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DIPARTIMENTO SCIENZE UMANE E SOCIALI,
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UNDERSTANDING AND TACKLING THE MIGRATION CHALLENGE:
THE ROLE OF RESEARCH

MMS-Mediterranean Migration Studies
POSITION PAPER

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Executive summary

An attention by Italy and the EU on migrations across and around the Mediterranean is more than urgent today. The migrant crisis poses to Italy and Europe a challenge whose dimensions are comparable to those of the ecological crisis of the last quarter of the last century, whose icon was the acid-rain. It was overcome by means of an epochal effort in research that brought about an industrial reconversion and a change in the mind-set of the citizens. Today, the migrant crisis requires again a research initiative that is cross-disciplinary and involves the whole domain of social sciences, humanities and cultural heritage together with mathematics, physics, chemistry, life-sciences and medicine, environmental sciences, logistics, agri-food and ICT. Mediterranean Migration Studies (MMS) is the name of the project launched by the National Research Council of Italy, which provides the basis for the approach described in this position paper. First and foremost, let it be noted that a cross-cutting initiative on migrations would integrate the perspectives opened up by the SC6 Work-Programme 2016-2017 calls on migration as well as by PRIMA (art. 185 TFEU) and the two ERANET COFUNDS ERANETMED and BLUEMED that are only focused on agri-food and water management issues in the Mediterranean area. This is not and cannot be the unique mission for Italian and European research for the Mediterranean area. The migrant crisis of 2015 has made it clear with terrific effectiveness that the most urgent objective is working towards Euro-Mediterranean societies that are inclusive, reflective and attentive to the impact migrations are having on social and cultural innovation, security and health, environment and biodiversity.

While the Italian ministries that are involved in tackling the migration challenge are: Ministero Istruzione Università Ricerca, Ministero dell'Interno, Ministero del Lavoro e delle Politiche Sociali, Ministero della Giustizia, Ministero degli Affari Esteri e della Cooperazione Internazionale, Ministero della Salute, Ministero dello Sviluppo Economico, Ministero dei Beni e Attività Culturali e del Turismo, Ministero delle Politiche Agricole Alimentari e Forestali, Ministero dell'Ambiente e della Tutela del Territorio e del Mare; the EC Directorate Generals are: DG HOME, DG EAC, DG JUST, DG GROWTH, DG SANCO, DG AGRI, DG MARE e DG ECHO. Also, the High Representative for Foreign Affairs and Security Policies is expected to take a leading role. They are all in need of the outputs promoted by DG RTD and national research agencies.

CNR proposes this document in the form of a position paper.

Introduction

Migrations play a non-negotiable role in European society: originally intended as a social phenomenon oriented towards satisfying mobility as a vital function of the human being, its significance has gradually expanded to become a benchmark of political decision-making and a decisive segment of the economical, environmental, ethical, sanitary and cultural development of society.

Migrations have become a major factor in both the socio-economic and the cultural landscapes. Research on migrations finds a place at the frontiers of science in as far as it integrates technological innovation with social innovation and eventually with cultural innovation, thus providing substantial added value to citizens of a global community.

In this beginning of this century, mass migrations across and around the Mediterranean Sea have taken the shape of a humanitarian emergency for Spain, France, Italy, Malta, Greece, Cyprus, Hungary, Austria and for Europe as a whole. Italy and the EU are dealing with the migrant crisis in all its aspects: cultural diversity, immediate reception, religious pluralism, integration, health management, social services, education and welfare. These are all challenges that European societies must come up to terms with to govern a sustainable growth. From the standpoint of research, migrations provide a highly diversified domain that is open to a great number of disciplines.

Term of reference is the ‘European Agenda on Migration’¹, state of play 14 October 2015. This position paper proposes a preliminary approach for the role of research in understanding and tackling the migration challenge – see ‘EU Funds for Migration Policies: Analysis of Efficiency and Best Practice for the Future: Study’². See also the European Council statement of 23 April 2015 on ‘The Situation in the Mediterranean’³, and the European Parliament Resolution Roadmap on ‘Migration’⁴ as well as the ‘UN Agenda 2030 for Sustainable Development’⁵.

The objective is working towards a society that is inclusive, open, pluralistic, conscious and safe, a society that is facing the challenge of the emergency of migrations through integrated measures that impact on different frontlines and sectors, including the responsibility of safeguarding cultural heritage, skills, diversities and biodiversity.

Twentieth-first-century science is global, interdisciplinary and data-driven. It is assumed that Big Data are related first and foremost to hard sciences and to commerce, but also social sciences and humanities have a substantial exposure to the opportunities offered by the exponential growth of digital data, high-speed access, high volume and high variety of information, which require new forms of analysis for observing, measuring and foreseeing social phenomena on spatial-temporal scale dimensions that are inaccessible to traditional data collecting methods. European researchers take up the new scientific challenge of adapting Data Science for Computational Social Science and for Data Humanities. At stake is a change of paradigm that involves all disciplines in the direction of a new hybrid approach in which top-down modeling of phenomena finds a new synthesis with the discovery of new cognitions bottom-up, which emerge from the big masses of available data.

