on food security, considered as access to adequate (culturally and socially nourishing) food. There is thus the space to bring back to issues of food security what goes under the label of a 'turn to quality' in the study of food dynamics. A large amount of research described a range of novel practices in the production, distribution, retailing and consumption of food products. Highlighting concerns such as re-localisation and embeddedness, this research has suggested that a new moral economy alongside the world of corporate food has developed. Thus we have seen a growth in the number of small specialty food producers and retailers, the re-invention of farmers' markets and street markets, a new interest by middle-class consumers in finding green, organic, traditional, local foods. Media interest fuelled by cookery and tourist programmes has contributed to the generation of a certain amount of cultural effervescence around small food producers or even alternative food practices, especially of a distinctive kind. This has gone hand in hand with a remarkable interest in food scares, which have been increasingly of global or

1 http://ec.europa.eu/public_opinion/index_en.htm

at least transnational nature, generating spirals of cultural panic and making evident the central role of risk communication in contemporary societies, but also contributing to consumers' increased interest in alternative and local food as a defensive and yet innovative strategy of risk-coping. The rise of the Slow Food movement – from Italy and increasingly internationally – testifies to the cultural power that new food movements can indeed marshal. The increasingly relevance of alternative food networks has been fuelled by the political investment of consumers and their attention to local issues/foods/territories and to small-scale economic circuits.

Social inequalities

10. Access to alternative food networks is often considered a major route to high quality food in EU countries, yet such access is highly differentiated across social classes, urban and rural consumers, and consumers of different ethnic origins. More broadly, a number of studies of EU consumers and food practices show that access to culturally and socially adequate food is mediated by cultural and economic capital, with a remarkably differentiated social map in terms of both actual choices and the structuration of long-term dispositions to choice (i.e. tastes). The perception of food quality also varies greatly across social classes and ethic groupings and the current context of global migrations and economic crisis tends to put such differences under stress, especially as shrinking economic resources are being differently managed by different households to cope with food needs in the context of other relevant expenses. There is thus the need to consider how food choices and food tastes are managed in the context of household choices as related to the capacity to reflect the household social standing, and what this may entail in terms of a shifting map of the social differentiation of access to adequate food.

An economic perspective

11. Cultural aspects play an important role in shaping dietary patterns and habits, but also social norms and ethical principles that drive food choices. Cultural differences in diets and values across the EU Member States should be addressed, as well as the changes in food preferences and dietary habits driven by globalisation and newly emerging localisation trends. Therefore, in the coming years, it will be crucial to study how information and communication policies impact the knowledge of people and their culture, so that food consumption choices and behaviours may be affected. Indeed, a change in consumer behaviour with regard to health and environmental sustainability may constitute a strong demand pull in driving changes in food supply chains, and an opportunity to change business models and business choices. On the other hand, the strong upward trend and increased volatility in global food prices make food and nutrition security a key priority of the EU policy agenda. In addition to the traditional issues related to food security at the global level, such as population growth, income distribution and resource constraints, the newly recognised challenges in the form of climate change, speculation and bio-energy demand for non-food uses of agricultural commodities have put further pressure on the existing EU agri-food system. Moreover, the EU food system is faced with a progressive slowdown of yield crop and productivity growth. The societal challenge related to food is a multidimensional issue. From an economic point of view we can distinguish between three main different dimensions: economics, environment, health and nutrition.

The economic dimension

12. This dimension points to the economic vulnerability of food systems, focusing especially on the current and future competitiveness of the EU's agri-food sector. In a context of increasing uncertainty and pressures coming from the international market, there is a need for a renewed interest in the role of R&D and innovation to contrast the productivity slow down of the last decades and the challenges coming from sustainability concerns. In this respect, a key role in pushing firms towards innovation is played by their exposure to international market. Indeed, despite the negative perceptions of the European public opinion towards globalisation, there is consolidated evidence that more market competition increases R&D investments and productivity growth. Thus, a better comprehension of these interrelationships represent a promising area for future research.

13. Despite the need of the public, politicians and scientists for agri-food data, despite knowledge, information, and dissemination management, no comprehensive database and platform are thus far available at the European level. The data is rather scattered in different contexts and locations

(databases) and hardly interlinked. The appropriate tool to provide this interlinked platform could be a Geographic Information System (GIS)-based Collaborative Research and Dissemination interactive web-based platform (CRDE). This platform serves to monitor, visualise, evaluate and analyse the multilayer agri-food related data, as well as to enable communication between scientific disciplines and dissemination of findings to a broader public and the policy level. Data can include spatial information, climate-ecological features and effects, production and consumption pattern, and other data such as health, education and nutrition related information, which can be retrieved in a gender-disaggregated way. This GIS and database module can be used to evaluate and monitor the multiple interrelationships and correlations between features (e.g. gender-disaggregated nutritional status), and spatial differences and temporal progress.

The environmental dimension

14. In order to reach a sustainable agri-food system which is a complex multi-functional eco-system producing different kinds of goods (not only food but also industrial, environmental, energy and cultural goods and services), changes of consumption patterns will be needed as technological solutions (alone) are not sufficient to tackle current global environmental challenges. Given the potential environmental impacts of food production and distribution, the analysis of consumer food choices becomes particularly important. Indeed, food consumption induces considerable negative externalities on society by, for example, contributing to 20-30% of the global warming potential in Europe. It is crucial to study policies aimed at promoting environmentally friendly food choices and capable of accounting for (and interacting with) society's values, consumers' bounded rationalities and the constraints related to modern lifestyles. Therefore, it will be important to analyse consumer preferences, behaviours and attitudes towards environmental sustainable food choices. Current environmental problems call for new paradigms of production, distribution and consumption, globally and locally. In this direction, in a context of increasing urbanisation, development paths towards smart cities - with proactive and empowered 'smart' citizens - should be devised. Current work on the study of consumer preferences and attitudes with regard to sustainability of food products and processes is not sufficiently deep and extensive as it has mainly focused on specific topics that involve particular segments of consumers and contexts. The topic of environmental sustainability in the agri-food system needs to be approached from a broader perspective that may include all consumers. Methodological work is also needed to develop tools to evaluate the sustainability of processes, products and innovations that are easily applicable and understandable by non-experts.

The health dimension

15. In recent years a rapid change in food consumption and lifestyles has occurred, resulting from the industrialisation, urbanisation, economic development, and globalisation of markets, that have effectively contributed to change food habits. Indeed, the globalisation in the food sector has led to important changes in food consumption patterns in the EU countries, shifting from traditional diets based on local foods to more diversified and multi-ethnic consumptions. This has led to an improvement of diets in some countries due to the diffusion of healthier food habits. On the other hand, for those countries in which the Mediterranean diet is widespread these changes have negatively modified the nutritional status. At the same time, a significant increase in diet-related diseases has been observed, which severely affects consumer health status and wellbeing. In this context, one of the challenges for the promotion of public health is to comprehend if there exists any link between the growth of these diseases and the changes in life styles and food patterns.

Conclusion

16. LERU supports the inclusion of the societal challenge "Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bio-economy" in Horizon 2020 and recommends that SSH research lines are built into its work programmes from the beginning. SSH researchers should be actively involved in the research agenda setting of the food challenge, taking part in the whole process, from problem formulation to implementation and evaluation.

17. LERU suggests the following SSH-related research pillars on this societal challenge in Horizon 2020:

Pillar 1: Historical and cultural context of foodways

This pillar should research the following topics with an interdisciplinary and comprehensive approach: the cultural and historical creation of specific foodways, the formation of cultural food practices and taboos, the gender role (with specific attention to women), and questions related to ethics.

Pillar 2: Sociological context of food in modern societies

This pillar should examine the crucial role of media communication in contemporary societies, questions related to food quality (re-localisation, consumers' anxieties, etc.), and social inequalities in food distribution.

Pillar 3: Economy and Environment

This pillar should be devoted to the understanding of the economic dimension (EU's agri-food sector, globalisation), the environmental dimension and the challenge of sustainability, and the consequences on consumer health.

Essential SSH Research for the Societal Challenge
Secure, clean and efficient energy

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the challenge 'Secure, clean and efficient energy' in Horizon 2020.

Edited by Professor Shearer West (University of Oxford), based on an original draft prepared by Professor Chris Llewellyn Smith (University of Oxford) with subsequent contributions by Professor Anik de Ribaupierre (Université de Genève), Professor Ortwin De Graefe (KU Leuven) and Professor Janette Webb (University of Edinburgh), with the support of Dr Katrien Maes, LERU Chief Policy Officer. *LERU explicitly wishes to thank the LERU Community of Social Sciences and Humanities and all individuals at the LERU member universities who provided valuable input for the paper and comments during the drafting process.*

Introduction

1. Meeting the world's future energy needs in an environmentally responsible but affordable manner is an enormous technical challenge. However, devising the policies, institutions, legislation and economic tools that will enable this to be done in an effective and politically, socially, culturally and ethically acceptable manner is at least as great if not a greater challenge. Research in social sciences and humanities is essential to probe these deeper issues and develop the tools for tackling them.

Energy Efficiency, Consumer Behaviour and the Energy Market

2. The first imperatives are to use energy more efficiently and to try to reduce and manage energy demand. Energy intensity [= (energy use)/GDP] fell worldwide by 1%/year from 1980 to 2010, but there is a potential to do very much better. An International Energy Agency (IEA) scenario that assumes that governments worldwide fulfil their pledges to moderate energy use and reduce carbon emissions (which few are on track to do), projects an annual decrease in energy intensity of 1.8%/year in the period to 2035, when energy use is projected to be 8% lower than expected if current policies are continued, but the IEA believes that technically a 20% decrease is possible.

3. Realising and maximising a huge potential gain in efficiency requires social sciences and humanities to help us understand the systemic economic, psychological and cultural issues that drive or underpin market and individual behaviour. Energy markets are structured by assumptions of perpetually rising demand for energy and assume more or less limitless resources, while governments continue to prioritise incentives for investment in new energy supply (including significant fossil fuel subsidies), over and above incentives for energy productivity/energy saving. There is, for example, no incentive for capture of waste heat from thermal generation of electricity or from industrial process heat. Furthermore, the dominant model of innovation in energy systems is supply-side technology-driven and thus marginalises the potential for significant energy saving through end-use innovation at meso-scale, where regional and local authorities are significant actors.

4. Social sciences and humanities also provide better understanding of how consumers behave and how their behaviour can be changed. Evaluating and understanding the 'rebound effect' (that savings resulting from increased energy efficiency can lead to increased consumption, and/or using the savings for other purposes that depend on energy use), devising economic and social incentives for private and public consumers to moderate their energy use, and strengthening regulations, for example on the performance of cars and buildings, are all areas that require the expertise of social sciences and humanities.

Transport Systems and Urban Planning: Governance and Business Models

5. Key factors in decreasing energy demand are improved design of buildings and planning of cities and of transport systems, as well as understanding

how to persuade people to walk, bicycle or use public rather than private transport. There are significant gaps in prevailing socio-technical solutions to retrofitting the urban environment, where most of the buildings are already in place. There are major opportunities in rapidly developing countries where low carbon development paths should be adopted as early as possible in planning expanding transport systems and cities. Avoiding the 'US model' of low density, car dependent cities will be critical for constraining carbon emissions growth in the mega cities in the developing world. Social, political and economic analyses are critical contributors to devising new governance and business models: it is far easier to prescribe what should happen than it is to explain how this is going to be brought about, by whom and with what shares of costs and benefits.

6. Managing demand is necessary to make better use of the increasingly diverse sources of energy (many intermittent), reduce the maximum load on the grid (thereby reducing investment costs), and allow for possible new large-scale uses, e.g. in electric cars (assuming drivers 'range anxiety' can be understood and overcome, if the range of electric vehicles does not increase substantially). Moderating demand will depend on devising suitable (real-time) pricing mechanisms and understanding consumers' responses to price and other incentives, while the possibility of allowing the utilities to switch on and off domestic appliances remotely, in order to smooth loads, raises freedom of information issues.

The Economics and Governance of Energy Markets

7. How to organise electricity and other energy markets raises multiple economic questions. How can markets be used to produce economically optimal solutions, while meeting the need to reduce the use of fossil fuels? What incentives are needed in electricity markets to ensure there is adequate capacity to provide the 'last kilowatt-hour' which is only needed for a few hours a year? How economically (and technically) to optimally incorporate inflexible intermittent sources with very low marginal costs? How to work out who benefits from energy storage (which will become increasingly necessary as the role of intermittent sources increases), and how it should be costed and who should pay?

8. Social sciences can also address questions about the range of governance models for sustainable energy systems, centred on the diverse configurations of markets, states and civil society already in use in energy provision. Empirical social science has long demonstrated that there is no simple dichotomy between 'planning' and 'markets' in governance of resources. Social science perspectives need to be represented in the debates in order to avoid capture by incumbent interests and political ideology.

Politics, Economics, Ethics and Energy Supply

9. Fossil fuels are likely to continue to dominate energy supply for an indefinite period. Understanding future oil gas and coal markets is therefore of enormous importance from the perspectives of future energy supply and security, global economics, and also geopolitics. The recent discovery of major oil and gas resources in East Africa has raised major questions for regional politics and economies and for global supply chains. Politics and energy resources are intimately linked in, for example, Russia and South America, while the possibility that in the next two decades the USA may become energy independent raises major economic and geopolitical questions (will Chinese aircraft carriers replace American ones in the Gulf?). Cheap shale gas looks set to give the USA a major competitive advantage, with knock-on effects worldwide. In Qatar gas liquefaction plants were built with an eye to the US market, but the gas is now supplying Europe and the Far East with major impacts and knock-on effects, e.g. huge uncertainties for the outlook for Russian gas exports, with potentially major economic, political and social implications. Coal in the USA is being undercut by gas, but is not remaining in the ground – it is being exported to the rest of the world (including Germany despite the government's green rhetoric). Prospects for shale gas are less well understood in Asia and in Europe, where public opposition, and differences in the ownership of mineral rights compared to the USA, may limit exploitation.

10. Devising the economic tools and international agreements that are needed to reduce carbon emissions is a challenge with economic, political, legal and ethical dimensions. Why are the UNFCC negotiations not working better? Is a carbon tax a better tool than cap and trade? Would border carbon adjustments (tariffs on the carbon content) on imports into (e.g.) the EU, where there is a carbon price, be acceptable under

WTO rules, and would it encourage others to start to price carbon (thus breaking the global gridlock in agreeing measures to reduce emissions)? Which parts of energy markets should be included? How should permits be allocated/auctioned? Energy law is of course important not only of the global scale and in climate negotiations, but also at the level of the EU (in both energy market rules and product regulation), and through national law and regulation right down to local planning.

11. Ethics are of great importance in devising equitable energy policies, and indeed dealing with resource stewardship generally. What responsibilities do developed countries (many of which used resources in the past as if there were no tomorrow) have to developing countries, which they are now trying to encourage to exercise restraint? How should we properly recognise the importance that we owe to future generations, in circumstances that are very difficult to predict? How should societies decide how much to invest in dealing with risks that are very difficult to evaluate? How to make sure that citizens are widely involved in taking these decisions in order to ensure their democratic legitimacy?

History, Education and Risk in Energy Security

12. Better understanding of the factors that determine perceptions of, and responses to, risk will be needed to improve the promotion of policies designed to ensure energy security and combat climate change. Understanding the forces that drive public opinion, and how they can be influenced through the arts and the media, will also be important. Detailed historical and discursive analyses of the ways in which human societies have responded to the rhetoric of unlimited energy accompanying the early and middle phases of the industrial revolution will yield better insight into the psychodynamics of citizens' addiction to energy. Such insights will be valuable to researchers and policy makers in its own right, but if mediated intelligently in formats that are attractive to the public at large, they can also have immediate salutary effects on the energy consumption of citizens today. Similarly, the powerful tradition of the dystopian imagination in European literature and culture, often involving a prescient understanding of scarcity-scenarios whose real relevance and impact was revealed only relatively recently, demands renewed research with a view to releasing its potential as a tool for information and education.

13. Education research is also crucial: the challenges we burden future generations with can be mediated to the emerging generations in our institutions for primary and secondary education. We must supply the teachers in these institutions with insights and tools that can achieve this mediation and in doing so contribute to a lessening of the burden we impose on the unborn. As the Humanities and Social Sciences have an important influence on the training of especially secondary school teachers, it is imperative that they be involved in developing packages that will effectively increase awareness of energy issues and help bring about change in consumer behaviour.

Conclusion

14. LERU supports the inclusion of the societal challenge "Secure, clean and efficient energy" in Horizon 2020 and recommends that SSH research lines are built into its work programmes from the beginning. SSH researchers should be actively involved in the research agenda setting of the energy challenge, taking part in the whole process, from problem formulation to implementation and evaluation.

15. The challenges Europe faces are fundamentally human in nature – understanding individual and collective human behaviour is therefore crucial. With respect to the energy challenge, Horizon 2020 should pursue the integrated inclusion of SSH questions as discussed in this Note. Research lines should include, among others, the following SSH perspectives:
    - understanding the systemic economic, psychological and cultural issues that drive market and individual behaviour, which are crucial for realising energy efficiency gains;
    - devising economic and social incentives for private and public consumers to moderate their energy use, and strengthening regulations;
    - understanding the economics and governance of sustainable energy markets in order to avoid capture by incumbent interests and political ideology;
    - devising the economic tools and international agreements that are needed to reduce carbon emissions, which is a challenge with economic, political, legal and ethical dimensions;
    - understanding the historical aspects of energy security, which is important to explain how human societies have in the past responded to the

rhetoric of unlimited energy;
- understanding the forces that drive public opinion and the powerful informational and educational role that the arts and the media have to play;
- including education research, which is necessary to successfully train school teachers with the right awareness and tools to educate the young.

16. Finally, it is important to realise that the energy challenge must not be addressed in isolation. It needs to be considered together with the challenges of providing sufficient food and water to allow everyone on the planet to live decent lives in decent environments. Here too social sciences and humanities have major roles to play. The real challenge is to combine the input of the social sciences, humanities, physical sciences, engineering and mathematics to tackle these problems holistically.

Essential SSH Research for the Societal Challenge
Smart, green and integrated transport

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the challenge 'Smart, Green and Integrated Transport' in Horizon 2020.

The first authors of the paper are Daniel Albalate, Germà Bel, Xavier Fageda, and Jordi Rosell[1] *with significant contributions from the LERU Community of Social Sciences and Humanities and with the support of Katrien Maes, LERU Chief Policy Officer.* *We explicitly wish to thank all individuals at the LERU member universities who provided valuable input for the paper and comments during the drafting process.*

Introduction

1. Mobility is often framed as a key factor in regional economic and social growth. It becomes a major regional issue when the consequent need for commuter services needs to be met. To meet the goals for growth in a sustainable way, public transport systems keep being set up, with often the disappointing outcome that the use of private vehicles increases faster.