MMS proposes experiments on data whose purpose is not only the validation of pre-conceived theories, but also the discovery of emerging patterns that might suggest to researchers new theories and new models, which enable a closer look into the complexity of social, economic, biological, technological and cultural phenomena.

1 http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/european-agenda-migration/background-information/docs/eam_state_of_play_20151014_migration_priority_en.pdf

2 [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/552298/IPOL_STU\(2015\)552298_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/552298/IPOL_STU(2015)552298_EN.pdf)

3 <http://www.consilium.europa.eu/en/press/press-releases/2015/04/23-special-euco-statement/>

4 <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2015-0317+0+DOC+XML+V0//EN>

5 <https://sustainabledevelopment.un.org/post2015/transformingourworld>

Migration requires a holistic approach that embraces the domains of cultural, social, environmental and economic sustainability.

Following the European Council in Lisbon of June 1992, the EU established the framework for its relations with the countries of the Mediterranean basin with a view to forming a Euro-Mediterranean partnership. This partnership became a reality at the Barcelona Conference of November 1995, which brought together the Ministers for Foreign Affairs of the EU Member States and the Mediterranean non-member countries. A Monitoring Committee (MoCo) for Euro-Mediterranean cooperation was created in 1995 to monitor and promote cooperation in R&I. In terms of bilateral relations, the current EU policy dialogue with the Mediterranean countries is framed within the European Neighbourhood Policy. In May 2011, a joint communication (COM (2011) 303) presented the *Euro-Mediterranean Common Knowledge and Innovation Space*⁶ to pull together policy dialogue, national and regional capacity building, cooperation in research and innovation and increased mobility of researchers.

The evolution of article 185 TFEU Mediterranean Sea has seen Italy play a determining role as catalyser of a defragmentation of the EU research system in its wholeness: the idea of creating a project of stable cooperation with the objective of integrating Euro-Mediterranean research was born in 2010 at the margins of the Senior Officials Forum of the delegates of the Ministries of Research of the MoCo, which was taken up again in meetings at the margins of the Euro-Mediterranean conference of Barcelona of April 2012. The MoCo of November 2012 gave a name to the initiative: *PRIMA-Partnership in Research and Innovation in the Mediterranean Area*. Eventually, in December 2014 it was submitted as an art. 185 chaired by Italy. *PRIMA*⁷ is an innovative proposal because, differing from other art. 185 based actions, it aims at involving in all its governing bodies representatives of Mediterranean non-member countries in accordance with the principles of *co-ownership, co-funding and mutual benefit*. **It is necessary to make it clear, however, that to date neither migrations nor cultural heritage are considered within the focus of PRIMA, although they are socio-economic thematic areas that are essential to a number of sectors, first and foremost to security, but also to intercultural dialogue, to economic growth especially to the cultural and creative industry, health care systems, agri-food and environment in the countries of the Mediterranean.**

Already before the outcomes of the Euro-Mediterranean Conference of April 2012 in Barcelona, encounters were held to verify with the EC the feasibility and the political will of starting an art. 185 for the Mediterranean Sea, which brought to the constitution of working-groups with delegates of ministries of Member States and non-member Mediterranean countries. The *Informal Competitiveness Council* of May 2014 in Athens and the subsequent *e Competitiveness Council* in Brussels identified the focus areas of *Water and Food*, with multidisciplinary aspects embracing health, climate change and energy, and sustainable social innovation as a cross-cutting aspect. It is clear, then, that in this framework, MMS is complementary to all actions planned in *PRIMA* and in the two ERANET COFUND ERANETMED⁸ e BLUEMED⁹. **Hence the urgency of inserting a priority on migrations on top of the already present priorities water, sea, shores and food.**

Not saying no to diversity, but catching it as an opportunity and give value to it through the social being, this is the objective of MMS. Social and cultural innovation become instrumental for promoting reciprocal understanding, reception and integration of migrants, thus becoming tools for actions of *cultural diplomacy* (see Regulation (EU) n. 234/2014 of the European Parliament and of the Council of 11 March 2014, service FPI.4 Partnership Instrument, Service for Foreign Policy Instruments, High Representative for Foreign Affairs and Security Policies). Expected outcomes are inclusion, social cohesion and intercultural dialogue within the

6 https://ec.europa.eu/research/conferences/2012/euro-mediterranean/index_en.cfm?pg=about

7 <http://www.unisi.it/programma-prima>

8 <http://www.eranetmed.eu>

9 http://www.bo.cnr.it/events/Evento%20mare%20giu2015/FabioFava_8.6.2015.pdf

Mediterranean Sea. The NORFACE¹⁰ initiative (on migrations but with no exclusive reference to the Mediterranean Sea) is an example to follow.

Innovation will play a key part in this systemic change. In order to rethink our ways of producing and acting in strongly modified demographic conditions, Italy and the EU will need new technologies, processes, services and business models that will shape the future of our economy and society. Hence, support of research and innovation will be a major factor in encouraging the transition; it will also contribute to the competitiveness and modernisation of Italian and EU industry. The SC6 work programme 2016-2017 includes a major call: *ENG-GLOBALLY-03-2017: The European Union and the global challenge of migration* (deadline in February 2017), which will grant over €5 million for innovative demonstration projects that support the objectives by fully addressing the root causes of migration and exploiting the potential of migration as a development enabler.¹¹

This position paper asks for an addition to the wide range of existing Horizon 2020 programmes supporting innovative projects relevant to migration research, in fields such as **security** (*REV-INEQUAL-02-2016: Contemporary radicalisation trends and their implications for Europe*; *REV-INEQUAL-04-2016: Intra-EU mobility and its impacts for social and economic systems*; *SEC-06-FCT-2016: Developing a comprehensive approach to violent radicalization in the EU from early understanding to improving protection*), **science diplomacy** (*ENG-GLOBALLY-01-2017: Strengthening Europe's position in the global context: science diplomacy and intercultural relations*; *ENG-GLOBALLY-04-2017: Science diplomacy for EU neighbourhood policies*) and **cultural cooperation** (*CULT-COOP-05-2017: Religious diversity in Europe: past, present and future*; *CULT-COOP-08-2017: Virtual museums and social platform on European digital heritage, memory, identity and cultural interaction*).¹²

The idea is to aggregate research performing organizations, universities, research infrastructures and cultural institutions for actions on migrations, cultural heritage, interreligious and intercultural dialogue, security, agri-food, health within the Mediterranean.

The main goal is to shape a path of sustainable innovation per migration studies, a path that anticipates relevant priorities and challenges to be set at the global level as regards the adoption of new technologies, enhancement of security, life-quality, health-care, environment, production growth and social cohesion.

Facing the impact of migrations on the societies of the Mediterranean, MMS pursues five **objectives**:

- to contribute to the objectives of the *European Agenda on Migration*;
- to reshape the sector of Migration Studies in the form of a cross-disciplinary activity;
- to defend diversity as heritage of European society while promoting an inclusive, innovative and reflective society in the wake of the migrant crisis;
- to warrant security and quality of life while governing the impact of migrants on health, demographic growth and welfare;
- to account for the impact of migrants in terms of quality of the environment and biodiversity.

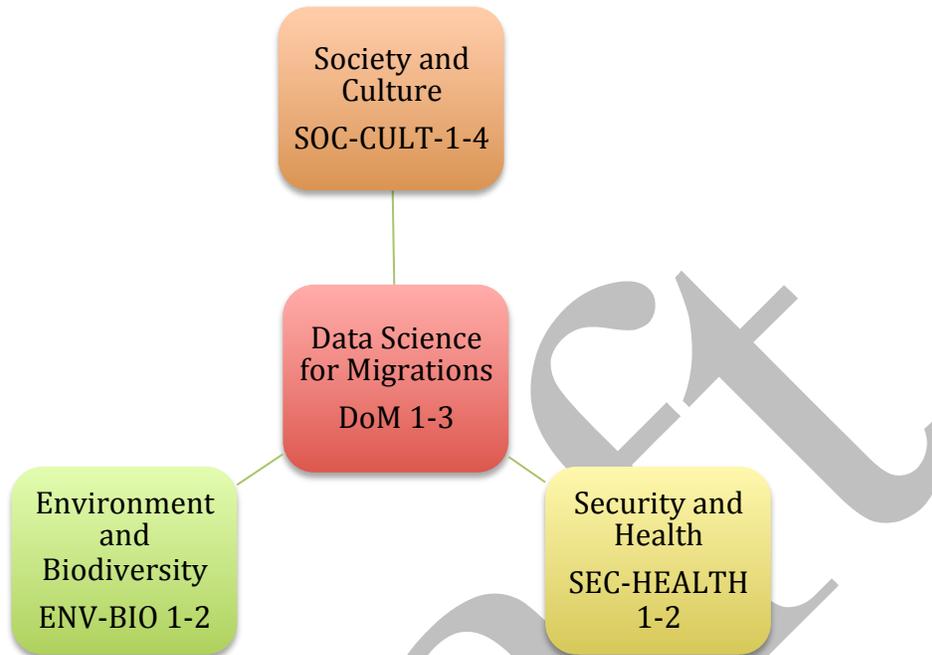
The thematic areas considered irradiate from the elaboration of a central nucleus on **Data Science for Migrations**, the phenomenon of migration in the sense of epochal mobility in its complex and articulated shape, and embrace a series of aspects that are first and foremost socio-economic and cultural but have a substantial bearing on security, health-care, environmental and nutritional issues. In correspondence with its objectives, MMS is planned on four sectors that structure an effectively cross-disciplinary approach to the phenomenon, which is both an emergency to be governed and an opportunity to be taken on. They are: **Society and Culture**,