2. Smart, green and integrated transportation are important requirements for governments to properly tackle the most important questions related to transportation, which means also issues related to the growth of cities and the well-being of their residents. Effective strategies to improve mobility in cities in environmentally friendly ways, which are also conducive to improve economic and cultural activity and attractiveness, can use a wide set of tools and policy measures. Among these, some seem to be especially relevant taking into account their effects, which in some cases have already been evaluated and include variable speed limits, congestion charges, reform of public transit management and funding, and integration of transportation modes and supply to increase attractiveness of emerging demands. These points are further developed below.

Making mobility more environmentally friendly

3. Transport emissions represent the largest portion of all air pollution, especially in urban areas. All problems of pollution emissions can involve two separate sets of issues: technical engineering issues for controlling pollution, and policy issues.

4. Numerous public policies have been implemented or proposed for pollutants control and abatement. The European Union establishes air pollution limits in order to prevent, avoid or reduce harmful effects on public health and the environment as a whole. Indeed Directive 96/62/EC of 27 September 1996, on ambient air quality assessment and management, sets out to define plans and programmes for improving air quality levels in areas where they exceed the legislative reference. Under policy issues, the main focuses are to reduce vehicle fuel intensity and to reduce vehicle use per capita.

5. Following EU guidelines and mandates, various options are available to policymakers. Technological changes have favoured the emergence of many pollution control mechanisms, and several of these policies have already been evaluated. However, transferring these local experiences to other areas- where substantial benefits could be expected- should be a priority to generalise these policies in European conurbations.

6. An illustrative example of the synergies between social science and technological progress is the variable speed limit in European congested areas. New technologies are able to monitor extensive areas and change the speed limit according to traffic congestion situations, possible incidents involving road safety (accidents, incidents, road works, maintenance work, etc.), situations of pollution or poor weather conditions (rain, fog, wind, etc.). The implementation of a system of variable speed limits generally entails an improvement in uniformity of traffic flows, the aver-

1 Research group on transport economics at the Universitat de Barcelona.

age speed decreases and so does its variability and the number of accelerations. Thanks to technological changes, we are able to adapt the speed to road conditions, leaving behind fixed speed limits.

7. Optimising speed limits on the roads is one such strategy for reducing the negative environmental effects of traffic, as well as cutting fuel consumption. While there exist many forms of vehicle emissions abatement policies, and others have been proposed, formal measures and methods for assessing the relative efficiency and effectiveness of these alternatives are needed.

Making mobility more sustainable and efficient

8. Urban and metropolitan congestion is still one increasing concern and challenge for local and regional authorities as well. Traditional approaches which involve enlarging road capacity or investing in new roads have not been successful enough – at least in the long run - to overcome the inefficiency and social cost wasted. Parking restrictions and pricing in central business areas, access prohibitions to some historical areas, reserved lanes for public transportation, or vehicle taxes on pollution and road use do not attack directly the sources of the inefficiency. Congestion charges (variable tolls) sensitive to traffic changes can eliminate this inefficiency. Flat charges or tolls that vary according to different peak and valley periods are the main strategies that try to approximate efficient pricing. Technology advances and developments, however, now allow transferring from second best pricing to first best pricing avoiding the old mechanisms based on manual payments and toll booths. The promotion of new technological developments together with traffic management strategies seems a safe road for the future cure of urban congestion.

9. In spite of the theoretical and practical superiority of road pricing as a tool to fight congestion the implementation of these forms is scarce in European cities. Political motivations are behind this mismatch between the robustness of theory and its scarce application. Public acceptance to road pricing is a big barrier for policy makers. Insights in the psychology of behaviour are critical for understanding this problem. In particular, theories and research focusing on the social dilemma paradigm – the conflict between individual and collective gain – are essential to understand current choice behaviour and options for behaviour change in a sustainable way. Trust, uncertainty, habits, heuristic processing of alternatives, moral considerations, are some of the psychological concepts that can fruitfully be employed to increase our knowledge and to design interventions for behaviour change. Road pricing has proven to be a very difficult intervention with regard to its political and public acceptability. It needs extensive scientific and in particular psychological expertise if it is to be implemented successfully.

10. As stated, policies promoting public transportation have proven to be relatively effective in providing an alternative to private transport, but are also insufficient as a cure for urban congestion in large metropolitan areas. Nonetheless, further progress can be made by means of reforming the management, design and funding of public transit facilities and service. Public transport needs to be put forward to tackle the challenges for urban mobility currently faced by our agglomeration areas, instead of emphasising construction of new high capacity roads. Transport planning should reflect the multiple objectives that can be addressed by public transit, including mobility and efficiency (reduced traffic congestion, savings on road and parking facilities, consumer savings, crash reductions, environmental protection, and more efficient land use).

11. Public transportation systems reduce the necessity for single occupancy vehicle trips, reduce the production of automobile emissions, increase incidental physical activity, and provide necessary transportation access for people with physical, economic, or other limitations that impede access to and use of a single occupancy motor vehicle.

12. Public transport is a subsidised activity, and many governments confront the challenge to make mobility and the environment of large urban conurbations more sustainable, and to improve the efficiency of the system at the same time. The public transportation system in a big city has major economic implications with regard to the competitiveness of the urban area. It is often overlooked that a public transport system has significant implications for investment attraction and productivity of an area, which is why improvements in the system can bring huge profits to the city and surrounding area. The potential for private delivery of public services has made of outsourcing an important dilemma faced by public managers. But the effects of alternative

forms of service delivery in public transit are not yet very well known. There are many ways to improve public transit service: improved rider information with new technologies, transit-oriented development and smart growth, which result in land use patterns more suitable for transit transportation, or the use of innovative marketing techniques. Success depends on the willingness of private companies to provide these services, and on public awareness of the attractiveness of these services. Small scale experiments that take into account human tendencies of risk aversion, affective decision making, and salience of peer group behaviour could provide the insights needed to make these services successful.

13. Previous paragraphs have indicated that, besides legal and economic questions, a green transportation policy will also have to take much more account of human behaviour and its backgrounds. There is clearly a great need for the implementation of insights from psychology and the social sciences. Developing a green transportation policy implies changing the human mindset with regard to transportation facilities. Even if an adequate economic model would be developed, little change would occur unless one also understands that all the changes have to take place within a social context, in which there are individuals whose behaviour is to be understood.

14. Besides these fundamental issues urging for applicable knowledge, we see more practical problems that need a solution: smart strategies for efficient, pleasant and sustainable transport are increasingly in need of linguistic solutions adapted to the needs of mobile citizens of varying backgrounds. It is prohibitively expensive to duplicate all information in all official European languages. So local and national-level public and private transport requires multilingual instructions in an accessible form, with combinations of scanning devices and audio translations becoming desirable alternatives to short printed texts in perhaps just one local language. Methodological innovations in linguistic research to cater to the needs of smart solutions for users are needed.

15. Although transportation activities may have detrimental effects on social welfare in terms of pollution, accidents, congestion and so on, its contribution to the economic development of territories may be substantial. Indeed, the challenge of smart, green and integrated transport also needs to emphasise changes in mobility and its consequences in terms of economic development.

Making mobility more appropriate for increasing globalisation demands

16. Globalisation has implied an increase in the flow of goods and people between countries and an increase in the length of the trips. In this context, European policies must support those transport infrastructures that enhance the levels of international connectivity of an urban area. Another important change in the pattern of international mobility is the increasing importance of the movement of people.

17. Globalisation has been possible due to a reduction in the cost of moving goods. This reduction is a consequence of the liberalisation of international trade, technological advances in transportation and the increased valued added per tonne moved. On the other hand, two factors explain why moving people is still costly but important. Costs depend mainly on the travel time's opportunity cost, which increases with income. But the advances in information technologies have not reduced the importance of face-to-face contacts, which have unique advantages as a means of communication, coordination and motivation. The main factor for cooperation is trust. Interpersonal trust strongly benefits from direct personal contact. Furthermore, given that codified information is available everywhere, the information influencing the location choices of firms is such that it can be transmitted only by face-to-face contact.

18. Urban areas that pretend to attract firms from knowledge-intensive sectors must offer high levels of international connectivity through their transport infrastructures. Here, the role of airports is crucial. Transport policies in European urban areas should help in the development of direct air links from European urban areas to the main business centres of all over the world. Policies related to the financing of new capacity in those airports with excess of demand, competition, pricing strategies and the rules guiding the access of airlines to airports must have this goal in mind.

19. Furthermore, the arrival of tourists from abroad has become an essential driver of development for many European cities. A large proportion of international tourists use airports to reach their final destinations. In this context, the concept of multimodality may play a central role in European transport policies. The concept of multimodal transportation implies to exploitation of complementarities rather than competition between transport modes. Here, it is

essential to guarantee easy access to airports by surface transportation modes (trains, buses, etc.) but the synergies between air and maritime transportation are also clear in some coastal cities. The case of Barcelona illustrates the advantages of exploiting the complementarities between air and maritime transportation. The port of Barcelona is currently one of the ports with the largest amount of cruise passengers in the world. Only the three ports around Florida that serve the Caribbean area have more cruise passengers. The port of Barcelona partly owes its success to the increasing number of direct air links that the airport of Barcelona offers to US cities. Indeed, an important proportion of cruise passengers in Barcelona's port come from that country.

20. Overall, competition between urban areas from all over the world to attract knowledge-intensive activities and/or to become a top tourist destination is fierce. Several location factors are relevant here, such as the size of the urban area, the geographical situation, quality of life, cultural and leisure amenities, skills of workers and so on. However, appropriate transport policies are an essential ingredient for a success story.

Conclusion

21. LERU supports the inclusion of the societal challenge "Smart, Green and Integrated Transport" in Horizon 2020 and recommends that SSH research lines are built into its work programmes from the beginning. SSH researchers should be actively involved in the research agenda setting of the energy challenge, taking part in the whole process, from problem formulation to implementation and evaluation.

22. Good diagnosis, sound theories and well-designed policies are necessary ingredients for a successful strategy for meeting the Smart, Green and Integrated Transport Challenge. But a wider view is needed. To further understand if technologies or new systems of transportation will become successful we need thorough understanding of people's everyday habits and beliefs as well as their attitudes towards different modes of transportation. Authorities offering public transport often strive to improve the comfort of the transport offered, but previous research suggests that service providers often have a fragmented and at times erroneous understanding of commuters' wants and needs. We need a far better understanding of consumers' perspectives on commuting. How does commuting link into other everyday practices? How do people's routines limit their ability to use collective traffic, or how do they develop routines that can make the use of public transportation melt seamlessly into the rhythm of their daily lives? How might regional planners and employers work together to rethink the rhythm of working life in a manner that might spread the flow of commuters more evenly over the course of the day? Many of these questions essentially are of a social and psychological nature and are in need of solid answers. It is clear that technical solutions alone will not provide a successful transition to a sustainable future. Multidisciplinary visions and approaches are required, encompassing a variety of disciplines in the social sciences and humanities.

Essential SSH Research for the Societal Challenges
Fighting and adapting to climate change

With this Note[1] LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the Horizon 2020 programme addressing the societal challenge on climate change.

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Introduction

1. For more than 20 years now, policies and actions have been developed to combat the phenomenon of climate change: mitigation measures were proposed and adopted to reduce the emissions of greenhouse gases; adaptation measures were proposed and adopted to deal with the consequences of climate change. However, it is clear that the battle on climate change is far from won. Additional policies and measures will be needed, which will have to be based on new scientific insights, including those from the social sciences and humanities (SSH).

2. Responding to climate change is not only a matter of infrastructural adjustments, like building dikes, or technical innovations such as implementing renewable energies. Instead, it is a complex process of societal transformations that should be studied as such. The contribution of the social sciences and humanities is crucial to understanding these processes of change. Most changes in society develop in small steps within existing structures. Climate change requires a replacement of existing structures and orders by something new: a transformation. For instance, there is a need to transform energy systems away from the dependence on fossil fuels and a need to protect citizens, business, infrastructure and nature from climate change risks. The concept of 'societal transformation' refers to important alterations of society's systemic characteristics and encompasses social, cultural, technological, political, economic and legal change.

3. Economists and lawyers have played a significant role in climate research until now: economists have emphasised the necessity of acting now and developed a market-based approach vis-a-vis climate change, inter alia by developing policy instruments such as carbon markets, emission rights and tax incentives; lawyers have been instrumental in developing legal frameworks like the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the EU Emission Trading Scheme. It is clear that these economic and legal approaches need revision, considering their relatively limited success so far. Is a dominant market-based approach still opportune in times of economic crisis, where emission rights have become pure (and more or less worthless) financial instruments that have lost any link with environmental protection? Is a global legal instrument like the Kyoto Protocol still a feasible option or can regional agreements be an alternative? Next to these issues and questions, more attention should be paid to the efforts on climate adaptation and associated processes of societal transformation.

4. A future climate change policy will also have to take much more account of other SSH disciplines, together with the legal and economic questions and frameworks. These disciplines include - inter alia - sociology, anthropology, public administration, human geography, planning, philosophy, psychology, history and cultural studies. Clearly, a change in societal structures and human behaviour will

1 This Note is partly based on: *Societal transformations in the face of climate change; research priorities for the next decade*. Driessen, P.P.J. et al., 2013.

be crucial in overcoming the challenges posed by climate change. Moreover, intensive cooperation between different scientific disciplines in this field is a key challenge. Connecting different disciplinary approaches in social and natural sciences will lead to research efforts of higher scientific value. A lot of research on the relevance of specific responses to climate change already takes place in interdisciplinary research arenas, such as science, technology and society (STS), ecological economics, environmental studies, environmental sociology, and environmental law. Besides, new research communities have developed during the last decade, such as Earth System Governance, Future Earth, the Malta Legal Forum on Adaptation to Climate Change, and the Belmont Forum.

5. SSH research should not only be of scientific value, but also action-oriented and contribute to the development and implementation of successful mitigation and adaptation policies on the international, national, regional and local levels. A better interaction between science and society could increase the relevance of climate research and will contribute to a better application of knowledge and policy recommendations. To this end, deliberations with knowledge users should be intensified.

6. LERU would like to stress that the purpose of this Note is not only to include essential SSH research into the Horizon 2020 programme on fighting and adapting to climate change, but also to advocate the inclusion of SSH researchers in all relevant committees so as to ensure that several perspectives are adopted on all the subtopics.

Causes and impacts of climate change

7. The natural sciences have a dominant position in the analysis of the processes and causes of global climate change. They actively work on the understanding of past and future climate change based on observations and models. Without going into detail, it is clear that anthropogenic causation plays a substantial role in the recent changes in average global temperature. SSH can contribute to new insights and understandings of the societal aspects of this global phenomenon. Relations between globalizing economies, resource extraction regimes, population dynamics and carbon dioxide emissions are very relevant in this respect. The same goes for the philosophical and legal question of how to (re) distribute climate change-related risks among the several societal actors. Also the social factors that drive excessive production and consumption patterns leading to high-throughput and high-waste economies have to be investigated thoroughly.

8. So far, progress in reducing greenhouse gas emissions at a global scale is limited. This has fostered concern about climate change impacts and has contributed to a growing attention to vulnerability of regions and sectors, adaptation measures and alternative socio-economic pathways and trajectories. Global climate change has and can have tremendous impacts on societies. The growing body of knowledge on climate change and its causes is not matched by an equivalent understanding of the societal impacts it poses nor of the ways society can deal with or react to these impacts. Disasters, including floods, heat waves, and droughts, are likely to happen more often in the near future. Climate change can have important impacts on food production, on fresh water supply, on resources availability, on human health and on the functioning of infrastructures and networks. Highly urbanised regions are most vulnerable to climate change, but preparedness and adaptive capacity differ between regions and sectors and between the developed and developing countries. Economic losses from climate related disasters will probably increase, but at the same time we face a huge temporal and spatial variability. Economic losses associated with weather and climate events are higher in developed countries, whereas deaths from natural disasters occur more often in developing countries (IPCC, 2012). There is an urgent need to intensify SSH research on the societal impacts of climate change and the consequences for regions, sectors, individuals and vulnerable groups in our society as well as on the ways to react to these impacts. Climate change is also expected to exacerbate existing social inequalities, posing a challenge to social cohesion in Europe.

Transformation to a green economy

9. A green economy that decouples growth from the use of natural resources is essential to facing the climate challenge, yet the socio-economic implications it will hold for future societies are less clear. Similar to climate models based in the natural sciences, there is a need to develop credible scenarios for societal changes in response to or because of climate change. This includes the integration of

climate impact scenarios and socio-economic scenarios (Van Druenen et al., 2012). Specifically, the dynamics of dominant modes of production and consumption, lifestyles, livelihood strategies, global trade, migration, and cultural orientations need to be explored in relation to climate impacts on different scales (from the global to the local) and for different development pathways.

10. The mechanisms by which a transformation to a green economy may occur are currently underexplored. Although socio-technical innovations will prove vital to this transformation, these will not suffice alone. Rather, the transformation will be embedded in broader processes of societal change and more insight is needed into how these come about. As any societal transformation will require action by governments, markets, and civil societies, there is a need for contributions from different disciplines within the SSH research community. For example, contributions from public administration can reveal how governments can stimulate transformation processes and where they may slow down these processes. Innovation studies can highlight barriers and drivers in the adoption process of new technologies and innovations as they point to the importance of interactions between dynamics at niche, regime and landscape level. Sociological and psychological contributions can provide insight into how consumers change their practices and point to the importance of sustainable lifestyles, amongst others. There is a need for dialogue between these and other contributions from the SSH field to gain a more balanced understanding of factors that may drive or slow down a transformation to the green economy.

11. Societal transformations are not driven by climate change alone. There are other - perhaps even more pressing - issues that drive societal change. Important environmental issues include biodiversity loss, freshwater scarcity, chemical pollution, land use change, ocean acidification, and stratospheric ozone depletion, amongst others (UNEP, 2012). Economic issues are also especially relevant, as economic problems may hamper investment in new technologies that are necessary for the transformation to a new economy, and may, due to issues such as unemployment, lead to social unrest and unexpected migrations patterns. Moreover, economic growth that is not decoupled from intensive resource use may free up resources towards innovation but can also drive up greenhouse gas (GHG) emissions beyond sustainability levels. In addition, wider trends of societal change, such as globalisation, urbanisation, demographic shifts, changes in world market structures, and changes in energy demand and supply affect societies' capacity to respond. SSH research can shed light on the interconnectedness of the social causes of these problems, explain the complex trajectories and policies that have led to unsustainable lifestyles, draw lessons from earlier processes of societal change, and find solutions (Hackmann and St. Clair, 2012).

12. Because climate change will not always be the main driver for societal change, the transformation to a green economy should address broader societal problems. It is often seen that climate policies need to compete with other societal issues that are deemed more urgent in the short term and hence lose out. A way forward is the strategy of mainstreaming climate mitigation and adaptation policies in all socio-economic sectors of society, such as water, energy, agriculture, etc. To do so however, research is needed into how climate objectives can be aligned with other socio-economic objectives. As technological innovations cannot be considered sufficient to achieve 'win-win' scenarios for each case, this may involve the reconsidering and balancing of specific socio-economic objectives, for example as a trade-off between renewable energy and user freedom in smart energy grids.

Ethical and social justice issues

13. For many, climate change must be understood essentially as a civilisation-challenging ethical and moral problem[2]: it is an ethical problem because some people and nations more than others are responsible for causing this problem, the consequences to those who will be most harmed from climate change are potentially catastrophic, and those most vulnerable to climate change often cannot protect themselves from harsh climate impacts; their best hope is that those causing the problem will respond to their ethical duties to reduce their greenhouse gas emissions to their fair share of safe global emissions or that they will help the most vulnerable to adapt to climate change. Climate change is also an ethical

2 See for more info: http://blogs.law.widener.edu/climate/

problem as it has profound practical consequences for policy formation. Yet the ethical implications of policy responses traditionally have been problematic in policy debates: despite 20 years of international negotiations to come up with a global solution to climate change under the United Nations Framework Convention on Climate Change, most nations have failed to adopt domestic policy responses consistent with their ethical and moral obligations. Further research and translation into policy decisions of these issues will be needed to come to a balanced climate change policy.

14. So far, discussions related to issues of social justice in climate change have most often revolved around the sharing and distribution of burdens and benefits among nations or regions based on different interpretations of the idea of common but differentiated responsibilities (typically represented by discussions concerning the Global North and South). Research on vulnerability and climate justice should, however, not be limited to the global and regional level. Specifically, research should also pay attention to issues of climate justice at the local level, addressing the question who wins and who loses within a certain society in the process of transforming to a climate neutral and climate resilient society? For instance, heat waves are known to result in excess morbidity and mortality within socially distressed and deprived urban groups. Human geographers, anthropologists and legal and governance scholars amongst others can contribute to understanding the causes and the resolutions to distributive inequalities.

15. In addition to distributive justice, issues of procedural justice are also in need of research, particularly at the local level where the interests, resources and knowledge of various stakeholders can be utilised to inform policy making and implementation. We need to acquire a better understanding of how participation of different societal stakeholder groups in decision-making processes for societal transformations takes place, if at all. Which forms of participation, ranging from formal consultation to interactive planning and citizen juries for instance, are applied in practice and how are these participation processes moderated and facilitated? Furthermore, research should address the effectiveness and legitimacy of these decision-making processes, aiming to understand how the voice of those most affected is taken into account. SSH disciplines including, but not limited to, law, public administration and organisational sciences and psychology can provide valuable insights into the human interactions in processes of participation, deliberation and negotiation.

Cultural dimensions of climate change

16. Culture is an important factor to understanding how societies deal with and respond to climate change, yet has until recently been underexposed as such (Adger et al., 2012). How climate risks and impacts are perceived by different segments of society and across regions and cultures over the world can differ significantly and this determines to a large extent if and in what manner action is taken. Specifically, different communities value different things and moreover embed these values in different discourses (O'Brien et al., 2007). These discourses differ in terms of (a) the normative expectations embodied in their implicit images of the future (alarmist, optimistic, business as usual); (b) the direction and degree to which they transform society (frugality, shifts to a greener economy, de-growth, de-modernisation, decoupling); (c) the degree to which action perspectives are created or blocked for different groups in society; and (d) the degree to which climate change is seen either as an isolated issue or as being connected to other value systems and associated discourses (e.g. religious or moral obligations, energy discourses, etc.). Any attempt at effective and legitimate climate action needs to take these values into account.

17. Different cultural values do not only shape the societal valuation of climate change; discourses on climate change also have the power to reshape cultural identities, the way we think about society, and how we envision the role of humanity on earth. In order to understand cultural and social sense-making in relation to climate change, we therefore need to draw on a broad range of SSH research – including sociology, anthropology, history, literature, and cultural studies – in order to grasp the impact that climate change has on the articulation of social identities, regional cultures, and universal values. This is important from the perspective of respecting and maintaining cultural diversity in a globalising world. Moreover, studying cultural meanings of climate change can bring a deeper understanding of the perceived (il)legitimacy of climate science and policy in different cultural contexts and bring forward alternative articulations of and differentiated responses to climate change for specific cultural contexts.
18. Cultural and historical scholarship further underscores the impact of cultural practice on the ways

humans have responded to the effects of human behaviour on the environment. As one instance among many, while the crucial role of British Romantic poets like Wordsworth in the formation of public concern for the conservation of the countryside has been well documented, there are countless other cases of emergent and established cultural environmentalism that deserve close scrutiny. Apart from their use in modelling the psychodynamics of societies facing environmental challenges, cases such as these can also prove to be powerful tools to communicate the urgency of climate concerns to the wider public. An example would be the development of interactive digital platforms allowing European citizens to access the history of cultural environmentalism on a digital map and to visit simulations of future change to the same environment. Such a platform would at once do sterling service as a repository of data enabling new and innovative SSH research.

19. Concepts such as resilience, vulnerability, adaptive capacity, (ir)reversibility, lock-in, adaptation and mitigation are gaining an increasingly central role in debates of climate change, yet their meaning often remains open and contingent upon socio-cultural contexts. For example, in scientific circles the concept of 'vulnerability' denotes the sum of the impacts of climate change minus adaptation measures whereas in policy circles it is more often used to describe the potential for adaptive capacity of a given societal unit. Another example is the concept of 'resilience' which is gaining currency, but remains problematic in its translation from ecology to society (Davoudi, 2012). Several other concepts, such as 'tipping points', 'limits to growth' and 'green economy' are part of the climate debate and remain open to contestations. Different interpretations of these concepts in different social, cultural and disciplinary contexts lead to different assessments of the scope and urgency of the challenges that climate change poses and hence will directly affect how policies are formulated and what actions are taken. In order to disentangle the ambiguity of these concepts, there is a need for SSH studies to situate these in the social and cultural contexts in which they are used. Doing so will bring conceptual clarity and allow stronger linkages between the natural impacts of climate change and the socio-economic issues that these will bring about or exacerbate.

Governance of climate mitigation and adaptation

20. To establish low carbon, sustainable and resilient societies, it is necessary that various societal actors, including business, public authorities, civil society organisations and citizens transform their practices. Such transformations will always require at least some kind of governing. The nature of governance is, however, fiercely debated both in academic literature and in practice (Mees et al., 2012; Bulkeley and Newell, 2010; Lange et al., 2013). Who governs? Who is being governed? Why? And to what effect? We therefore hold that academic studies are needed analysing how governance for meeting the climate challenge actually takes place and which modes of governance can be distinguished in practice. Public administration scholars are excellently equipped to study modes of governance, but also other SSH disciplines can contribute to the analyses. For instance, sociologists and historians could help to study and conceptualise shifts in modes of governance.

21. The notion of governance is also a normative issue as we seek to answer the question: what is good governance? Insight is needed into the question how we can evaluate the legitimacy, efficiency and effectiveness of different modes of governance. With regard to the criteria of efficiency and effectiveness, it is necessary to challenge and nuance the assumption inherent in much mainstream governance literature that more collaborative and deliberative modes of governance would be most instrumental to tackling the climate challenge. It is often stated that these so-called 'new' modes of governance are better equipped for dealing with complex, multi-scale, multi-sector and long-term problems. In practice, however, these modes of governance often occur next to more 'classical' state-centred modes of environmental governance. Moreover, the presumed success of 'new' governance has hardly been tested by empirical research. Nation states and international political institutions still turn out to have considerable governance capacity. When it comes to legitimacy, insight is needed in how different governance processes enable or constrain inclusive participation, deliberation, transparency and accountability. The role and responsibilities of public authorities, networks, market and civil societies in these processes should be studied, as well as the role of specific types of policy instruments and measures. The evaluation of different modes of governance will benefit tremendously from the complementary analyses and

perspectives that can be provided by various SSH disciplines, including – but not limited to – public administration scholars, lawyers and economists.

22. Studies of climate governance have hitherto had a strong focus on processes of international regime development and the relationship between nation states and international institutions (Biermann, 2007). It turns out that other actors and scales are extremely important as well. Important roles are played by cities, regional and transnational networks as well as by public and private parties (Termeer et al., 2011). Furthermore, interactions between networks and scales do take place. This asks for the inclusion of additional disciplinary perspectives next to those from public administration and political sciences, for instance, human geography and planning.

23. Especially climate change adaptation, through its very nature, can be seen as a multi-level and multi-sector policy issue. A proper understanding of the governance of climate change adaptation requires the consideration of various relevant sectors as well as an inclusion of the socio-ecological system, and the regional and local level. Mainstreaming climate change adaptation into EU policies and programmes is a spearhead of the EC's recently launched adaptation strategy (EC, 2013). However, the notion of mainstreaming should be critically scrutinised and the merits of mainstreaming vis-a-vis the establishment of specific adaptation policies needs to be assessed continuously.

24. The climate challenge truly is a long-term policy problem. Actions that are taken (or not taken) now may have an impact in a distant future due to path dependency and lock-in. The costs and benefits of actions are often uncertain and actions aimed at a long-term future are dependent on political and public support, policy windows and available budgets in the present. Hence, policies for facing the climate issue require a continuous linking of long-term perspectives and short-term actions. Again, various disciplines might contribute to the analysis of this issue, amongst others economists and historians studying past transformations.

Finance and economic tools

25. In international climate regime negotiations, developed countries have committed themselves to the provision of resources enabling developing countries to address the climate challenge. However, the extent to which these resources are actually becoming available is lagging behind by what is pledged. This raises the question of which mechanisms can achieve a fairer sharing of the financial burden of climate change mitigation (Dellink et al., 2009), a question not only for economists, but also for lawyers, philosophers and sociologists, amongst others.

26. The private sector has been recognised as a crucial actor for establishing both climate change adaptation and mitigation. The potential of the private sector is very high, but this potential is not yet realised. Insight is needed into the question through which mechanisms the role of the private sector can be strengthened. At the same time, within the private sector many negative contributions to the climate challenge can be found. Companies often play a role in unsustainable economic trends. Such trends should not only be analysed critically, but we are also in need of a framework explaining how more or less sustainable modes of financing come about, stabilise and potentially can be modulated or stopped.

27. We are witnessing a quest for policies that promise to deliver co-benefits between climate policy and other goals. Win-win and cost-effective solutions are sought for. It is however not always clear to what extent such solutions can actually be achieved and whether or not there are unforeseen side effects to policies or trade-offs between different policy options. The expertise of economists should therefore be complemented with that of various other SSH disciplines to shed light on these issues.

28. Low carbon energy technologies are a crucial element in facing the climate challenge. However, there are many questions as to which actors should finance or otherwise endorse research, development, demonstration, and market uptake of these technologies and in which stages of development. A fundamental question is which aspects of innovation and diffusion processes can best be financed through public funding, which ones through market mechanisms and which ones through cooperative processes.

29. Climate change adaptation is expected to be very costly. The EC's adaptation strategy has therefore identified as a crucial action the promotion of insurance and other financial products for resilient investment and business decisions. The question of who pays and who should pay for climate change

adaptation comes to the fore. Also the appropriate economic principle behind financing climate change adaptation in different sectors, contexts and at different levels is yet to be determined. Should this, for instance, be based on solidarity, on risks taken by citizens, or on costs and benefits? These questions raise the follow up questions of what would be the most desirable role for specific instruments (e.g. insurance), how the cost-effectiveness of measures can be determined and which measures to select.

Science-society interactions

30. Climate science influences the climate policy debate and vice versa, but their relationship is often problematic and highly politicised as became blatantly clear after the launch of the fourth IPCC report. We need a better understanding of the role and influence of science in decisions underlying climate policies. This involves an understanding of the key issues related to science-society interactions (SSIs) and how these can be bridged, such as different cultures and time frames of scientists and policy makers, and the selective presentation and use of knowledge (Hegger et al., 2012). Ultimately we need to know what constitutes credible and salient knowledge and legitimate knowledge production processes for informing climate mitigation and adaptation policies (Cash et al., 2003). Scholars from the sociology of knowledge as well as from the field of science and technology policy studies have a role in contributing to these issues.

31. Research is needed on the use and effectiveness of distinctive SSI modes, such as the different methods for the co-production of knowledge by scientists, policy makers and other stakeholders. Furthermore, we need to understand to what extent new SSI modes such as boundary organisations and knowledge brokers are used and with what outcomes (Pielke, 2007).

32. Societal transformations towards a climate-neutral and resilient society require a diversified and integrated research agenda that includes roles for natural and social sciences and humanities (Patwardan et al., 2009). We argue that social scientists play a prominent role in setting and integrating the research agenda for climate policy and societal transformations. In essence, climate change is an issue of power, politics, interests and instruments, and social scientists can contribute to framing it as such. Social scientists are thus crucial in initiating and stimulating debates about societal transformations.

LERU suggests the following SSH-related research lines on climate change in Horizon 2020:

Pillar 1: Causes and impacts of climate change

33. Research is needed to enhance the understanding of the relation between globalising and emerging economies and carbon dioxide emissions, and the societal factors that drive production and consumption patterns.

34. There is a need for scientific approaches that integrate physical climate science with knowledge about the variety of impacts of climate change processes on human and natural systems, especially vulnerabilities and threats to human health and wellbeing from changing climate patterns.

35. Research is needed on the extent to which social inequalities are structured and exacerbated by climate change-induced disasters in both industrial and industrialising countries.

36. There is a need for a better understanding of the implications of climate change on national and transnational mobilisations and conflicts associated with resource scarcity and resource allocation.

Pillar 2: Transformation to a green economy

37. Credible socio-economic scenarios need to be developed that show different pathways towards a green economy. In addition, these scenarios need to be integrated with natural science based climate impact scenarios.

38. The dynamic linkages between different modes of production and consumption, lifestyles, livelihood strategies, global trade, migration, with climate impacts scenarios require study.

39. The importance and need for societal transformations beyond socio-technical innovations need to be recognised and made subject of research. We need a dialogue between multiple SSH contributions to gain a balanced understanding of the factors that may drive or slow down a transformation to a green economy.

40. The configuration of new actor networks in the transformation to a green economy should be

explored. Particularly focus should be placed on processes of societal acceptance and justification of transformation processes.

41. Current environmental, social, and economic drivers of change that do not directly result from climate change should receive more attention in research on societal transformations. Moreover, research should lead to lessons being drawn from historical examples of societal transformations.

42. Mainstreaming strategies look promising, but their potential so far remains unexplored. To promote mainstreaming, research is needed into how climate objectives can be aligned with other socio-economic objectives or how an optimal trade-off between climate and other societal objectives can be achieved.

Pillar 3: Ethical and social justice issues

43. Horizon 2020 should support research on how to balance the rights and responsibilities of the developed and developing world and how to manage our responsibility to future generations who must live with a climate we are shaping today.

44. Research is also needed on how to ensure that ethical dilemmas related to climate change are introduced and sustained within the public debate, in order to widely involve citizens in the decision-making processes and in view of democratic legitimacy.

45. Research is needed to better understand the social dimensions of differential vulnerabilities to climate impacts of different sectors and geographies in society, and how these can be alleviated.

46. A better understanding is needed of the distributive and procedural inequalities related to climate policies at different geographical and temporal scales and related to different stakeholders and actors to develop mechanisms to deal with these inequalities in a legitimate and effective way.

Pillar 4: Cultural dimensions of climate change

47. The way in which different cultural discourses interpret the risks and impacts of climate change deserves enquiry as any effective and legitimate climate action will need to take these into account.

48. We need better insight into how local identities, regional cultures, and universal values are transformed by discourses on climate change. This can bring forward different articulations of climate risks and impacts in different cultures, promote a more culturally diverse uptake of climate change issues, and broaden societal acceptance of climate science.

49. Historical and cultural linkages between how humans have interacted with the environment in the past and how they currently respond to climate change need to be highlighted through research and dissemination activities. Doing so does not only preserve cultural heritage, but can also stimulate new innovations.

50. There is a need for SSH research to situate climate change related concepts - such as resilience and vulnerability – into socio-cultural contexts in order to bring conceptual clarity and to allow stronger linkages between the natural impacts of climate change and the socio-economic issues that these will bring about or exacerbate.

Pillar 5: Governance of climate mitigation and adaptation

51. Research is needed to improve the empirical knowledge base of how governance for meeting the climate challenge actually take place in order to be able to improve the current modes of governance. A systematic overview has to be made, indicating which modes of governance (e.g. hierarchical governance, co-governance, self-governance, network governance) can be found in which contexts and what policy instruments and measures are used.

52. There is a need to develop approaches for evaluating the legitimacy, efficiency and effectiveness of various modes of climate governance. Next, inventories should be made of factors explaining a (lack of) legitimacy, efficiency and effectiveness.

53. Research should map out which types of actors, including nation states, international institutions, cities and regional and transnational networks as well as private parties assume a role in climate governance. Also, what interactions take place between these actors and with what outcome for the climate challenge?

54. Research should especially be devoted to the question how we can determine the governance capacity

of public authorities, private parties, civil society organisations and citizens. The empirical question to be addressed is what the actual governance capacity of these actors is in relation to different aspects of the climate challenge.

55. The issue of climate change adaptation should be approached as a long-term policy issue. The question can be raised as to what types of efforts at which levels (e.g. socio-ecological system, regional level, local level) are made to link long-term perspectives of societies facing climate change with short term actions and to what effect.

56. More emphasis is needed on the monitoring and evaluation of climate change policies. Monitoring and evaluation activities are still underdeveloped in Europe. There is an urgent need for developing indicators to help evaluate adaptation measures and vulnerabilities.

57. More research is needed on how adaptation can be integrated in– or mainstreamed with– policy sectors such as energy, agriculture, transport, maritime and coastal planning, and disaster risk management.