¹⁰ <http://www.norface-migration.org>

¹¹ http://www.ec.europa.eu/research/participants/.../h2020-wp1617-societies_en.pdf

¹² http://www.ec.europa.eu/research/participants/.../h2020-wp1617-societies_en.pdf

Security and Health, Environment and Biodiversity. The four interacting areas are developed in eleven topics, as explained by the graph.



Data Science for Migrations

DoM-01: Community Building on Migrations

DoM-02: Social Mining, Big Data and Socio-Cognitive Modeling

DoM-03: Data Science and Research Infrastructures for Migration Studies

Community building, socio-cognitive modeling and research infrastructures are the nucleus that manages Big Data input and output to the cross-cutting research endeavour on migrations, thus making it possible to achieve a level of flow-analysis with a spatio-temporal granularity that is much finer than the current ones based on official data (e.g. the DIOC database for migration flows set up by OCSE). The object is to construct models new tools for nowcasting and forecasting for migration flows that are extremely realistic.

Society and Culture

SOC-CULT-01: Trends, Scenarios, Policies

SOC-CULT-02: Migrations and Growth

SOC-CULT-03: Cultural Processes for Integration

SOC-CULT-04: Technologies for Cultural Innovation against the Destruction of Heritage

Right now, Mediterranean migrations are seen as an emergency and a social expenditure. In the long term, however, they are due to become a substantial factor of growth starting with an effective management of the supply chains of reception and integration. Migrants are less and less contained within the borders of states. They leave and go, keeping in touch with their countries of origin and with local resident communities in the countries of destination. Missing integration has high costs due to its physical and economic impact on both migrant subjects and receiving society. Migrations have a connection with welfare and its efficient use: in an ever-growing world population, this resource plays a fundamental role. It cannot be universal, for it serves to satisfy the needs of a determinate population. Migrants have an effect on its implementation, they stress the sustainability of the system, and require the production of new laws, the revision of national budgets, educative systems, non-homogeneous resource allocation among beneficiaries, public health and security issues. A thematic issue of this importance and gravity cannot be dealt with mere informative tools. It must be dealt with nationwide projects and programs that are strategic and structural. For this reason, Member States and the EU

are allocating substantial resources to contrast xenophobia and extremist violence in the framework of the Countering Violent Extremism plan. As a consequence, there are many demands and offers from public and private subjects that work together for the reception and integration of migrants. Mediterranean migrations ask for a societal reflection that is historic, philosophical, juridical and religious and that promotes and revitalizes experiences of co-existence and systems of peace making in the relations of cultures.

Security and Health

SEC-HEALTH-1: Security

SEC-HEALTH-2: Health of Migrants and its Impact on the Social and Health-Care System

The control of migration flows, the protection of the lives of migrants and the prevention of the infiltration of terrorists are some of the main necessities related to security. These requirements entail the control of the borders in its various forms (sea, land and unconventional routes) by accounting explicitly the need to not delay the operations associated with the first humanitarian aid. In this frame, the continuous monitoring of migration flows (especially at sea) allows rescue and recovery operations more efficient, thus saving human lives. The ever-growing number of men and women migrating across and alongside the Mediterranean to EU Member States presents important challenges to the European health-care system. The phenomenon is aggravated by the recent surge in migration of people fleeing wars, threats and poverty in Africa and the Middle East. The predisposition to develop diseases is partly dependent on ethnicity and country of origin, but can be profoundly modified by environmental, cultural, socio-economic and lifestyle changes, as well as by the associated stresses occurring in the country of settlement. There is an urgent need to understand these interactions and to plan effective screening and integration strategies to preserve the health of incoming and resident people, and reduce its impact on National and Regional health-care systems. It is also important to face in an adequate manner the perception of EU citizens on the risk of contagious diseases.

Environment and Biodiversity

ENV-BIO-1: Natural Resources, Climate Change and Migrations in the Mediterranean

ENV-BIO-2: Biodiversity, Migrations and Sustainable Agriculture

The choice of migrating is either due to current changes in the terrestrial ecosystem or is caused by political, demographic and economic conditions, in which the environment is an amplifying factor of the deterioration of living conditions. The diverse stress factors on the human being and the environment are connected, although water management remains the main cause. Biodiversity is to be studied in relation to the mobility of migrants, which has an impact on European the European agri-food system. It is necessary to combine global climate change models with local scenarios of social and economic growth.