Pillar 6: Financial and economic tools

58. Both for climate change mitigation and adaptation, it should be assessed who takes what share in the costs and benefits. It is also important to identify what role is played by private parties in financing more, or on the contrary, less sustainable practices, why, and how such patterns could be influenced and by whom.

59. To aid the quest for co-benefits between adaptation and mitigation goals on the one hand and other policy goals on the other hand, concrete examples of such co-benefits need to be identified. Furthermore, it should be analysed how the occurrence (or lack thereof) of such examples can be explained and whether any of the identified cases have unforeseen side effects.

60. Efficient, legitimate and effective modes of financing for promoting the innovation and diffusion of low-carbon energy technologies and sustainable use of resources need to be identified.

61. Research should lay bare the normative principles (e.g. solidarity, costs/benefits) underlying the financing of climate change adaptation policies. It is necessary to find out how these policies 'score' in terms of legitimacy, efficiency and effectiveness and to determine whether such scores could be explained out of these normative principles.

Pillar 7: Science-society interactions

62. Research is needed to understand the role of science in policy-making, and how the different modes of science-society interactions can contribute to generating credible and salient knowledge as well as legitimate knowledge production processes for informing climate mitigation and adaptation policies.

63. We need a better understanding of the role of social scientists and how they can contribute to setting the research agenda for climate change and informing the debate about societal transformations, both as observers and as participants.

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Essential SSH Research for the Societal Challenge
Europe in a changing world: Culture, identity and social change

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the challenge '*Europe in a changing world: Culture, identity and social change*' in Horizon 2020.

The first author of the paper is Prof. Wim van den Doel, Professor of Contemporary History at the Universiteit Leiden and Chair of the LERU SSH Community, with significant contributions from the LERU Community of Social Sciences and Humanities and with the support of Dr Katrien Maes, LERU Chief Policy Officer. *We explicitly wish to thank all individuals at the LERU member universities who provided valuable input for the paper and comments during the drafting process.*

Introduction

1. Understanding the roles of individuals, communities, institutions, states and cross-national collaboration over time is crucial for Europe's future. In an increasingly globalised and interconnected world, the need for diverse cultures to understand and communicate with each other is stronger than ever; mutual understanding of languages, values, beliefs, religions, rights, identities, histories, narratives and images is essential to enabling inclusive societies and greater international collaboration. Greater understanding is needed as to how social trust, cohesion and solidarity across regional and national boundaries can be achieved in the face of cultural, social, economic and political change. Here too religion plays a vital role as it is a form of ritual and symbolic communication which is a source of mutual understanding and trust. Research is needed on how differences between citizens and cultures can lead to creativity and innovation, how differences and conflicts can be reconciled, how we can assure that citizens have the essential skills to fully participate and contribute to their society, how shared senses of purpose may emerge, and the kinds of institutions, policies and practices that are needed to enable this. A focus on how linkages with the emerging economies can be promoted is an essential component for strengthening Europe's position in global and intercontinental development processes.

2. Therefore LERU would like to stress that the purpose of this note is not only to argue for the inclusion of essential SSH research in the programme, but also for the inclusion of SSH researchers in all relevant committees so as to ensure that several perspectives are adopted on all the subtopics.

Innovative societies

3. Innovation requires skills and competences at a high level. Skills and competences are produced in many different contexts, ranging from early education and care provisions to school systems, from adult education and employment agencies to firms. It is of vital importance that education and training function adequately in the production of skills relevant for European economies, in terms of average skill level and its distribution, vocational education and training, and work-related training and life-long learning. A challenge is to devise education and training systems that combine a clear focus on innovation and economic growth on the one hand and on accessibility and cohesion on the other.

4. In view of the technological challenges, new approaches to mathematical, digital and science literacy education need to be developed to foster curiosity, creativity and problem solving skills in mathematics, informatics and sciences. These approaches should foster skills in the population at large starting at a young age, but also should support individual excellence of gifted students in these areas. As 'life-long learning' is an economic and social necessity in innovative societies, along with such skills, educational arrangements should enhance the skills, attitudes and identities that are necessary for individuals to keep learning throughout their lives. New approaches to curricula, learning environments and teacher professional development are urgently needed.

5. At the same time, traditional literacy skills should not be forgotten. OECD estimates that fully 15 % of high school students do have the comprehension skills necessary to understand the texts they read. More often than not, these problems persist into adulthood. The economic cost of these problems runs in the billions of euros every year. As scientific insights into problems in basic language and problems in comprehension skills have advanced, it is time to stimulate programmes that integrate such insights

into a coherent approach to advance societal participation of all individuals.

6. Innovation emerges from and has again to settle in social and cultural contexts. The challenges the Social Sciences and Humanities face are both to understand these cultural dynamics and codes, and to enhance a cultural awareness and resilience that provide people with the ability to 'live their culture' and to do so in terms of reciprocity, communality and equality. Humans are social and cultural beings, which need to have the tools with which they can critically assess and shape societies and cultures, individually and collectively.

7. Research on social innovation is needed to tackle not only top-down development of new and better forms of human organisation that enhance the efficiency of livelihood assets, but also bottom-up dynamics that individuals and collectives develop and which provide resilience in times of crisis.

8. This also relates to justice in its broad societal meaning, i.e. justice that promotes accessibility to social life and that facilitates social cohesion through norm clarification and non-violent conflict resolution. This is an area in which top-down institutional and policy developments intersect with innovative, bottom-up dynamics of conflict regulation by individuals, civil society actors and communities. This leads to the development of new concepts and approaches of justice, which coexist, conflict, overlap and integrate with old concepts and approaches, in other words legal pluralism in a new perspective, that may lead to a new hybrid paradigm of justice.

9. The digital revolution is transforming creative economies globally. Given Europe's pedigree in this area an opportunity exists to enhance Europe's creative economy by maximising the move to the digital domain in ways that increase business efficiency by creating new business models, while understanding the impact on the creative practitioner, consumer and society as a whole. The creative use of new technologies may also allow for more citizen-centric approaches combining social protection, access to health and cultural participation, in general and for certain especially vulnerable groups in particular.

10. Development of creative content and cultural activities are key drivers both in digital innovation and the take up of new technologies. There is great potential to use technologies in new and innovative ways, for example to exploit Europe's uniquely rich and diverse historic and cultural heritage and potential. The digital revolution is also providing societies new opportunities for internet-based social networks across international borders, bringing together social knowledge for greater social inclusion and new forms of participation in public and private discourse. Digital Humanities platforms are being developed across Europe to pursue research questions that were previously unmanageable, and to explore new ways of sharing research with the public at large, often in tandem with SME creative industry.

11. The people of Europe (and of the rest of the world) live increasingly mediated lives in a rapidly changing media landscape that directly and indirectly shapes public discourse. Attitudes to the institutions and policies that govern our lives, the ways in which we imagine the communities to which we belong -- the nation, 'Europe', regions within Europe (East/West; South/North), and the wider world, all are shaped through a wide range of genres (from daily news to entertainment to informal exchanges) carried by multiple platforms (from mobile phones, internet and television, to more traditional print-based forms). Information, ideas, images and narratives circulate across different platforms and along multiple routes that sometimes, but not always, cross national and European borders; that sometimes, but not always, intersect to form networked communities; that sometimes have intended or unintended negative impacts (e.g. hate media in armed conflicts), but may also be used in very innovative or creative ways for conflict resolution, peace-building or the enhancement of social cohesion.

12. Although the advent of online forums and interactive social media has allowed more people to become active in the (semi-)public exchange of information and opinions, the outcome of these changes is as yet unpredictable. It may lead both to new public discourses and new possibilities for transnational communication across and beyond Europe. But the result may also be reduced possibilities for a common public sphere and a proliferation of atomised, competing discourses rather than a well-informed and inclusive public debate. Although the challenges of an increasingly dense and differentiated mediasphere affect all parts of the world, they are of particular importance to the European project, whose development has coincided with that of (satellite) television and, later, with the digital revolution.

13. In this context, we can raise the use of social media as a significant social development, since it is very

important for social contacts and information sharing. Yet, at the same time, this development also increases the social vulnerability of multiple groups. Children and young people are active on social media, even at a young age (under 12 years old), but are not always aware of the scope of social media and the impact of offensive information on others. Attention should be paid to ways of strengthening resistance (and resilience) against increased vulnerabilities through the use of social media.

14. Innovation provides many opportunities and it also raises important legal, regulatory, ethical, cultural, historical and public responsibility issues that need to be explored. Issues of ownership, copyright, intellectual property and public access to information, as well as technical, design and 'creative content' are also central.

Inclusive societies

15. In order to build resilient and inclusive societies in Europe it is essential to develop a firm understanding of the history and workings of democratic practices and expectations, and of European integration within a rural and urban as well as a local, national and global framework. The concept of inclusive societies acknowledges the diversity in culture, regions and socio-economic settings as a European strength. We wish to emphasise that SSH research can and should support turning European diversity into a source of innovation and development.

16. In addition, the notion of inclusive society implies that individuals are given the opportunity and the skill necessary to fully participate and contribute to their respective societies. Too many individuals lack the essential language and reading skills necessary to participate in our literate society. Likewise, mathematics, and science skills are unevenly distributed. To be inclusive, the European society must support programmes that determine the causes of such problems and that work creatively to solve them. This includes development and evaluation of innovative approaches to educational programmes and the professional development of a cadre of teachers that can deliver such programmes.

17. Research into the way identities and loyalties are shaped in the 21st century is urgently needed since one of the most pressing issues facing Europe - as it continues to expand its cultural, political and economic boundaries - is that of its citizens' identity. The creation of a broader Europe, which must continue to be a fundamental interlocutor for the rest of the world, will have to come to terms with the continuing existence of long-established, sometimes conflicting religious and cultural identities and allegiances at the local, regional and national level. It will also have to accommodate the emergence of new identities as a result of Europeanisation, globalisation, and the integration of new migrant groups. In this integration religious and cultural identities play a crucial role.

18. The construction, legitimation, and transformation of identities involve complex processes which are historical, cultural, linguistic and social, as well as political and economic. They encompass and influence all aspects of the life of individuals - language, memory, customs, religion, political allegiances, conflict resolution, just to name a few. Realising how identities are shaped and change, or remain unchanged, in response to new circumstances is therefore essential to the future of Europe. Humanities and Social Sciences research is vital to the understanding of the cultural construction, historical emergence and on-going transformation of identities as well as the resistances offered to such transformations. Social and historical research can shed light on the origins and development of the dialogue between an overall European identity, local allegiances and the perspectives of immigrants; it can shed light on the vague but all-pervasive agency of culture and cultural (self-) representations in these identity formations; it can facilitate an understanding of how European citizens can see themselves, and operate, as citizens of the world; it can identify the most crucial aspects of the dynamic tension between centre and peripheries; it can give an answer to questions which are, at the same time, historically relevant and urgently topical; it can teach how (future) European countries and individuals within these countries have dealt with their past of violence and crimes committed during war or under oppressive regimes and help to understand how this has shaped their identities and influences social cohesion or the lack thereof.

19. Social Science and Humanities research will also address the evolution of key systems that provide underlying forms of social bonds, such as family, work, education and employment and that help combat poverty. It will take into account the importance of migration and demography in the future development of European policies. Apart from looking at the future, however, it is also crucial to realise that for centuries Europeans have been highly mobile and that this population dynamic has added greatly to its unique economic, social, linguistic and cultural dynamic. Systematic research combining historical and social-scientific research is of utmost import-

ance to understand under what conditions societies profit from migration, both within and from outside Europe. Combined interdisciplinary knowledge can help to single out societal and institutional processes that stimulate the inclusion of migrants and help to forge new shared identities.

20. The evolution towards a more inclusive society requires in-depth and ongoing critical analysis of mechanisms, ideas and approaches that create exclusiveness and reinforce social vulnerability, such as unilateral criminal justice responses mainly based on retribution and the excluding effects of certain types of risk assessment. This will allow for the development of new concepts of justice and social cohesion, integrating the principles of inclusiveness, citizens' participation and respect for otherness. In this regard, understanding the impact of cultural differences regarding conflict and conflict resolution within Europe's increasingly heterogeneous societies will improve allocratic participation of citizens in addressing Europe's justice challenge.

21. Europe is not only made up of cultures, identities, languages and institutions, but also houses the "European social model" (ESM): an ideal type that aims to grasp some key features that distinguish European economies - in spite of their persisting differences - from both "pure market" (US) and "state-led" (some BRICs) economies. Generally, the ESM aims to balance different goals (especially those of capital and labour) and different outcomes (economic growth and innovation versus social welfare and inclusiveness, or efficiency and equity). Specific elements are a well-developed welfare system and social rights, educational quality, policies aimed at regulating the labour market to combine flexibility with income protection, and consultation, concertation or bargaining of collective groups and representative associations.

22. Better understanding of this model requires a deeper insight in its genesis and its effectuation at ever bigger geographical levels. The roots of the model can be traced back to the high Middle Ages, as it was developed by urban and rural communities at the local level, with guilds and commons. In the early modern period, elements also took shape at the regional or state level, for instance through formalised poor relief and linguistic standardisation processes. Its formation, in a discontinuous process, received an impetus in the late 19th century, through the emergence of trade unions, cooperatives and associations, and later through the development of the welfare state, especially after WW II. The European 19th century is a treasure house for research on the genesis and crises of democratic community formation and globalisation. Scholars studying social and intellectual history and political economy have only begun to uncover and cover the massive amount of material recording this history. Digitisation of, in principle, all records—not just the canonical documents—will offer opportunities for research that will yield more substantially evidence-based accounts of the emergence of the ESM. The rise of a middle-brow citizenry, for instance, has so far not been sufficiently studied, even though it has arguably played a crucial role in the formation of the ESM. Historico-discursive investigations of these phenomena promise valuable insights into the possibility conditions for the survival of the European model on a global level.

23. Also, we need to better understand how the ESM - not just as an ideal type but also as a vision of how to pursue economic efficiency together with social cohesion - is embedded in society. To what extent does it build upon traditions of social citizenship, self-organisation and civil society? And does the research into the European business systems and the European varieties of capitalism offer additional clues? Also needed is comparative research on the conceptual fundaments of the ESM and the extent to which it is based on the individual (vs. social groups), the man (vs. person), the paid worker (rather than the worker) and financial (rather than familial) forms of protection. In what way does the European approach differ from other models such as the Asian ones? Research can also reveal common principles of social protection law throughout the European Union through analysing decisions of European and national constitutional courts, allowing in this way to distinguish essentials of social protection from secondary features of our social protection systems.

24. Another relevant perspective is the geographical, comparative one. Even though the model can be loosely identified as "European", especially when looking at Europe from the outside, for instance from the US or China, the differences within Europe are marked. Anglo-Saxon, Mediterranean, Nordic and Continental countries each have their own characteristics, while differences with many parts of Eastern Europe are even bigger. What are the causes and effects of these differences? Can they be linked to differences in societal resilience or success? A similar comparison is needed with other parts of the world; does this distinctiveness really hold? What are the paradigms underlying our European social protection approaches and in what way are these paradigms evolving in their fundamentals? In what way is there an interaction with paradigms

originating outside Europe? These research questions could show to be essential for a balanced socio-economic development of the European Union.

25. A last set of questions pertains to the future of the ESM. The model at present is under pressure, because of the costs of social benefits and an ageing population, neo-liberal attacks on the rigidity of the model and an emphasis on efficiency in the global competition rather than equity. Also, through the new media and modern forms of mobility of goods and people the stability and sustainability of the ESM has become, in a critical way, interwoven with the non-European world. To what extent can a normative, and perhaps empirical, emphasis on the beneficial effects on human and social capital formation, ensure its resilience?

26. Of equally vital importance to the building of inclusive societies in Europe is the challenge of multilingualism. Multilingualism is one of the consequences of increasing mobility and migration; at the same time, it is part of the European tradition and a central European value. Linguistic identities are important and sensitive issues, which, if not handled with expertise, create rifts between groups, develop into focal points of hostilities, and reduce the employability of individuals. Migration and mobility intensify language contact and linguistic diversity. We need research which addresses the causes and consequences of intense language contact, linguistic diversity and hybridity in heterogeneous places, and which contributes to solving ensuing social tensions.

27. We need research that will identify the conditions under which multilingual education will be an asset for the individual and for society, addressing especially how families, communities and the education systems in European countries can cooperate to optimise the benefits. Conversely, we need research on how educational systems can be set up so as to assure that all children and adults have the literacy skills to fully participate and contribute to the European and global society.

28. Given the high degree of linguistic diversity in Europe (including diversity with pluri-centric languages), combined with its academic excellence in linguistics, Europe can take a leading role in developing solutions to the social challenges emanating from migration-based linguistic diversity and the growing need for automated language mediation. These are challenges shared with the whole world, and Europe can be a strong player in helping to provide solutions. Consequently, Europe needs to pursue research into language and literacy issues in key areas such as ensuring successful communication in multilingual encounters – be they rural or urban - between communities and individuals, efficient and fast language learning, the consequences of (il)literacy for language acquisition and communication and health, effective interpreting and translation services with their associated technology. Moreover, as successful migration depends on integration into one's new cultural context, attention should be given to develop programmes for second language acquisition and other dimensions of integration.

29. In a way similar to this linguistic diversity, also religious diversity continues to influence European societies in many different ways, both as a source of violence and as an incentive towards peace and social integration of so-called newcomers. Today it is already clear that in the future this plurality of religion and the challenges and opportunities it brings, will only increase.

Reflective societies

30. LERU supports the inclusion in Horizon 2020 of research aimed at understanding Europe's intellectual basis: its history and the many European and non-European influences. Europe's cultural and historical diversity and its dynamics and opportunities should be the focus of further research. However, research into European countries' and regions' history, literature, art, music, philosophy and religions should primarily be supported by national funding organisations. Research supported by Horizon 2020 should have a clear European and transnational focus or should fund international cooperation by leading scholars into national or regional history, literature, art, music, philosophy, transitional justice and religions.

31. Furthermore, LERU stresses that Europe's distinct historical, political, linguistic, social and cultural system is increasingly confronted with the impact of global changes. In order to further develop its external action in its neighbourhood and beyond and its role as a global actor, Europe has to improve its capacities for defining, prioritising, explaining, assessing and promoting its policy objectives with other world regions. In this regard, it also has to improve its capacities for anticipating and responding to the evolution and impacts of globalisation, and the new priorities and alliances being set by emerging countries.

32. Europe today is home to, and thrives on, an extraordinarily diverse wealth of cultural heritage- from unique ancient architecture, cultural artifacts and outstanding landscapes to living practices, traditions

and expressions- oral, written and digital. These attract millions of visits from within and outside Europe every year, playing a central role in European citizens' and residents' quality of life and sense of patrimony, and significantly contributing to economic and regional development. But cultural heritage is also under threat from contemporary global transformations, including climate change, mass tourism and urbanisation. In order to protect this fragile resource from continuous decay, coordinated and strategic research is crucial to underpin concerted actions. Research policies and initiatives need to be coordinated and expertise needs to be strategically pooled in order to best address local conditions and needs, thus safeguarding Europe's unique and evolving patrimony.

33. In order to strengthen Europe's position in a changing world research on the mutual influence and ties between the world regions and the establishment of a view from outside on European cultures are needed. In particular the growing importance of Asia and Latin-America on the world scene asks for investments in the field of Asian and Latin-American studies. Social Sciences and Humanities can contribute to knowledge of the deeply interconnected histories of Asia and Europe and Latin-America and Europe. Building and enhancing competence in analysis of transcultural entanglements is a critical asset in the understanding of complex, global interactions the 21st century has to deal with.

34. In its philosophy, religion and art, Europe possesses an impressive and still influential heritage of reflection on society and mankind that is still awaiting capitalisation for the elucidation of Europe's present and future in the context of globalisation. A globalised Europe is not one reflective society that meets others, but is increasingly part of one or more global reflective societies. Europe will gain huge profits, both social and economic, if it invests in participation in a discourse that draws on worldwide sources of reflection on the meaning and direction of economics, policies, artistic practices and human life in general. The function of art (including music, design, literature, architecture, and other art forms) in shaping and intensifying societies is of special interest in this context. Societies in Asia and South America are increasingly aware of the importance of such a discourse, and actively seek allegiances and discussion with their European counterparts in order to shape their future.

35. In addition, considering Europe's commitment to contribute to a more democratic and peaceful world, research on the increasingly diverse and innovative ways countries emerging from authoritarian rule or armed conflict deal with their violent past and on the role of international actors therein will allow to improve Europe's external policy in this regard.

LERU suggests the following research lines:

Pillar 1: Innovative societies

36. Research is needed in the field of educational sciences in order to devise education and training systems that effectively create a clear focus on innovation, economic growth, and full participation of individuals in society.

37. As 'life-long learning' is an economic and social necessity in innovative societies, research should support the development of educational arrangements that enhance 'life-long learner' skills, attitudes and identities.

38. Research is needed to innovate education in mathematical, digital and science literacy and to foster creativity and excellence in these areas.

39. Research on the emerging bottom-up dynamics of justice and conflict resolution and their interaction with the official top-down justice system is required to increase understanding of overlap and conflict among them and the evolution towards more integrated hybrid approaches.

40. Research should support the development of creative content and cultural activities which are key drivers both in digital innovation and the take up of new technologies.

41. Research should support a citizen-centric, integrated and IT-supported approach combining social protection, access to health and cultural participation, in general and for certain especially vulnerable groups in particular.

42. Research is needed on how to strengthen resistance (and resilience) against increased vulnerabilities through the use of social media, especially of very young children (under 12 years) and young people.

43. What is urgently needed is a large-scale, innovative and integrated study of the role of media in and relating to Europe. This means mapping: (a) discourses and narratives: the way representations of Europe –

as a cultural whole and as a political project, as a collection of individual member states, and as a region in the world – are and were generated across different media in multiple language areas both within Europe and beyond; (b) the channels and pathways through which these discourses do and did proliferate, circulate, interact and were and are appropriated into new contexts; (c) their impact on processes of European integration and the involvement both of citizens and immigrants' in public debate in local, regional, national, European and international arenas; (d) the processes by which individuals acquire –or fail to acquire- the ability to negotiate these new media.

44. In order to be fully effective, research needs to address a broad range of media and to overcome traditional compartmentalisations between broadcast media, print, and social media, between commercial and public enterprises, between journalism and the arts, both in the sphere of present-day discourse and in the sphere of the public discourse of modernity broadly conceived. The project needs to provide an integrated account of the interplay between news media (reporting on current events often in a national context), entertainment media (including TV dramas and documentaries, cinema and literature, with an important role in shaping ideas and mobilising emotions, and often working across national borders); and social media (involving user-generated content in the private sphere). A systematic, comparative and historically informed understanding of the interplay between these different forms of mediation working across the private and (semi-)public spheres is a prerequisite for the evidence-based formulation of educational, cultural and social policies in the European area.

45. Such research requires a combination of contemporary and historical perspectives so that emerging trends can be mapped at the same time as they are related to longer-term trends and path-dependencies.

46. At the same time, it is important to avoid a mass-media bias and to foster investigations into the multimodal discourses of/about people and places in for example rural or urban European and global encounters.

47. Finally, research is needed into the ways media can contribute in positive or negative ways to conflict resolution and peace-building.

Pillar 2: Inclusive societies

48. Research into the way identities and loyalties are shaped in the 21st century is urgently needed since one of the most pressing issues facing Europe- as it continues to expand its cultural, political and economic boundaries- is that of its citizens' identity.

49. Research is needed into the constitution of political societies beyond the nation state in order to build the necessary political infrastructure – on the European level – for solidarity bonds amongst the European citizenry.

50. Research on the way (future) European countries have dealt with their past of violence and crimes committed during war or under oppressive regimes is needed to understand how this has shaped the identities of their citizens and has influenced social cohesion.

51. Research on societal mechanisms, ideas and approaches that create exclusiveness and reinforce social vulnerability, such as unilateral criminal justice responses based on retribution, is needed, with a view of integrating the principles of inclusiveness, citizen's participation and respect for otherness in justice responses.

52. Research on the impact of cultural differences regarding conflict and conflict resolution within Europe's increasingly heterogeneous societies, will allow to valorise multiple concepts of justice and to enhance the democratic participation of citizens in addressing Europe's justice challenge.

53. Comparative and fundamental research, including legal research should unveil the paradigms present in the European social protection systems, examine their evolution and allow for a meaningful interchange with the social protection paradigms to be found outside Europe.

54. Research is also needed to better understand the European Social Model. Better understanding of this model requires a deeper insight in its genesis and its effectuation at ever larger geographical levels.

55. Europe should invest in research that addresses the causes and consequences of intense language contact, linguistic diversity and hybridity, and that contributes to solving ensuing social tensions. Europe also needs to pursue research into language issues in key areas such as fostering traditional and multimedia literacy, ensuring successful communication in multilingual encounters between groups and individuals, efficient and fast language learning, effective interpreting and translation services with their associated technology. In addition, it is important to

examine the effects of (il)literacy for language learning, communication and health.

56. Research is needed on effective approaches to multilingual education to increase personal, educational and societal benefits of multilingualism.

57. Research on literacy development in children and adults that combines novel scientific insights with practical application should be initiated. Literacy– of print as well as of other media- is essential for individuals to reach their potential and, therefore, to contribute maximally to a successful European society.

58. Research is needed on approaching societal problems at multiple levels simultaneously. For example, many of the ideals to which Horizon 2020 aspires depend on the quality and inclusiveness of Europe as a knowledge society. Educational improvement is the primary tool to achieve these conditions; such improvement is best achieved when simultaneously considering the individual child or adult, the instructional delivery methods, and the school systems at large.

Pillar 3: Reflective societies

59. Horizon 2020 should support research aimed at enhancing our knowledge of the history, cultures and political-economic systems of other world regions, as well as of the role and influence of transnational actors. LERU agrees with Commissioner Geoghegan-Quinn´s view that, "while of course we need to understand Europe, we also need to understand other cultures and societies as well so that we can improve our relationships and interactions with them. This can only be achieved with proper knowledge of their languages, history, values and cultural heritage – all these aspects are at the core of 'area studies' and they are ripe for further research"[1].

60. Research is also needed on the question how to preserve and strengthen European democracy in an increasingly globalising world, in which various forms of governance, prompted by economic and efficiency concerns, seem to gradually take over or even rule out democratic governing. Here again, SSH scholarship, particularly through a multidisciplinary cooperation of historians, legal scholars, political scientist and political philosophers, has much to offer.

61. Considering Europe's commitment to contribute to a more democratic and peaceful world, research on the increasingly diverse and innovative ways countries emerging from authoritarian rule or armed conflict deal with their violent past and on the role of international actors therein will allow to improve Europe's external policy in this regard.

62. New multidisciplinary and transnational SSH research with partners worldwide is necessary to secure Europe´s role in the global discourse that draws on worldwide sources of reflection on the meaning and direction of economics, policies, artistic practices and human life in general, that is also going to define Europe´s position in the future. Furthermore, in order to continue and guarantee such discourse, research is needed into how the ability to participate in global reflective societies is to be anchored in European education as a necessary ingredient. For this, SSH research can draw both on European and worldwide theories and practices of education.

63. LERU stresses that preserving and making the best use of European heritage requires a fundamentally cross-disciplinary research agenda, ranging from research in the arts and humanities to scientific and technology research, with a strategically balanced approach covering research on tangible, intangible and digital heritage, and with equal focus on cultural landscapes, buildings, collections, associated practices and digital resources.

1 Máire Geoghegan-Quinn, "The future of Social Sciences and Humanities in Horizon 2020", Speech at the British Academy London - 10 November 2011. http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/741&format=HT

Essential SSH Research for the Societal Challenge
Secure societies - Protecting freedom and security of Europe and its citizens

With this Note LERU wants to advise the European Commission to include essential Social Sciences and Humanities (SSH) research in the programme addressing the societal challenge 'Secure societies - Protecting freedom and security of Europe and its citizens' in Horizon 2020.

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Introduction

1. The recent developments in combatting the threats to security in Europe can be seen as a process of 'securitisation' which includes a set of concepts that explain why, how and by whom a security threat is put on the political agenda, is put into practice or is removed from discourse and policy again. Defining something as a threat to security is dependent on national and international conditions and has major implications for the amount of attention, political activity and resources committed to combatting it and largely determines what is justified in combatting these threats. Legal constraints, including constitutional values and international treaty obligations, may or may not evolve as a result of new social realities. The Social Sciences and Humanities can provide crucial insights into how real and imagined threats to security emerge and disappear again, and how this influences people, societies and governments. It is necessary to avoid a pre-formed application of the notion of security, and instead trace back, historicise and unpack the different, interlocking and interweaving notions of security as they emerged in discourse, rule and praxis in various states and international settings.

2. In combatting the threats to the (personal) freedom and security of Europe's citizens, the choice of security-threatening activities to be criminalised and prioritised in crime control has not been subjected to a process of rationalisation but seems to have largely been left to the whims, calculations or, at best, moral stances of politicians, law enforcement officials, "moral entrepreneurs" and public opinion. A better contextualisation of the harms of crime and their relevance in people's perceptions and crime control policies helps to provide a fair, legitimate and cost-effective protection of (individual) citizens' freedom and security.

3. Contextualising the development of legal and social frameworks, the creation of narratives and counter-narratives, the formation of identities, the securitisation process, and the actual harms of crime helps us understand the behaviour of individuals and groups in society. Their perception of and reaction to threats and their ability to cope with them are however also determined by the measure of trust they have in their neighbours, financial institutions, trade unions, state bureaucracies, governments and supranational structures such as the EU. The complexity of the modern world and the threats to stability, personal safety and social security create a general uneasiness in society. For LERU it is obvious that the Social Sciences and Humanities are eminently equipped to uncover the mechanisms which enhance the resilience of individuals, institutions, society and states and thereby provide a sense of security.

4. Therefore LERU would like to stress that the purpose of this note is not only to argue for the inclusion of essential SSH research in the programme, but also for the inclusion of SSH researchers in all relevant committees so as to ensure that several perspectives are adopted on all the subtopics.

The development of effective legal regimes at local, national and transnational levels

5. The European Union, its citizens and its international partners are confronted with a range of security threats like cross-border crime, cybercrime, terrorism and mass emergencies due to man-made or natural disasters. Europe is not immune from worldwide phenomena such as institutional disintegration, human trafficking and (civil) war. The impact of these phenomena is further amplified by globalisation, vast migration flows, environmental crises

and conflicts about new technologies and moral and religious pluralism. Research on the development of effective legal regimes at local, national and transnational levels as well as effective police, justice and other security actors' cooperation at local, national and transnational level is critical as new threats to security emerge, but greater understanding is also needed concerning issues of human rights, ethics, justice and public acceptability which underlie them. New normative frameworks are being developed to restrain and manage international and domestic conflicts through conflict resolution, restorative justice, peace building and social reconstruction; and to create stability, identifiable norms, public order and legitimacy. The expanding international and regional frameworks to protect and promote human rights and fundamental freedoms initiated by governments, civil society and NGOs play a significant role in preserving human dignity. The EU plays a leading role in this area, both internally (with the EU Charter of Fundamental Rights as an important point of reference) and in its external relations.

Understanding of the cultures, social positions and claims of the relevant groups in conflict

6. Within Europe, technology alone cannot create secure societies. A better understanding of the behavourial, social and cultural dimensions of security, the historical causes of insecurity, the role of media and communication and the citizens' perceptions, are equally important elements in this objective. For a new security concern to gain support from competing political groups in society and be accepted by state bureaucracies, a sense of legitimacy is required which can only be established on the basis of an intimate understanding of the cultures, social positions and claims of the relevant groups in conflict. A particularly important element in the consequent creation of a secure society is the response of its citizens to the narratives of groups which question the basis of its existence. The Social Sciences and Humanities provide the historical experience and skills to decode the content and performative power of these narratives and the way they are presented, which is central in successfully undermining threats and mobilising support for a counter-narrative and security policies, and thus maintaining the political legitimacy of both the state and non-state security actors among the public.

Recommendations

7. It is clear from the above that there is an urgent need for the European Commission to consider the inclusion of SSH research in the programme for addressing the challenge *Secure societies - Protecting freedom and security of Europe and its citizens.*

LERU suggests the following research lines:

8. For a proper understanding of security threats in all their forms, from the individual to the transnational level, from natural disasters to cyber and terrorist attacks, the social, legal, historical and cultural dimensions of security regimes need to be analysed. We have to establish on what basis and how societies are evolving towards defining certain events or developments as threats and which implications such definitional processes have on the perceived nature of the phenomenon. Further research is also necessary to establish how such security definitions are translated into policy and action and which legal, criminological, political and social frameworks are put in place on local, national and international level to deal with threats effectively. The balance that can and should be struck by a state between security issues, their actual harms, and personal freedom and privacy is directly related to these concerns.

9. Threats to security are not only the consequences of outside factors, both natural and manmade, but also stem from developments within society itself. The complexity of modern society, the impact of political, economic, ecological and social crises as well as of various forms of violence in society, from political to mob or street violence associated with perceived declining social controls, and the way society (police, justice and other security actors) reacts to this violence, can lead to loss of trust and serious feelings of insecurity among the population with concomitant dangers for the system associated with it. The rise of populism is a case in point: originating from multiple forms of societal uneasiness, it may entail serious threats to the democratic nature of our political system. An understanding of what causes uneasiness in society is therefore not only vital in the capacity of a political system to provide security for its citizens, be it through state or non-state actors, but it is also crucial to strengthen and enhance the democratic resilience of its citizens. This ability of individuals, groups, societies and states to cope with threats varies widely and is directly related to the levels of trust they have in other

people and institutions present in societies. Research into how a democratic state and its institutions such as schools, the health system, the family, churches, welfare systems, the criminal justice system and even supranational institutions can create (or indeed fail to create) this sense of security is necessary to uncover and support the mechanisms which enhance the resilience of individuals, institutions, society and states and thus avoid institutional disintegration.

10. In a democratic society, freedom and security are not 'given' a priori or just provided by public authorities in a top-down way; they have to be realised in everyday life. Against the background of theoretical insights in securitisation trends in current societies, pilots and other practice-oriented studies should be designed and undertaken on how citizens in their own environment, through intermediary processes and in on-going interaction with institutions, can participate in dealing with different types of conflict and tensions and thus can contribute to security solutions themselves. Bottom-up approaches should be developed where people through active participation in conflict resolution can link their new perceptions of security to feelings of freedom and where this linkage can offer an empirical basis for the formation of new concepts of responsible citizenship.

11. The various threats to security facing us all need effective and targeted answers, but it is of paramount importance that these are based on the values which form the basis of our democratic societies. It is therefore critical, as new threats to security emerge, to develop a morally and ethically grounded democratic framework for our actions and policies to counter these threats.

12. The history of European integration is itself at least in part a powerful narrative of what can be achieved if a spirit of courageous cooperation prevails against sentiments of suspicion and fear. Cultural, legal, political and historical scholarship explores strands of this narrative to better understand the ambitions and visions of the agents driving them and to articulate in detail the possibility conditions for their success. It is essential that this research be continued: our past is always in need of re-reading and re-writing, not only because new data are discovered, but also because new technologies and methods (such as digital social network analysis) open innovative perspectives in which creative new questions can be pursued. The public dissemination of the multidisciplinary research exploring these new perspectives in inventive new (typically digital) formats can be a powerful tool in the formation of civic confidence. Evidently, the history of Europe is also a history of trauma and destruction, and that narrative equally needs further exploration, not only for the salutary warnings it can generate, but also for the record of courage and resilience in the face of the extreme it harbours.

13. In the transmission of the European narrative of freedom, security and justice, a major role must be played by the teachers educating our new generations. These teachers must be trained in their disciplines of choice by academics conducting innovative research, but they must also be taught to teach in ways that are adequate to the constantly changing classroom culture. For such teacher training to be effective and to result in classroom performances that enlighten and empower our youth, fundamental research on learning and teaching conducted by psychologists, pedagogical scientists, and discipline-specific educationalists is indispensable.

14. In responding to the alternative claims to loyalty from individuals and groups challenging the legitimacy of the existing political system, it is crucial to analyse the content, values and strength of the narratives put forward by these groups and to identify effective counter-narratives that are broadly acceptable to all those constituting a democratic society. Underlying these narratives and their acceptance are processes of identity formation on individual, group and national level, which need to be understood in their cultural, social and political contexts. A final element in this area of research is constituted by the role of the media and the performative power of the messages influencing citizens' perceptions. In addition, it is important to study the societal impact of this security agenda. How effective are security measures ? What are the unintended side effects of political action in security issues? How do citizens experience certain types of securitisation?

15. In addition, it is important to focus on the process and impact of 'securitisation'. We need to know under which conditions (social or political context), which actors (intentionally or unintentionally) may influence what is put on the political agendas. This is particularly relevant in times in which the security agenda is rather volatile as a consequence of rapid social, geostrategic and technological changes, with many issues competing for attention. Moreover, it is important to know to what extent security issues tend to rank high on political agendas in general and how they may overrule other social issues or create unnecessary moral panic. Researching these processes and the impact of securitisation can also contribute to

finding answers to the fundamental questions 'what is the idea of 'protecting freedom and security of Europe and its citizens' actually about, how is it constructed, and how does it affect Europe's citizens?