DATA SCIENCE FOR MIGRATION – DoM

Community building, socio-cognitive modeling and research infrastructures are the nucleus that manages Big Data input and output to the cross-cutting research endeavour on migrations, thus making it possible to achieve a level of flow-analysis with a spatio-temporal granularity that is much finer than the current ones based on official data (e.g. the DIOC database for migration flows set up by OCSE). The object is to construct models and new tools for nowcasting and forecasting for migration flows that are extremely realistic.

DoM-01: Community Building on Migrations

A strong effort for community building is associated to migration. It includes, among others, teaching linguistic capabilities, economic opportunities, accommodation and welfare, safe connection, cultural heritage, as well as training programs and repositories of educational materials based on the use of new technologies. These programmes will be specific for the various categories of users (operators of centres, teachers, tutors, students,

cultural mediators, health-care workers). Education for migrants, social operators and for the whole society of reception plays a role in this polyhedric panorama and provides the first instrument for preventing or limiting the undesired effects of an integration that is carried through without implying research, first and foremost xenophobia.

Scope: Education, dissemination, communication.

- Networking platform.
- Socio-educational inclusion of young migrants and learning of the language of the country of destination as second language in schools.
- Collection and production of Open Educational Resources for intercultural integration.
- Dissemination at the frontiers of science.
- Communication and outreach strategies.

Impact:

- Understanding problems and opportunities for education and training.
- Communication and dissemination within academe and the research community, public institutions, non-governmental organizations and the public at large.
- Transfer of know-how to policy makers.

DoM-02: Social Mining, Big Data and Socio-Cognitive Modeling

A sliding window has been opened by the ICT, and now we live in a measurable global society. Big Data let us observe the individual and collective behaviour of people at an unprecedented detail, scale and speed. Big Data at a societal scale provide a powerful microscope, which together with social mining – the ability of discovering knowledge from Big Data – help us understand, nowcast and forecast many complex and hidden socio-economic phenomena and make it possible to analyse human migration from new perspective that may empower traditional official statistics. A complementary and intertwined issue is the development of socio-cognitive models of trust, reputation, responsibility, autonomy and control, together with agent-based simulation models for what-if reasoning on the impact of migration flows on society.

Scope: Understanding, monitoring and forecasting migratory phenomena with Big Data

- Big Data acquisition, integration and curation for migration studies.
- Big Data analytics for understanding the patterns of human migration.
- Data-driven models to describe migration phenomena.
- Visual analytics and data journalism for migration studies.
- Trust and reputation models.
- Norms in heterogeneous contexts, normative representation between individuals and institutions.
- From the decision to leave to integration: autonomy and control in extreme conditions.
- Simulation applied to migration scenarios.

Impact:

- A repertoire of mobility and migration models capable of describing and predicting migratory phenomena at different geographic and temporal scales.
- A visual dashboard for exploring migration phenomena through the developed data-driven models oriented towards social science researchers, policy makers and general public.
- A repertoire of socio-cognitive models that allow solutions and remedies for distrust, bad reputation, perceived loss of social control.
- An agent based simulation dashboard for what-if analysis oriented towards social science researchers and policy makers.

DoM-03: Data Science and Research Infrastructures

A new challenge is the passage from data science to computational social science and data humanities. Europe recognizes the need and urgency to have advanced facilities for interdisciplinary cutting-edge research. The main goal is to deal with every aspect of science and technology related to migration. Today, also social sciences and humanities researchers are confronted with huge amounts and an increasing complexity of data in highly interdisciplinary settings. Research infrastructures go well beyond their hardware and constitute a Virtual Research Environment, on which very large data sets are run. Experimentalists are engaging thousands of informants via mobile devices which will in a very few years amount to 1 TB of data per day. Migration researchers do not need a research infrastructure of their own. They confer and receive data, models and scientific outcomes from a number of communities of researchers. One mentions: SoBigData: Social Mining and Big Data Ecosystem; DARIAH ERIC Digital Research Infrastructure for the Arts and Humanities; EHRIS European Research Infrastructure for Heritage Science; RESILIENCE, Religious Studies Infrastructure, Libraries & Experts Networking Centres in Europe; CESSDA ERIC Council of European Social Science Data Archives; ESS ERIC European Social Survey; SHARE ERIC Survey on Health, Ageing and Retirement in Europe; CLARIN ERIC Common Language Resources and Technology Infrastructure; eMSO European Multidisciplinary Seafloor; IAGOS In service aircraft for a global observing system; LIFEWATCH Science and Technology Infrastructure for Research on Biodiversity and Ecosystems; BBMRI Biobanking and Biomolecular Resources Research Infrastructure; EURO BIOIMAGING European Research Infrastructure for biomedical imaging.