16. Within the European Union, Member States remain ultimately responsible for the provision of internal security. Still, the trans-national nature of (societal) security risks means that these can no longer be addressed within the confines of the nation-state alone. Increasingly, international and European actors come to play a role in the provision of security within networks of multilevel governance. Police and judicial institutions, the primary actors in protecting freedom and security, play a particular important role. Trans-national cooperation and transparency will be essential in addressing contemporary challenges. The development of Europe's Area of Freedom, Security and Justice with a strong external dimension forms a case in point.

17. While the emergence of security actors and security practices often takes place *ad hoc*, in response to actual and perceived security threats, there is a slow but certain process of juridification of security cooperation, which is to provide for a normative framework in which security actors operate. This framework has both substantive and institutional dimensions. On the one hand there is the issue of standards and standard setting. What is, for instance, an appropriate level of data protection as new techniques become available to roam large quantities of personal data – and how much weight should the EU attach to its own standards when negotiating the transfer of such data to third countries? Although the image of freedom and security as conflicting values is contested, they are often presented as such. Research is needed to evaluate how the legal framework governing the provision of security affects fundamental freedoms and how this framework can be used to reinforce rather than to come at the expense of citizens' freedoms. Much like the provision of security takes places at multiple levels of governance, fundamental rights and freedoms are protected at different levels. This carries an obvious risk of conflict, overlap, but at the same time of gaps in the protection of citizens' rights.

18. On the other hand there are various institutional issues. A key question is how both state and non-state security actors can be provided with a satisfactory constitutional grounding. The need for democratic, judicial and public control of security actors, must be balanced with the need for efficiency, effectiveness and often confidentiality. It is therefore key to monitor this process, to evaluate existing practices and where necessary re-think the way in which security threats are being addressed. To complicate matters further, any legal analysis must take into account various actors and levels of jurisdiction. Thus, the accession of the EU to the European Convention of Human Rights will affect the legal landscape in which the EU operates. Financial sanctions, an instrument in the fight against international terrorism, are instituted by the UN Security Council, incorporated in EU Regulations, implemented by Member States, and finally applied by banks and other institutions. But it would be a simplification to regard the interaction between legal systems as a one-way relationship. On the contrary. The Strasbourg Court takes into account developments at the national level when interpreting the European Convention of Human Rights; the EU is bound by general principles common to the laws of its Member States; the United Nations policies are essentially determined by its Member States. Interaction is a two-way process indeed.

19. Finally if it is true, as was argued above, that effective answers to security threats must be based on the core values of our democratic societies, then it is also necessary to rethink the relationship between religious and cultural pluralism, the state and society from a comparative human rights perspective. How to deal with cultural and religious pluralism is one of the greatest challenges European countries face. Immigrant groups press for equal citizenship by claiming reasonable accommodation of cultural and religious norms and practices that may differ from the dominant standards. In this context (potential) conflicts of rights often play an important role (e.g. rights of women, LGTB rights, rights of minorities within minorities). Social cohesion seems to be threatened by increasing social and political strife over this issue and endangers European peace and security. A human rights perspective on these matters is essential, as human rights provide a legally binding, normative framework for assessing the legitimacy of any solutions suggested. Thus, human rights may give guidance as to which road(s) to take in European societies and in Europe's external policy. A comparative approach is very important since the dilemmas European (and other Western) countries face are very similar indeed, while developing countries present dilemmas of their own. This calls for a comprehensive inquiry into the different approaches and solutions sought. Which ones are most promising in which contexts? And how can the need for contextual appropriateness, local legitimacy and ownership be rimed with the inclusive universality of human rights?

A LERU FLAGSHIP INITIATIVE 2.0

In order to increase the effectiveness of research and innovation which supports smart, sustainable and inclusive growth, the European Commission is advised to launch a 'Flagship Initiative' to better understand the place of Europe in the world as well as the legal, economic, political, social, linguistic and cultural fabric of Europe in which growth has to be achieved. We suggest calling the 'Flagship Initiative':

A Resilient and Dynamic Europe in a Globalized World

1. More than ever before Europe is confronted with the tensions and opportunities created by integration processes with different speeds and other processes which create more differentiation – while the world is changing fast. Europe is also confronted with a financial and economic crisis which has had far reaching consequences on the ability of the EU economy to innovate and grow.

2. In addressing these challenges, all societies – at the local, regional, national and supra-national level - build upon the social, cultural, linguistic, historical and institutional arrangements they have developed. This social infrastructure may be highly effective in tackling challenges and in increasing a society's resilience, but it may also be an obstacle; for instance, when this infrastructure loses its dynamism and its adaptability, or when it is governed by special interests. A better understanding of the formation, functioning and effects of these legal, economic, political, social and cultural infrastructures – which is the field of expertise of the Social Sciences and Humanities – is therefore of supreme importance and forms an essential basis of formulating policies in order to create economic, social and cultural growth on both synchronic and diachronic dimensions. Strong European institutions will also need a reform of the political and legal framework of the European Union, especially when one wants to create a better functioning Economic and Monetary Union.

3. Only a resilient and dynamic Europe which stresses history, language and strong local traditions as well as strong and reformed European institutions can address the known and unknown societal challenges of today and the future and can make sure Europe plays a prominent role in the world.

Approaches and methods: argument for an integrated and multi-disciplinary SSH approach

4. Several aspects of the legal, economic, political, social, linguistic and cultural infrastructure have thoroughly been investigated by scholars from separate disciplines. Increasingly, it has become clear, however, that only an interdisciplinary approach can lead to a true understanding of what Europe needs to remain [both resilient and dynamic]. The elements of this multifaceted approach have manifold aspects (they fulfil economic, social, political and cultural roles at the same time) and they can only be understood in a holistic way, also because they consist not only of formal but also on informal institutions, including norms, values and beliefs.

5. The Flagship Initiative proposes a "matrix approach": from local to global and from past to future.

6. All themes should be dealt with not only from a European (local, national) perspective, but also from a global one. At the same time the temporal dimension is of the utmost importance. The social infrastructure develops only slowly, in a path-dependent process and therefore history should be seen as a laboratory of the social sciences and humanities in which ideas and models can be tested.

Specific and urgent themes

7. The initiative looks at some conspicuous aspects of the legal, economic, political, social, linguistic and cultural infrastructure in Europe. It will analyse these pressing challenges and come up with clear policy recommendations. Four urgent themes are singled out :
   - The European Social Model
   - The European Financial Model
   - The European Political Model
   - The European Cultural Model

8. The themes are interrelated and look at the frame-

work of European society. The themes also focus on issues which have brought the European Union and the European way of life under pressure. The only way to guarantee a resilient and dynamic Europe in the future, is when Europe finds answers to the questions how the European Social Model can be adapted and preserved, how Europe's political institutions can be renewed, how Europe's financial structure can be strengthened and how Europe's unique cultural structure can be made more of an asset than today.

The European Social Model

9. In the post-World-War-II period, Western European political and intellectual elites largely shared the belief that their market economies could not and should not be left entirely to the market, but rather should be guided by some sort of "social model" of development. This was true for both the Christian-Democratic and conservative elites and the Socialist (and even the Communist, where they were present) ones. Albeit in different ways, they all regarded the market as the most efficient mechanism for resource allocation, but at the same time as producing deep inequalities in income distribution, work chances and access to social protection. It was a mechanism, therefore, that needed to be regulated by institutions which could ensure social justice, be they state policies, family and community networks, or interest associations.

10. Over time all these institutions have come to play an important role in the regulation of European advanced market economies. States have developed not just macro-economic policies, but also welfare, labour market, and income policies as well. Institutions such as the family and other social safety nets have played a key role in offsetting market-related risks. And interest associations that represent labour and capital have ensured greater equity of economic outcomes through collective bargaining and various forms of social dialogue.

11. The initial discussion of a European social model (ESM) of economic management and development was as much about a political and institutional project of the EU (launched by Jacques Delors) as about an accomplished historical fact. At the same time it became increasingly clear that the European economies show distinctive features, that make them quite different from both "pure market" (US) and "state-led" (BRICs) economies. For all the internal diversities existing within Europe, and in spite of the major reforms implemented in the last thirty years, the ideal-typical ESM still displays the following basic features:

    a) a type of welfare regime with relatively generous social expenditure and mostly non means-tested provision of social services and welfare benefits;

    b) labour-market regulation that combines the search by companies for flexibility with high employment and/or income protection;

c) a well-developed and institutionalized system of industrial relations based on inclusive and mutually recognized interest associations, and on collective bargaining among them as the standard method of labour regulation;

d) a style of economic and social policy-making based on at least informal consultation or involvement of these interest associations by governments.

12. However, three major questions immediately arise that call for extensive research in a plurality of SSH fields. The first question relates to change: to what extent has this ideal type continued to orient the policies of European governments, as well as their – and their citizens' – vision of European distinctiveness? The second relates to internal variation: to what extent are differences within Europe today as great as – or even greater than – those between Europe and other world areas? The third question concerns the future: even assuming a positive answer to the first question and a negative one to the second, can the ESM stand the challenge of globalization, and if so, how?

13. Answers to the first question usually start from the observation that, since the 1980s, in the public discourse the ESM has often become synonym with rigidity, inefficiency and waste, an obstacle to economies that must compete in global markets. Supra-national bodies like the OECD, the IMF, the World Bank have provided recipes for economic de-regulation that imply abandoning the very idea of a social model. Yet, thirty years later, we may say that such an overall dismantling of the ESM has not taken place. To be clear: incremental change has affected one or another of the ESM's four features everywhere: welfare regimes have been changed by reforms in the health, education, and pensions systems; labour markets have become more flexible especially as regard to entry and partly exit; trade unions have become weaker and collective bargaining has been effectively decentralized; and tripartite "social pacts" have given way to less binding forms of consultation of social partners. Yet, the precise borders and the consequences of such slow erosion of the ESM are far from clear.

14. Answers to the second question are also only apparently easy, at least as far as their implications are concerned. To be clear again: any comparative analysis of European economies immediately shows major differences among them along all the four dimensions of the ESM identified above, and questions the usefulness of this categorization. More importantly, only a few European economies have succeeded in increasing their competitiveness without major changes in the distinctive features of their social model. The challenge to de-regulatory recipes has come mainly from the "Nordic model", which has long shown high economic performance without abandoning the basic elements of its advanced social model. Yet, in the recent past several other European economies have achieved very high levels of performance without abandoning the basic elements of their social model. Of course the German "coordinated market economy" is a case in point, but so has been the "Dutch miracle" based on flexi-curity in the 1990s, and even the Italian "flexible specialization" in the 1980s. Despite their differences, all these countries have in common a densely regulated institutional context that, under certain conditions, seems to act as a "beneficial constraint". But what precisely the conditions are that make a dense institutional environment an asset rather than a cost is far from clear.

15. Inevitably, the last question has to do with the likely future of the ESM, and especially with the effects of globalization. The model at present is under pressure, because of the costs of social benefits and an ageing and mobile population, neo-liberal attacks on the rigidity of the model and an emphasis on efficiency in the global competition rather than on equity. Also, through the new media and modern forms of mobility of goods and people the stability and sustainability of the ESM has become, in a critical way, interwoven with the non-European world. To what extent can a normative, and perhaps empirical, emphasis on the beneficial effects on human and social capital formation, ensure its resilience?

The European Financial Model

16. Much like the European Social Model, Europe has developed its own distinct financial model. This model co-evolved alongside the others firmly rooting it in Europe's social, political and cultural structures. The early medieval Italian merchant banks developed into a modern, bank-based financial system that still dominates Mediterranean, Continental and Nordic Europe. This European model of finance can be characterized as a high-trust, corporatist system that largely relies on bank finance. Close ties between private individuals, corporate customers and national governments and their banks were the

basis on which much of our financial model rested. These close long-term ties aligned incentives. But this model proved very sensitive to collusion and a lack of dynamics and competition. Moreover, it has been exposed – perhaps more so than the European social, political and cultural models – both from the outside and from within, to strong competition from the more cut-throat, low-trust, "greed-is-good" Anglo-Saxon model of finance.

17. The high-trust relationship of the old system lingered on, but suffered a severe blow in the recent financial crisis. Trust in bankers has plummeted. Clients and politicians woke up to the fact that high incentive pay and intense international competition have changed our bankers from trusted professionals serving their clients to employees serving their shareholders. We cannot return to the old ways by simple decree. The old model proved not to be resilient in the face of competition and trust is easier lost than rebuilt. But adopting the Anglo-Saxon low-trust market based model (or the Chinese state-based system for that matter), is not an option either. They simply do not fit within the European socio-cultural context.

18. The European model will continue to rely heavily on private (i.e. relational) banking, in which neither the state nor pure market transactions dominate. Such a high-trust banking system has low transaction costs and fits well with the general social, cultural and political structures in Europe. But the new European financial model has to build institutional structures that enable European banks to mobilize and direct resources to productive financial innovations and real economic value creation in the economy while preventing them from going astray. We need to analyse carefully what went wrong in the specific European model. Based on that analysis we also need to design institutional structures that fit the European context. Due to the creation of the Economic and monetary Union with a common currency and a fully integrated capital market, the design of such a system needs to be on the European level, requiring the transition of national financial systems – with their own cultural, historical and institutional characteristics – to a synthesized common framework where best practices are maintained. A vital, efficient and stable financial sector is essential if Europe is to have smart, sustainable and inclusive growth.

19. The challenges of making the transition to more sustainable energy, transport and resource-use also pose a big challenge for the European financial model. Ageing will imply that a large(r) proportion of the population is not producing but instead consuming accumulated wealth. That is, resources available for investment will fall, while substantial investment will in fact be needed to replace our ecologically obsolete capital stock at the pace required to achieve Europe's 2020 ambitions.

20. A related question can be raised when we realise that the European private bank-based financial model was and is less effective than competing models in mobilizing funds and resources for risky, early stage investments in knowledge creation and innovative venture creation. As emerging economies develop, the global division of labour is shifting and Europe is increasingly forced to compete on early stage, innovative products and services. This transition from a managed, industrial to a creative, entrepreneurial society implies that finance also needs to shift gears. Managing such risks may prove easier in a high-trust relationship-banking model, but to date the evidence suggests the opposite. We also need to explore new forms of banking or intermediation, like crowd-funding, that serve a sustainable entrepreneurial society.

21. An integral part of the European financial model is of course the Euro. The fundamental flaws in the current Economic and Monetary Union were well understood from the beginning. Low labour mobility and limited fiscal federalism imply that unsustainable debt builds-up, as automatic adjustment mechanisms to current account imbalances are absent. Countries running structural current account surpluses must accept (wage) inflation to avoid forcing wage deflation on those with deficits. The deficit countries instead must limit wage inflation and resist funding their deficits with cheap debt. This, however, includes private as well as public debt and is hard to orchestrate. It will not be enough to discipline the budgets of member states. The European financial model need a common currency. And that common currency needs a carefully designed institutional framework that allows for the absorption of asymmetric shocks as well as deals with structural divergence.

22. In short, the institutional foundations of the European Financial Model need to be adapted in order to enable the European financial sector to serve society in new and better ways.

The European Political Model

23. Despite having made a major contribution to peace, stability and prosperity on the continent, as recently recognised by the Nobel Committee in Oslo, the European Union's and especially the Eurozone's resilience has been called into question over the past few years. The problem has many historical facets, but they can all be traced back to the increasing disalignment between the various logics of political representation: electoral responsiveness, problem-solving responsibility, consensus and legitimacy. Two major questions arise: which European political systems have shown resilience in the past, even within otherwise divided and unequal societies, and what lessons might be learned for the present as we face similar existential legal, political, strategic and economic challenges? During modern history, the democratic nation-state has emerged as the most appropriate form to reconcile (in a virtuous way) responsiveness, responsibility and legitimacy. While opening up promising avenues to move beyond the nation state, European integration has been posing at the same time increasing challenges to the representation nexus (a syndrome often referred to as the "democratic deficit"). How can the EU make sure that a novel form of multinational, multi-state, multi-level, and thus essentially "compound" system will grow into a large scale democratic and legitimate polity? In order to answer such an essential question, in-depth research is required on at least four different fronts.

24. What is needed first, is a better understanding of the historical processes which during modernity led to the formation of that unique political system which is the democratic nation state, in its manifold institutional variants throughout the continent.

25. A second line of research must investigate the potential resilience of the EU as a multi-layered set of democracies. A multiplicity of sovereign democratic systems and the relationship between/among them are frequently seen as having profoundly negative implications for democracy from the start. A plurality of peoples either poses a fundamental drawback to democracy because it is necessarily out of touch with citizens and collective political identities, or it represents a situation that needs to be redeemed by the formation of a single democratic system on a European or even global scale. This dilemma demands inquiry into whether a consistent theory of popular sovereignty is possible in a setting of institutionally connected sovereign peoples. If we want to be sure that Europe's "government of the peoples" is resilient, the heart of the matter becomes the question: under what conditions is it feasible to choose a political order of common government by the peoples.

26. Of increasing importance is the issue of the possibilities for addressing the challenges of "representation" through "experimentalist" governance. Over the past two decades, the EU has widely developed novel forms of governance which diverge from conventional hierarchical or "command-and-control" models by their reliance on coordinated learning from decentralized experimentation to advance broad common goals. These in turn have frequently enabled the Union to produce innovative regulation, which is widely considered to be of equal (if not superior) quality to that of other developed democracies. This innovative regulation stretches out to various policy domains: from competition, product safety and environmental sustainability to data privacy, anti-discrimination, and fundamental rights. At the heart of experimentalist governance are forward-looking or dynamic forms of accountability, based on actors' recurrent obligations to justify their discretionary choices in pursuing common goals in comparison to those of similarly placed peers. In an increasingly complex and uncertain world, such dynamic accountability may constitute a promising alternative to the classic dilemma of democratic representation between ex ante selection and ex post sanctions, while responding to the widespread call for more continuous forms of interaction between representatives and those who are represented. Within the EU, these developments require empirical and theoretical research of the evolving relationship between experimentalist forms of governance and changing practices of democratic representation at both national and European levels, not least in response to the Euro crisis.

27. The fourth set of questions circle around the "multi-level" nature of the EU. The Union is a novel form of nested political units and levels of decision-making: local communities, regions, nations-states, and supranational institutional. The picture is complicated by at least two additional elements. The first is that cultural boundaries are sometimes larger (e.g. "Nordic" or "Germanic" Europe) or smaller (e.g. historical nations such as Scotland or Catalonia). The second element is that the decision-making competencies of each level of government vary: not

only within national borders but also depending on policy areas. For example social services are typically a prerogative of local government, while competition and monetary policies have been centralized at the EU level; some countries take part to certain policy spaces, other don't. How can the disparate, often conflicting pressures generated by this multi-level configuration be reconciled, in order to build a new model of virtual "nested" federalism?

The European Cultural Model

28. When we define 'culture' broadly, including political, economic, social and cultural institutions, family systems , consumption patterns, expressions of civil society and public sphere, forms of urbanization and patterns of migration, one might argue that it is impossible to speak of a homogenous European Cultural Model. Since the Middle Ages there are marked differences between the North and the South, as well as the East and the West. Especially the East-West division has left marked traces in the way societies developed culturally. The demographer John Hajnal for example in the 1960s described what he called the 'European Marriage Pattern', distinguishing between a Western model with a relatively high marriage age and a substantial part of the population that remained unmarried and an Eastern model (East of the line St. Petersburg-Trieste) with a much lower age at marriage and high nuptiality, a pattern that we also see in large parts of Asia and which would explain greater gender equality and individualism in the West.

29. Others have pointed at the legacy of feudalism in the East, with low urbanization rates, weak civil society and strong authoritarian states, characterized as a 'coercion intensive path', versus the North West of Europe where cities were much stronger and independent and states (like the Netherlands) developed along a capital-intensive path. As a result democracy, relatively independent social and economic institutions, forms of civil society and public sphere developed much faster and were more deeply rooted in Western Europe than in the Eastern part or in those parts of the world with strong imperial traditions, like Russia and China, or where colonialism left its traces (Africa, parts of Asia, Latin Americas).

30. Next, there are clear differences between the North and the South, or more specifically the North West (the Low countries and Great Britain, and later on Scandinavia) and Europe roughly South of the river Loire. This 'little divergence' goes back to the early process of urbanization since the 15th century, when the North West became the dominant urban and commercial centre, taking over from Southern Germany and before that Northern Italy and the Middle East. It was from then on that North-western Europe developed highly urbanized, monetized, commercial society along with a process of proletarianization that included large parts of the (urban) population in an early form of capitalism. This had important consequences for the building of strong urban economic, intellectual (universities), social and cultural institutions that functioned largely independent from the state. At the social level we see the emergence of a marriage pattern that favoured the relative independent position of women, and that of children versus their parents. The development of nuclear families and more individualized patterns of inheritance contributed to these modern forms of European Culture, long before the modern era. In Southern (and Eastern) Europe on the other hand, extended families, with stronger mutual dependencies, remained much stronger, which leaves their traces until today (for example the resistance in Spain and Italy against homes for the elderly).

31. Finally, it is interesting to notice the marked differences in the in- and exclusion of migrants in various parts of Europe, ranging from a – especially in the long run - 'full citizen' model in the cities, and later on nation states of North Western Europe to various exclusionary practices, on the basis of class, religion and ethnicity in Central and Eastern Europe, and finally segmented forms of inclusion in the Dutch Republic and the European part of the Ottoman empire.

32. This brief overview of some of the major long term trends in European History since the Middle Ages has highlighted a number of systemic regional differences which make it highly problematic to speak about 'the' European Cultural Model. At the same time we see a growing convergence in the 19th and 20th centuries when it comes to processes of state formation, democracy, gender equality, individualism, civil society and public sphere, greatly enhanced by the rise after World War II of a global Humanitarian regime. Realizing the atrocities of Nazi Rule, with Auschwitz as a powerful symbol, people and politicians stressed the importance of non-discrimination and equality, and the development of the European Union. It is interesting to note that many of the characteristics that developed in North Western urban societies

already in the early modern period were gradually adopted as the dominant norm and have slowly spread to other parts of Europe (and the world for that matter). Although this is a far from a linear and top down process, remember the Yugoslavian civil war, we may conclude that we are now closer to a European Cultural Model than ever.

33. However, the creation of a broader, yet still homogenous Europe, which must continue to be a fundamental interlocutor for the rest of the world, will have to come to terms with the continuing existence of long-established, sometimes conflicting identities and allegiances at the local, regional and national level. It will also have to accommodate the emergence of new identities as a result of Europeanisation, globalisation, and the integration of new migrant groups. The construction, legitimation, and transformation of identities involve complex processes which are historical, cultural. linguistic and social, as well as political and economic. They encompass and influence all aspects of the life of individuals - language, memory, customs, values, religion, political allegiances, just to name a few. Realising how identities are discursively shaped and change, or remain unchanged, in response to new circumstances is therefore essential to the future of Europe.

34. Europe has, unlike many other countries or regions made up of diverse and heterogeneous units (e.g. the US, the ASEAN), adopted an integrative identity policy of a 'unity in diversity' type. This has meant, among other things, close attention to cultural and linguistic diversity, groupings and sensibilities. Whether it has been a success in terms of enhancing integration is an open question. Linguistic and cultural identities have been brought up recently in a defensive spirit in connection with attempts to integrate higher education and raise its quality, but also in a more negative connection with the dramatic recent rise in several European countries of nationalistic political movements. The current discourse against immigration, cosmopolitanism and Muslims, and the nativist and nationalist tendencies to close off Europe from the rest of the world, may endanger the open, adventurous and curious nature that characterizes and has characterized European societies for so long.

35. Humanities and social sciences research is vital to the understanding of the cultural and linguistic construction, historical emergence and on-going transformation of identities as well as the resistances offered to such transformations. Social and historical research can shed light on the origins and development of the dialogue between an overall European identity, local allegiances and the perspectives of immigrants; it can shed light on the vague but all-pervasive agency of culture and cultural (self-)representations in these identity formations; it can facilitate an understanding of how European citizens can see themselves, and operate, as citizens of the world; it can identify the most crucial aspects of the dynamic tension between centre and peripheries; it can explain processes of state formation, democracy, gender equality, individualism, civil society and public sphere; it can give an answer to questions which are, at the same time, historically and discursively relevant and urgently topical.

The organisation of the Flagship Initiative

36. Members of LERU together with partners elsewhere in Europe, including partners of the EU12, would be able to form a consortium to implement this proposed Flagship Initiative. It is essential that the Flagship Initiative governance and management provide strong, flexible leadership through a high-level scientific board.

37. The Flagship Initiative should combine top down and bottom up research, with work packages addressing the four themes, but also with funding for competitive calls. These competitive calls will allow researchers from outside the consortium to propose research projects and to receive funding from the Flagship Initiative. Proposals will be evaluated by peer reviewers from outside the consortium. We expect to see many research proposals and approaches that the consortium will not have considered itself.

38. Finally, results of the research should be translated into clear policy recommendations. This should be done by adding to the consortium a policy unit which will be responsible for the translation of the research outcomes into policy recommendations.

LERU, 9 July 2013

Agenda for Ethics Research in "Horizon 2020"

Horizon 2020 demonstrates the need for innovative scientific research and innovation in a wide range of disciplines in order to tackle these challenges successfully. In this Statement the LERU members present ethics as essential in the success and scientific quality of Horizon 2020. Ethics offers the theoretical and practical tools to deal with the role of values in scientific and societal challenges. In this way ethics plays a crucial role in fostering responsible research and innovation.

Introduction

1. The proposals for Horizon 2020[1] show the need for innovative scientific research in a wide range of disciplines in order to tackle the major societal challenges that have been identified in the Europe 2020 strategy[2]. LERU has already presented its view on the positive role that the Social Sciences and Humanities can play in this process[3]. The present statement elaborates further on that Advice Paper and presents ethics as an essential discipline to deal with the normative dimensions of the themes and topics mentioned in Horizon 2020. The claim that ethics is essential to foster responsible research and innovation is further elaborated in this statement and ideas are presented on how this can be operationalized. In the Annex, specific ethical questions related to the themes of Horizon 2020 are presented with best practice examples in ethics research with a multidisciplinary character.

Ethics and the normative dimensions of Horizon 2020

2. Horizon 2020 has ambitious aims that not only presuppose empirical claims, e.g. with respect to natural resources, available technologies or existing infrastructures, but also set specific goals, e.g. regarding sustainability, health and well-being, food production, the bio-based economy, and resource efficiency. These goals show that the research themes are not ends in themselves, but means to realising European commitments to human rights and values. These rights and values presuppose normative claims about how humans should treat one another, what makes for good society, and how responsible governments and businesses should behave. **Ethics**, being a normative discipline that offers theories and tools for systematic reflection on normative claims and questions, can **play a central role** in three ways, namely by:

- **Enabling better research design**
  Research can benefit from awareness of normative presuppositions and (future) ethical issues at an early stage. Clarity about the conceptual difficulties involved in key terms (e.g., privacy, biodiversity or the market) and about the normative dimensions of a research topic can facilitate finding the most apt scientific models to tackle societal challenges and to improve the quality of science. For example, awareness of the normative assumptions related to quality of life and autonomy is essential to design research in the fields of aging or to study fundamental mechanisms that underlie addictions. This contributes to high quality research and the possibilities to valorise the research results in the context of the grand societal challenges.

- **Translating fundamental commitments into research practice**
  Ethics reflects on fundamental rights and normative concepts such as dignity, freedom, equality, solidarity, justice and sustainability while contributing to the translation of these normative anchor points in the context of practical research. For example, ethics helps to bridge the gap between the fundamental right of freedom and practical questions on guaranteeing consumer choice. Furthermore, it contributes to a better understanding of why themes like sustainability and privacy should be given due attention.

- **Enhancing debate and building frameworks and**

1 http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

2 European Commission. *Communication from the Commission. Europe 2020. A strategy for smart, sustainable and inclusive growth.* COM (2010) 2020.

3 LERU (2012), *Social sciences and humanities: essential fields for European research and in Horizon 2020*, June 2012.

guidelines to increase public trust and acceptance and ensure that ethical norms are not violated
Ethics can enhance the quality of a discussion by critically assessing the validity and acceptability of the arguments being put forward. It can also develop defensible guidelines to ensure that important ethical norms are not violated and to help resolve concrete value conflicts (for example, between sustainability and social justice or between security and privacy). Finally, ethics helps to ensure that scientific projects are not thwarted by low levels of public acceptance.

For example, research and the consequent public debates on technologies, such as biotechnology, and new techniques such as animal cloning showed the need to deal with ethical and socio-cultural diversity in public debates and the relevance of practical frameworks to discuss and evaluate research results.

3. In short, ethics contributes to responsible research and innovation from the early stages of design to the later stages of application and translation of research.

Ethics from the start

4. Normative dimensions and the need for ethical research were recognized and have received ample attention in earlier European Research Framework Programmes. Nonetheless, LERU argues that there is room for improvement in Horizon 2020. In previous framework programmes the contribution of ethics tended to be restricted to the end of the research chain, and ethics mostly played a role in formulating constraints on scientific developments or focused on problems of public acceptability.

5. Notwithstanding the relevance of this role of ethics, we underline that attention to normative questions should be broadened and occur at all stages of scientific inquiry. Since the Horizon 2020 project itself and the decisions to be taken in it raise normative questions, we emphasize the need to address these questions from the very start of the research process. Therefore, LERU **proposes** that:

   a. systematic reflection on the normative dimensions of scientific and societal challenges will be embedded in the structure of Horizon 2020 itself. Ethics should not only form part of the Social Sciences and Humanities sections, but should be recognized and included in all parts of Horizon 2020. The experience of the LERU members is that ethics is of added value to societal challenges if it is directly related to research in the fields of health, agricultural, energy, or climate and sustainability.

   b. attention to the normative questions should be taken into account from the very start. For example, ethics should have a prominent role in the setting of scientific objectives which help to identify potential societal problems or low levels of acceptance in an early phase.

Multidisciplinary approach

6. To make this proposal operational, LERU urges a multidisciplinary approach in which ethics and other scientific disciplines interact continuously and systematically.

7. On the one hand, attention to the normative dimensions of one's research field must be seen as part of the professional responsibility of scientists for responsible research and innovation. At the same time, the contribution from science is essential for well-informed and evidence-based ethical reflections or decisions. Therefore, ethical reflection should not take place without cooperation with and active participation of partners from the involved scientific disciplines.

8. On the other hand, ethics offers the practical and theoretical tools to take the lead in the process of clarifying conceptual difficulties of central topics and in the reflection on normative problems. It is important that this role of ethics is recognised in Horizon 2020.
   Therefore, LERU **recommends** that:

   a. the normative dimensions of scientific and societal challenges are addressed in a multidisciplinary way;

   b. the independent role of ethics be recognised. As an independent body of expertise ethics can be of added value to natural and life sciences, but also to other disciplines such as law and social science.

9. The experience that the LERU member institutions already have with this multidisciplinary approach (see the Annex) shows that such a close cooperation between experts leads to an improved understanding of the problems at stake and to an awareness of options for the future that otherwise may remain foreclosed.

Annex

This annex to the "Agenda for Ethics Research in Horizon 2020" is a further elaboration of the statement. It presents specific ethical problems and dilemmas that are related to the societal challenges mentioned in Horizon 2020. The aim is to (a) show the added value of ethics in tackling the societal challenges, (b) stress the importance of a multi-disciplinary approach that takes ethics on board from the very start and (c) illustrate the idea that underlie the Agenda with some examples of current research projects.

Introduction and outline

This document follows the structure of Horizon 2020 and focuses on the three major elements of the project: generating excellent science, creating industrial leadership and tackling societal challenges. The main focus, however, will be on the technologies mentioned in "industrial leadership" and the grand societal challenges. This should not be taken to imply that the "excellent science" element does not raise normative questions. However, since this element aims at contributing to the resolution of societal challenges and developing new knowledge though enabling and industrial technologies, most of the ethical issues raised here also arise in other parts of Horizon 2020. More specific to the "excellent science" aspect are questions of research integrity. These are, however, part of broader LERU projects on academic freedom and integrity[1].

This annex first presents some important ethical questions raised by technologies (part 1) and then sets out some normative dimensions and ethical problems related to the societal challenges (part 2).

Part 1
Ethical questions related to new steps in existing technologies

In Horizon 2020 technologies play a central role. Technology is quite often one of the answers to societal challenges in the fields of health, safety and security, food and environment. In recent decades many new technologies have been developed and implemented, for example within the areas of ICT, biotechnology and nanotechnology. The development and application of these technologies has already elicited public debate and underlying ethical questions have been highlighted in previous research. Nonetheless, it is important to further analyse ethical questions that are raised by technologies. In general, **ethics contributes** to improving our understanding of:

- the likely efficacy of technologies in resolving societal challenges;
- potential ethical pitfalls raised by the technologies themselves.

It does this by deploying philosophical tools that help to clarify our foundational moral commitments and draw out their implications for scientific practice. For example, by analysing the nature of human rights and the values that underpin them, ethics can help demonstrate the value of particular scientific projects and address more general ethical questions regarding intellectual property rights, benefit sharing, privacy, and decision making under risk and uncertainty.

Along the lines of the technologies mentioned in the industrial leadership section of the Horizon 2020 document, we list a number of ethical questions that are specific for certain technologies. Furthermore, we highlight the different roles ethics plays (see above) by showing what this implies in the context of a specific technology.

1 See, for instance, the Advice Paper on "Academic Freedom as fundamental Right" (LERU, 2010) and on integrity "*The European Research Area: Priorities for Research Universities*", (LERU, 2011, p. 28-29).

1. Information and Communication Technologies

The European Commission's proposal for Horizon 2020[2] explicitly mentions new development of ICT, advanced computing systems, future internet, advanced interfaces and robots. In those areas, broad ethical debate already exists. Topics of those debates include, the protection of privacy in the content of internet, the relevance of social media for the concepts of social relationships, and accountability for the consequences of computer-based decisions, for example in armed conflict. In the future it will be important to address further questions from the very start of research design, for example,

- What influence will these technologies have on responsibility for public actions?
- What influence will these technologies have on the concepts of agency, social relationships and social responsibility in context of robotics?
- How should we deal with the influence of internet for public debate and the structure of democracy (e.g. the use of voting systems)?

These questions are an example that shows how fundamental philosophical discussions have direct practical consequences for the applicability and acceptability of research and innovation and for policy options in this field. Agency and responsibility are basic concepts in philosophy, but at the same time of direct influence on the questions whether an ICT innovation requires additional policy measures or whether it can contribute to basic rights, e.g. by helping people to make informed choices.

2. Nanotechnologies

The EC sees a growing global market for nanotechnologies. The EU aims to secure its leadership in this market and expects that by 2020, nanotechnologies will be "seamlessly integrated with most technologies and applications, driven by consumer benefits, quality of life, sustainable development and the strong industrial potential for achieving previously unavailable solutions for productivity and resource efficiency."[3] The current text of Horizon 2020 refers to the societal dimension of nanotechnology[4]. This implies according to the Commission "addressing the human and physical infrastructure needs of nanotechnology deployment and focusing on governance of nanotechnology for societal benefit."[5] From a LERU perspective, it is important to broaden this scope and focus on:

- the question what type of (global) government is needed to monitor the development of nanotechnology? And how to deal with plurality of views among states?
- questions regarding the value public debate on nanotechnology. Does it serve merely to improve acceptance or is it rather a part of responsible development of nanotechnology development?
- the moral questions related to the registration and tracing of new nanoparticles, and questions of risk assessment tailored to nanotechnology.

Nanotechnology is a good example to show the need of a close cooperation between ethics and natural science, but also law and other social sciences. Given the normative component, natural science alone cannot sufficiently deal with the above-mentioned topics. However, at the same time ethics cannot deal with these questions in an isolated way. It needs the input from and exchange with other disciplines to contribute to a responsible development of nanotechnologies.

3. Advanced materials

The aim is to develop materials with new functionalities and improved in-service performance, for more competitive products that minimize the impact on the environment and the consumption of resources. The societal component is not explicitly mentioned in the current texts. Nonetheless, the description includes a number of evaluative terms and concepts. A philosophical analysis of these terms is of academic interest and of practical relevance:

- the notion of "optimisation" related to the use of materials;
- the notion of historical or cultural value related to certain materials;
- the notion of sustainability related to materials that aim to reduce energy demand and facilitate low-carbon production.

2 http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

3 European Commission. *Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020*. COM (2011) 809 final, p 46.

4 Idem, p 47.

5 European Commission. *Proposal for a council decision establishing the Specific Programme Implementing Horizon 2020*. COM(2011) 811 final, p 40.