Scope: Data-driven migration studies within Research Infrastructures

- Data science for computational social science and data humanities.
- Conferring and receiving data to and from currently operating research infrastructures.

Impact:

- Models of migratory phenomena in their complexity.
- Patterns and rules that describe social behaviour and reveal the underlying human dynamics.
- Nowcasting of socio-economical factors from social media sources.

SOCIETY AND CULTURE – SOC-CULT

Right now, Mediterranean migrations are seen as an emergency and a social expenditure. In the long term, however, they are due to become a substantial factor of growth starting with an effective management of the supply chains of reception and integration. Migrants are less and less contained within the borders of states. They leave and go, keeping in touch with their countries of origin and with local resident communities in the countries of destination. Missing integration has high costs due to its physical, psychological and economic impact on both migrant subjects and receiving society. Migrations have a connection with welfare and its efficient use: in an ever-growing world population, this resource plays a fundamental role. It cannot be universal, for it serves to satisfy the needs of a determinate population. Migrants have an effect on its implementation, they stress the sustainability of the system, and require the production of new laws, the revision of national budgets, educative systems, non-homogeneous resource allocation among beneficiaries, public health and security issues. A thematic issue of this importance and gravity cannot be dealt with mere informative tools. It must be dealt with nationwide projects and programs that are strategic and structural. For this reason, Member States and the EU are allocating substantial resources to contrast xenophobia and extremist violence in the framework of the Countering Violent Extremism plan. As a consequence, there are many demands and offers from public and private subjects that work together for the reception and integration of migrants. Mediterranean migrations ask

for a societal reflection that is historic, philosophical, juridical and religious and that promotes and revitalizes experiences of co-existence and systems of peace making in the relations of cultures.

SOC-CULT-01: Trends, Scenarios, Policies

Migrations have a connection with welfare and its efficient use. In an ever-growing world population, the resource welfare plays a fundamental role. Welfare cannot be universal, for it serves to satisfy the needs of a determinate population. Migrants have an effect on its implementation, they stress the sustainability of the system, and require the production of new laws, the revision of national budgets, educative systems, non-homogeneous resource allocation among beneficiaries, public health and security issues.

Scope: **Demography, law-making, human rights, labour.**

- Specific causes of migration phenomena in given geographical areas.
- Legal treatment, differentiated by different types of reception and of policies.
- Current international relations between hosting country and third countries of origin.
- Global approach and cooperation for the development of the countries of origin.
- Feminization of migration flows.
- Highly qualified migrants.
- Definition of a common European policy for asylum seekers.
- Contrast to human trafficking.

Impact:

- Internal migration policies within Member States.
- External migration policies between Member States and non-member Mediterranean countries.

SOC-CULT-02: Migrations and Growth

Migrants are agents of growth. They embody the notion of human sustainable development. They contribute to economic, social and cultural growth in the countries of destination, and to economic growth in the countries of origin. Migrant labour has become part of European social dynamics, and migrants who have access to financial instruments have developed their own entrepreneurship. Relations between countries of origin and of destination are at the centre of the 'UN Agenda 2030 for Sustainable Development'.

Scope: **Growth, entrepreneurship, banking, welfare, third sector.**

Research dimensions should be:

- Migratory systems and human sustainable development.
- Migrations, economic production system and financial systems.
- Welfare policies for immigrations.
- International human rights law.
- Migrations and third-sector innovation.
- Migrant entrepreneurship and networks.
- Social housing and the impact of migration of urban change and urbanisation processes.
- Promotion of diversity and multiculturalism as vectors of growth in the countries of destination.
- New strategies of communication of migration phenomena.

Impact:

- Assessment of the contribution of migrants for the constitution of new models of integrated, reflexive and inclusive societies and related policies.
- Strategies for enhancing migrant related human, social and financial capital building.

- Framework agreements for international migration studies.
- Best practices for economic integration.

SOC-CULT-03: Cultural Processes for Integration

Migrations are transfers of cultures, knowledge and competencies, occasions of encounter as well as of misunderstandings and conflicts. The challenges lie in considering the linguistic aspects of migrations, the ties of migrant communities to their countries of origin, cultural and religious diversity, intercultural dialogue in its various and complex forms and the acquisition of a shared vision of the history of the Mediterranean, in the framework of a diachronic reconstruction of living together, integration and interculturality. A special focus is to be set on migrating women and the new demography of school classrooms. Migrations are the lever for intercultural and interregional dialogue, especially in the dimension of the Mediterranean *translatio studiorum*, which has constructed its *modus vivendi* on the passage of cultures across and alongside the sea. Migrations have caused various phenomena of social aggregation finalized to giving value to cultural, religious and political diversity both at the level of systems and at the level of personal convictions.

Scope: Language, culture, education, family, religion.

- Multilingualism as factor of integration.
- Translations, lexica, linguistic and loan words from Greek, Latin and Arabic in European vernacular languages.
- Translation of studies and the foundation of the European education.
- European culture and alterity from assimilation to interculturality.
- Marriage and migratory strategies.
- Religions conflicts and encounters in the Mediterranean.
- New schools for integration.

Impact:

- Understanding the impact of multilingualism in schools, health-care, families, social services and public administrations in general.
- Assessment of multilingual literary production in the EU Member States.
- Tools for teaching migrants one or more of the 23 official languages of the EU Member States.
- Intercultural lexica, *translatio studiorum* and awareness of alterity.
- Understanding the role played by migrant women.
- *History of the Mediterranean* in cooperation with UNESCO.
- Monitoring school textbooks in the Mediterranean Area

SOC-CULT-04: Technologies for Cultural Innovation against the Destruction of Heritage

The declaration unanimously adopted by the ministers of culture of all EU Member States during their meeting of August 2015 at Expo in Milan states that ‘Cultural heritage is the mirror of history, society and of the society that is responsible for its protection; material and immaterial cultural heritage is the essence of the identity of a people, their memory, their past and present civilisations. It expresses at the same time the universally recognised values of tolerance, dialogue and reciprocal understanding’. Mediterranean cultural heritage is a powerful instrument of dialogue between Member States and non-member Mediterranean countries. Knowledge conservation, protection and use trigger integration policies; they also promote cultural, economic and social growth.

Scope: Knowledge and in-situ protection of cultural contexts and artefacts; post war archaeology; virtual reality; sustainable museography.

- Satellites and topographical techniques, drones and sensors for heritage protection in wide areas.
- Advanced diagnostic systems.
- Nano-materials and nano-technologies for conservation.
- 3D for the enhancement of cognitive access in historic and archaeological contexts.
- Methodologies and protocols for 3D rendering in hazardous contexts.
- Monitoring artefacts/context interaction.
- Advanced exhibition systems: smart showcases.

Impact:

- Making cultural heritage instrumental for science and cultural diplomacy.
- Protection and promotion of cultural diversity.
- Documentation, conservation, monitoring, use and protection from environmental and anthropic threats of cultural heritage in the Middle East and in North Africa.

SECURITY AND HEALTH – SEC-HEALTH

The control of migration flows, the protection of the lives of migrants and the prevention of the infiltration of terrorists are some of the main necessities related to security. These requirements entail the control of the borders in its various forms (sea, land and unconventional routes) by accounting explicitly the need to not delay the operations associated with the first humanitarian aid. In this frame, the continuous monitoring of migration flows (especially at sea) allows rescue and recovery operations more efficient, thus saving human lives. The ever-growing number of men and women migrating across and alongside the Mediterranean to EU Member States presents important challenges to the European health-care system. The phenomenon is aggravated by the recent surge in migration of people fleeing wars, threats and poverty in Africa and the Middle East. The predisposition to develop diseases is partly dependent on ethnicity and country of origin, but can be profoundly modified by environmental, cultural, socio-economic and lifestyle changes, as well as by the associated stresses occurring in the country of settlement. There is an urgent need to understand these interactions and to plan effective screening and integration strategies to preserve the health of incoming and resident people, and reduce its impact on National and Regional health-care systems. It is also important to face in an adequate manner the perception of EU citizens on the risk of contagious diseases.

SEC-HEALTH-01: Security

The development and deployment of technology solutions that need to be integrated is crucial in order to address the critical issues of the varied operational scenarios. It is necessary to develop and validate approaches for the integration of observational platforms (satellite, aerial, ground based) as well as sensing and diagnostic technologies that are capable of facing the different scenarios of the current migrant crisis and its development.

Scope: Security issues.

- Sea borders control and support to rescue and first aid operations.
- Control of land borders.
- Detection and identification of people.
- Monitoring and surveillance of the territory and means of transportation.
- Interaction between security and human rights.

Impact:

- To build an observational system and describe health conditions in migrating men and women, in subsequent phases of their migration, from arrival to integration in our country.

SEC-HEALTH-02: Health of Migrants and its Impact on the Social and Health-Care System

Epidemiology of reproductive and chronic diseases and their risk factors. The overall impact of chronic conditions on the health care system is to be estimated. Foreign women contribute significantly to the EU birthrate, and their neonates have an augmented risk of prematurity, low birth weight, congenital defects, infections, respiratory distress and mortality compared to neonates born to EU women. Diabetes affects 56 million people in Europe, and provokes a series of complications involving all body organs. It has a high socio-economic impact, for patients and health-care system. The risks and age of onset of diabetes are profoundly influenced by lifestyle changes, socioeconomic status, stress and ethnicity.