This makes the topic of advanced materials a good example of how ethics help to make implicit normative dimensions of research explicit. The development of advanced materials can benefit from awareness of the normative presuppositions that underlie notions as optimization or the reference to sustainability. This can contribute to improving the design of scientific research.

4. Biotechnology

Europe's aim is to stay at the forefront of innovation, in the short, medium and long term. It encompasses the development of emerging tools such as synthetic biology, bioinformatics, systems biology and exploiting the convergence with other enabling technologies such as nanotechnology (e.g. bionanotechnology) and ICT (e.g. bioelectronics). The societal and ethical components are not explicitly mentioned in the current texts, but have received ample attention in the former Framework Programmes. Nonetheless, further research into normative questions is still relevant. Ethical reflection is needed to deal with:

- Value or rights conflicts, such as the question whether or not biotechnology should be used for securing global food supply.
- Questions that rise with the application of biotechnology. This especially holds for questions of safety, care for the environment and health.
- The problem of plurality and respect for autonomous choices of consumers and produces. This results in questions related to intellectual property rights and containment.

Biotechnology, like nanotechnology, is a good example showing the need for a close cooperation between ethics and natural and life science. Additionally, biotechnology shows the importance of ethics as a discipline that can provide theoretical and practical frameworks as well as guidelines to deal with questions of public acceptability and public trust. The discussions on biotechnology during the last decades show that (a) it is important to enhance the quality of the discussion by critically assessing the validity and acceptability of normative presuppositions with the help of appropriate research standards and (b) there is a need to formulate well-argumented guidelines that help to deal with concrete value conflicts.

5. Advanced manufacturing and processing

The objective of advanced manufacturing and processing research and innovation is to transform today's industrial forms of production towards more knowledge intensive, sustainable, trans-sectoral manufacturing and processing technologies, resulting in more innovative products, processes and services. The aim is to combine an increase of production with a reduction in material, energy and water consumption. This aim does not merely result in technical challenges, but presupposes all sorts of value assessments. Ethics research includes:

- Making the value-laden assumptions explicit in this general aim and the technological proposals to achieve this;
- Clarifying value assessments that need to be made in order to develop and implement technologies that lead to advanced manufacturing and processing;
- Dealing with concrete value or rights conflicts;
- Formulating frameworks or tools that enable professionals to deal with the normative dimensions.

This theme shows the need to use and integrate different fields of applied ethics, such as environmental ethics, technology ethics and business ethics. By combining these perspectives and by including them in all parts of the research it is possible to come to responsible research and innovation.

6. Space

Maintaining a globally leading role in space by safeguarding and developing a competitive space industry and research community and by fostering space-based innovation. That is the aim described in the flagship initiative 'An industrial policy for the globalisation era' of the Europe 2020 strategy. Space is a topic that has not yet been discussed widely in ethics. Nonetheless, ethical research contributes to the discussion on:

- who should take responsibility with respect to the pollution of space, more specifically who should clean it;
- the role space plays in geopolitics and the problems of domination in space;
- the exploitation of space in order to safeguard current lifestyles.

This makes the topic of Space a good example of how ethics helps translate fundamental commitments into research practice. By reflecting on fundamental concepts such as responsibility, freedom, and democracy, it contributes to the process of building bridges between excellent and fundamental science and questions of application and policy.

Part 2
Ethical research and the societal challenges

Europe is facing a number of important challenges. These are headed under priority 3 of Horizon 2020 'Societal Challenges'. In this part of the annex a number of questions that were highlighted above return as relevant ethical questions in need of further reflection. However, these societal challenges also raise many new questions. Some are specific for a certain problem, while others have a more generic character. This especially holds for ethical questions on politics and democracy (see also section 6) and on the relation between ethics and other academic disciplines and ethics and politics. Further topics that require ethical research are presented along the lines of the societal challenges.

1. Health, Demographic Change and Well-being

In the Horizon 2020 proposals[7] it has been signalled that the costs of health and social care systems are rising as a result of the care and prevention measures and the increasing life expectation. The aim is to ensure health and well-being, but at the same time lower the costs to such an extent that the health system remains financially sustainable. To achieve this aim scientific tools and methods to support policy making and regulatory processes are needed. This includes the development of methods to monitor the safety, efficacy and quality of health technologies. Additionally, support for "improved risk assessment methodologies, testing approaches and strategies relating to environment and health"[8] are required.

In bioethics on all the mentioned topics debates already exist. These are debates with established methodologies, publication media and research institutes. In the last 20 years the European Commission has strongly facilitated the debate in Europe. Currently, there is a need to further develop the methodology of ethics research in this area. Important research topics that are:

- The ethical significance of instruments for the measurement of welfare and their applicability in health care.
- The further development of the human rights regime as a normative framework for bio-ethics.
- The role of health care in the context of demographic changes.
- The ethical assessment of the whole genome diagnosis.
- New possibilities of prenatal testing influencing the scope of the application of genetic testing, and raising questions of individual responsibility and data protection.
- New possibilities of neuroscience influencing the discussion on (patient) autonomy.
- New possibilities with respect to enhancement, especially related to the question of who has access to this new development and who has not.

A focus on these topics will further improve the quality of the systematic reflection on the normative dimensions of the health-related challenges.

EXAMPLE

Nutrigenomics as a common challenge

The combination of a number of the above-mentioned technologies resulted in the launch of the human genome sequence in 2000. This leads to many new possibilities in the field of food and nutrition. It especially opens the route towards personalised nutrition. This implies that a diet is tailored specifically to individuals, according to their individual physical and genetic make-up.

In the Food4Me project[6] the potential of personalised nutrition is researched. This project is an example of how the societal, ethical and legal aspects can be embedded in the structure of a project. The contribution of ethics is not restricted to one specific work package, but is part of the interdisciplinary cooperation in the project.

The analysis of the ethical and legal issues are used to shape the research and to build a framework for the outcomes of other parts of the project such as consumer studies, business models and human intervention research.

Title: Food4Me (2011-2015, FP7-funded) LERU member involved: *Lunds universitet*

6 http://www.food4me.org/

7 http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=h2020-documents

8 European Commission. *Proposal for a council decision establishing the Specific Programme Implementing Horizon 2020*. COM(2011) 811 final, p 53.

EXAMPLE

Integrating ethics from the start

Integrating ethics and science as part of responsible research and innovation implies close cooperation between disciplines. In this context education is a highly relevant aspect. This assumption has been the start for the project "Research network for establishing Programmes for Joint Teaching of Bioethics". In this project disciplines ranging from law, philosophy and anthropology to medicine, biology, engineering, food science and nursery were brought together with the aim to incorporate ethics in the curriculum of all the disciplines of the universities participating in the programme.

This resulted in the development of main and elective courses in ethics, additional teaching materials, and the preparation of ICT tools that help to share best practices.

Title: Research network for establishing Programmes for Joint Teaching of Bioethics (ALFA, 2000-2004, FP5 funded)
LERU member involved: *Universitat de Barcelona*

2. Food Security, Sustainable Agriculture, Marine and Maritime Research and the Bio-Economy

The Commission stresses the need for a transition towards an optimal and renewable use of biological resources and towards sustainable primary production and processing systems that can produce more food and other bio-based products with minimised inputs, environmental impact and greenhouse gas emissions, enhanced ecosystem services, zero-waste and adequate societal value.

Ethical questions related to agriculture and food production

Food security is still the starting point of discussions on agriculture. Nonetheless, there is a shift from a 'quantity only´ focus to a focus that includes food quality, safety and health. This leads to questions and problems for which ethics has the necessary theoretical and practical tools. In practice, ethics, together with other disciplines, contributes to answer questions such as:

- How Europe should deal with (a) potentially conflicting aims, such as the increase of food production and the reduction of the use of recourses, (b) value conflicts, such as the one between biodiversity and agriculture, (c) conflicting rights, such as the right to food and preventive measures to reduce green house gases to ensure future human rights, and (d) conflicts that result from the plurality that underlies farming and food production styles including organic and conventional farming.
- Whether there are any limits to improving the performance of (a) plants and micro-organisms and (b) how on-going development to bring the practices of food and health together can best be guided.
- A number of ethical questions relate to the autonomy of consumers, and the importance of trust and trustworthiness for the agri-food sector. This is relevant from the perspective of the moral imperative to come to informed choices by consumers, but also in the discussion on whether – and to what extent – consumers should be invited or even obliged to consume in a (more) sustainable way.

Ethical questions and animal use in food production including fisheries and aquaculture

Animals play an important role in food production and are next to plants explicitly mentioned.[9] The use of animals raises the following additional points that require ethical research:

- Are there limits to further improving the performance of animals?
- What role should ensuring animal welfare and health play in food production?
- How to deal with ethical problems related to the strategies for the eradication of animal diseases including zoonoses. This question has a direct link with human health.
- The striving for sustainability and of making fisheries more environmentally friendly results in a number of theoretical and practical conflicts.
- The role of aquaculture in the quest for a more sustainable fish production (link with ethical questions of the domestication and welfare, and with human health).

9 European Commission. *Proposal for a council decision establishing the Specific Programme Implementing Horizon 2020*. COM(2011) 811 final, p 55.

Ethics of bio-based economy/ industries

Agriculture is not only used for food production. Horizon 2020 aims to "accelerate the conversion of fossil-based European industries to low carbon, resource efficient and sustainable ones."[10] This raises ethical issues such as:

- The question how to deal with the conflict between/ trade-off between food, feed and bio-fuels;
- Questions related to the use of (bio)technologies that are necessary to produce bio-based products;
- The question how we should deal with waste streams (impact on environment);
- Questions related to the moral dimensions in life-cycle analyses.

3. Secure, clean and efficient energy

The objective of Horizon 2020 is to contribute to the transition towards a reliable, sustainable and competitive energy system, in the face of increasingly scarce resources, increasing energy needs and climate change. The aim is to reduce greenhouse gas emissions by 20 % to below 1990 levels by 2020, with a further reduction to 80-95 % by 2050. These goals cannot be realised without innovation but also not without making deliberate ethical assessments.

Reducing energy consumption and eliminating energy waste
This topic raises:

- ethical questions with respect to the balance between individual freedom and the collective character of the consorted action that is needed to reduce energy consumption and to make energy more sustainable. Can or should individuals be pushed in the direction of less energy consumption?
- the question of what criteria can be used if energy has to be distributed as a scarce resource.
- challenges with respect to the criteria that are to be developed in order to give individual citizens or institutions tools to make informed choices with respect to energy consumption.

New energy resources

Given that fossil fuel resources are limited there is a clear need to look for new energy resources. This raises questions:

- of justice with respect to the distribution of costs (financial, cultural and environmental) in the search for new energy resources;
- regarding the position of ecosystems and biodiversity in our search for (fossil) fuels which will remain on the agenda.

4. Smart, green and integrated transport

Similar to the third challenge, the policy target in the transport challenge of achieving a 60 % reduction of CO^2 by 2050 is more than a technical one. It also requires assessments of different interests and values.

In general this societal challenge shows the need to make implicit normative assumptions explicit. This challenge is related to a range of moral values, including individual freedom of choice, freedom of movement and the value of the environment. Explicating these values is a first essential step to develop transport systems that aim to meet the goals set in the Europe 2020 strategy, because in practice these values need to be weighed or even can be in conflict with each other. For instance, this challenge will raise ethical questions with respect to the balance between individual freedom of transport and the collective character of the consorted action that is needed to build new and innovative ways of transportation. By including ethics from the start, it can help in order to understand user behaviour and social acceptance of transport systems, e.g., by analysing concepts like autonomy, rights and risks.

5. Climate action, resource efficiency and raw materials

The specific objective of this societal challenge is to achieve a resource-efficient and climate-change resilient economy and a sustainable supply of raw materials, in order to meet the needs of a growing global population within the sustainable limits of the planet's natural resources. Activities will contribute to increasing European competitiveness and improving well-being, whilst assuring environmental integrity and sustainability, keeping average global warming below 2°C and enabling ecosystems and society to adapt to climate change. This raises a number of more generic ethical questions, namely:

- What are our moral and political obligations towards future generations? How do these obligations relate

10 Idem, p 58.

EXAMPLE

Climate Change as start for a multidisciplinary research network

The combination of climate change, natural resource limitations and demographic factors raise an impressive set of political and moral problems. This include questions, such as what do we owe to future generations? How should our obligations be related to human rights? How should we deal with our limited ability to predict future developments? And how to make sure that our obligations are fulfilled in the face of various psychological and institutional obstacles?

The Research Networking Programme "ENRI-Future" starts from the claim that dealing with these problems and questions requires an integrated approach. The questions are not only relevant for philosophers, legal experts or policy makers, but are related to all disciplines involved in the dealing with questions of climate change and limited natural resources.

The ENRI-Future project is not the first to discuss these questions, but aims to interrelate the existing discourses about these topics in philosophy, law, economics and technology assessment. By bringing experts together and adequately linking the relevant discourses, the aim is to come to a better-informed understanding of what a sustainable policy requires and to formulate practical approaches towards methods and policy to deal with the moral and political questions on sustainability, precaution and the rights of future generations.

Title Rights to a Green Future. Uncertainty, Intergenerational Human Rights and Pathways to Realization (ENRI-Future) (2011-2015, funded by the European Science Foundation)

LERU members involved: *Universiteit Utrecht, Universität Zürich, University of Oxford*

to the established human rights framework?
- How should we deal with the uncertainty of the future? In practice, this forms a severe obstacle for a moral assessment of political options while an ethics of risk and precaution is still under development.
- How should we deal with value and right conflicts that occur in the process of formulating political strategies towards sustainable politics? For instance questions with respect to the balance between individual freedom and the collective character of the strategies that are needed to deal with problems of climate change.
- What is the relation between the economy and nature? What routes do we have towards a sustainable future, and a green economy? This includes the currently booming field of "climate change justice", but also an "ethics of consumption".

Sustainably managing natural resources and ecosystems

Managing resources and ecosystems suggests the availability of normative tools that enable the reaching of a "sustainable balance between human needs and the environment." [11] Such tools however need to be (further) developed.

This topic also confronts us with the question how to deal with the advantages and disadvantages of the use of environmental resources, i.e. how to deal with the situation in which water use leads to a more sustainable society, but also implies a loss in the areal of fertile soils. Finally, it requires further understanding of ecosystems both in a technical and in a normative and cultural sense.

Providing knowledge and tools for effective decision making and public engagement

At this point an analysis of the normative dimensions in political strategies towards a sustainable politics is required. What are the presuppositions and how should we deal with value and right conflicts?

Ensuring the sustainable supply of non-energy and non-agricultural raw materials

At this point the questions mentioned in the part on the bio-based economy are also relevant. Therefore, questions need to be addressed, such as how we should deal with trade-offs between food, feed and bio- fuels.

11 European Commission. *Proposal for a council decision establishing the Specific Programme Implementing Horizon 2020*. COM(2011) 811 final, p 71.

6. Inclusive, innovative and secure societies[12]

Horizon 2020 signals that the current trends at play in European societies bring with them opportunities for a more united Europe but also risks. The objective is to "enhance social, economic and political inclusion, combat poverty, enhance human rights, digital inclusiveness, equality, solidarity and inter-cultural dynamics by supporting interdisciplinary research, indicators, technological advances, organisational solutions and new forms of collaboration and co-creation."[13] Humanities and Social Sciences evidently have the tools to contribute to the themes mentioned in this section[14]. As part of the humanities ethics is also of direct added value. This especially holds for the ethical questions that are raised by the objective to achieve inclusive, innovative and secure societies. These questions include:

- What role do citizens play in the objective "inclusive, innovative and secure societies". Which contributions should we expect citizens to make to their societies? Is there a shortage of social capital in modern Western societies? If so, how to foster social capital and community relations?
- What kind of European democracy is needed? How to think about the political future of the Union?
- How can we reconcile different national and regional identities within the European Union? How to deal in a fruitful way with linguistic diversity? (e.g. such as the case of bilingualism in Belgium)
- Ethical questions of culture: Is there a common European identity? What are the chances for fostering such an identity? What does it mean to say that our societies are "multicultural"? What is the role of religion in present-day societies? Is the presence of a plurality of religious identities a threat or an opportunity for social cohesion and stability?
- The ethics of the market: What is the relation between global, regional (European) and national economic institutions: how to think about the trade-offs between these different scales of economic governance? This includes topics such as justice in trade relations, development aid etc.

EXAMPLE

Global governance as a fundamental question for responsible research and innovation

In the last decade, 'global governance' has become a central object of study for a myriad of political scientists, legal scholars, economists and political philosophers. Many have begun to realise that governance beyond the state is rapidly expanding, with significant consequences: decision making is more than ever taking place beyond the nation-state, and its increasingly important (domestic) impact is frequently beyond the control of democratically elected nation- state governments and legislatures.

The Research Programme "Global Governance and Democratic Government" intends to recast the current debate about the democratisation of global governance. This is done both through theoretical work on the concept of global democracy and through a number of empirical case studies which inform our theoretical framework.

Based on a deeper and more comprehensive understanding of the conditions under which institutions, processes and practices of global governance can be established more democratically, it is the consortium's ambition to develop, operationalize and apply a new paradigm for democratic global governance.

Title Research Programme Global Governance and Democratic Government (2010-2017)

LERU members involved: *KU Leuven, Universiteit Utrecht*

12 This section is based on the original EC proposals for H2020 and includes therefore both the 6th and 7th challenge "Europe in a changing world – inclusive, innovative and reflective societies" and "Secure societies - Protecting freedom and security of Europe and its citizens" as proposed by the European Parliament and the Competitiveness Council in their amendments.

13 European Commission. Proposal for a council decision establishing the Specific Programme Implementing Horizon 2020. COM(2011) 811 final, p 76.

14 LERU (2012), Social sciences and humanities: essential fields for European research and in Horizon 2020, June 2012.

About LERU

LERU was founded in 2002 as an association of research-intensive universities sharing the values of high-quality teaching in an environment of internationally competitive research. The League is committed to: education through an awareness of the frontiers of human understanding; the creation of new knowledge through basic research, which is the ultimate source of innovation in society; the promotion of research across a broad front, which creates a unique capacity to reconfigure activities in response to new opportunities and problems. The purpose of the League is to advocate these values, to influence policy in Europe and to develop best practice through mutual exchange of experience.

LERU publications

LERU publishes its views on research and higher education in several types of publications, including position papers, advice papers, briefing papers and notes.

Advice papers provide targeted, practical and detailed analyses of research and higher education matters. They anticipate developing or respond to ongoing issues of concern across a broad area of policy matters or research topics. Advice papers usually provide concrete recommendations for action to certain stakeholders at European, national or other levels.

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