Scope: Epidemiology of reproductive and chronic diseases.

- Generation of migrant cohorts.
- Epidemiology, surveillance and pathogenesis of communicable diseases.
- Epidemiology of chronic non-communicable diseases.
- Cardiovascular and metabolic diseases.
- Respiratory non-communicable diseases.
- Reproduction.
- Risk factors.
- Diabetes and related diseases: physiopathology study and impact on the natural history of the disease.
- Validation of strategies for prevention and cure.

Impact:

- Preclinical models to validate mechanisms, cause-effect relationships, and treatment strategies, with a translational approach.
- To build an observational system and describe health conditions in migrating men and women, in subsequent phases of their migration, from arrival to integration in our country.
- To investigate disease pathophysiology, leading to the design of targeted health-caring strategies (prevention, cure) and policies (access to the health-care, education, compliance).
- To identify modifiable risk factors, early disease biomarkers and prevention strategies to reduce the burden of diabetes in migrants and in their children, in order to identify determinants, and develop age-specific panels of predisposing factors and biomarkers for the stratification and monitoring of risk.

ENVIRONMENT AND BIODIVERSITY – ENV-BIO

The choice of migrating is either due to current changes in the terrestrial ecosystem or is caused by political, demographic and economic conditions, in which the environment is an amplifying factor of the deterioration of living conditions. The diverse stress factors on the human being and the environment are connected, although water management remains the main cause. Biodiversity is to be studied in relation to the mobility of migrants, which has an impact on European the European agri-food system. It is necessary to combine global climate change models with local scenarios of social and economic growth.

ENV-BIO-1: Natural Resources, Climate Change and Migrations in the Mediterranean

There are obviously neither exclusively environmental causes at the basis of a migratory choice, nor environmental factors that operate disconnectedly from political, social and economic conditions. Diverse stress factors on the human being and the environment interact. Poverty is the decisive variable for feeding migratory

flows, and poverty is due to growing population against water scarcity. Climate change brings about migrations of both vegetal and animal species, which in prehistoric time was the work of glaciations and desertifications. In recent history, however, among the causes of climate change has been also the human being.

Scope: Natural resources, climate change and migrations.

- Natural resources and migrations.
- Environment, migrations and economic growth.
- Migrations and environmental degradation.

Impact:

- Understanding the environmental causes of actual and future migrations.
- Water management with regards to social, economic, historic conditions in the countries of origin of migrants.
- Combining climate change with social and economic growth.
- Issue awareness and strategies of intervention.

ENV-BIO-2: Biodiversity, Migrations and Sustainable Agriculture

Defining historic processes and future consequences of the human, animal and plant populations' migration and evaluating their effects in terms of biodiversity. Analysing of adaptive characters as response to main environmental factors in relation to future climate changes.

Scope: Biodiversity, sustainable agriculture.

- Relation between migration, adaptation to climate changes and biodiversity in plant and animal organisms.
- New cultures and new cultivation approaches.
- Migrations of plant pathogens and parasites, and wood saprophytes, including alien invasive species.
- Ethnic food and its traceability.
- History of rural landscape.
- Immigrant workers and sustainable agriculture.

Impact:

- Understanding the effects of migrations for the sustainable management of plant and animal ecosystems.
- Improving knowledge on the genetic basis of plant biodiversity for warranting the resilience of the agricultural system against climate change.
- Defining new cultural techniques for species and varieties of new introduction.
- Contrasting the diffusion of new pathogens/parasites and their vectors.
- Characterisation and traceability of ethnic food and related risk behaviour of vendors and consumers.
- Inclusion of migrants in the rural landscape and related socio-economic impact.

Conclusion

Work will be done to develop cross-sectorial clusters and pool resources to formulate projects with a European dimension. In addition, migration research projects can benefit from EIB advisory and financing tools under the InnovFin programme.¹³

¹³ <http://www.eib.org/products/blending/innovfin/>

The integration of migrants will also require the formation of a qualified workforce with specific and sometimes new skills, and opportunities for employment and social dialogue. If the right skills at all levels are to be developed, they will have to be espoused by the education and training systems – see the *Agenda for New Skills and Jobs Europe 2020*.¹⁴

In order to assess progress towards migration research and the effectiveness of action at EU and national level, it is important to have a set of reliable indicators. A lot of relevant data already collected by Eurostat can form a basis for this monitoring. In addition, the ESFRI research infrastructures will be particularly useful for tracking progress.

This position paper sets out a concrete and ambitious EU mandate to support the transition towards the establishment of a cross-cutting research agenda on migrations. The Commission, the European Parliament and the Council are invited to consider its proposals. A continued, broader commitment from all levels of government, in Member States, regions and cities and all stakeholders concerned will also be necessary.

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¹⁴ ec.europa.eu/social/BlobServlet?docId=6328