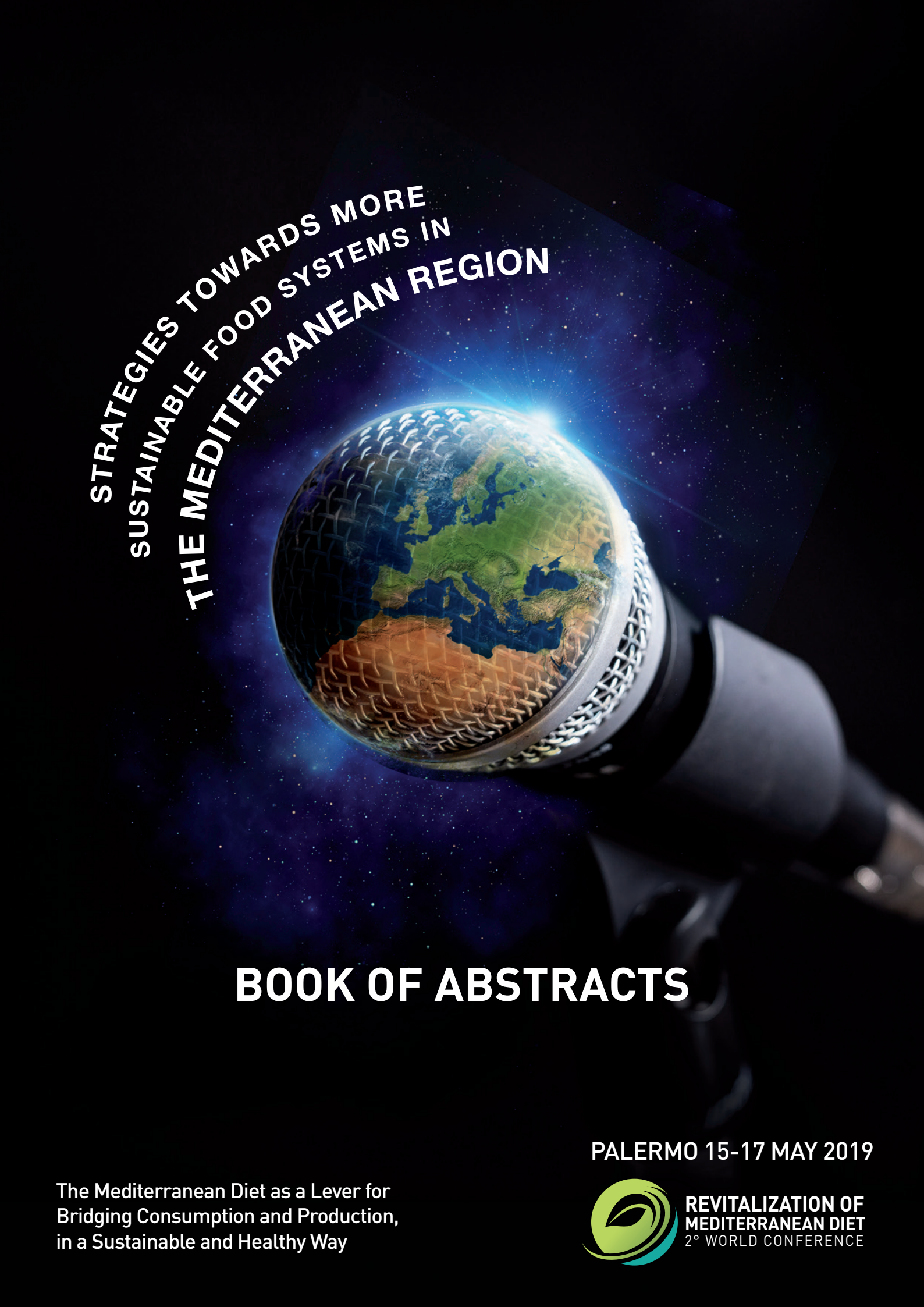

BOOK OF ABSTRACTS

PALERMO 15-17 MAY 2019

The Mediterranean Diet as a Lever for
Bridging Consumption and Production,
in a Sustainable and Healthy Way

REVITALIZATION OF
MEDITERRANEAN DIET
2° WORLD CONFERENCE

AN AFFILIATED PROJECT

One planet eat with care | Sustainable Food Systems

UNDER THE AUSPICES

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IFMeD International Foundation of Mediterranean Diet

Union for the Mediterranean Union pour la Méditerranée الاتحاد من أجل المتوسط

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SFN Société Française de Nutrition

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fiN Nutrition Research Foundation

Society for Nutrition Education and Behavior

United Nations Educational, Scientific and Cultural Organization

UNESCO Chair Food, Culture and Development

uniTwin

UOC Universitat Oberta de Catalunya

ICARDA Science for resilient livelihoods in dry areas

Rete Italiana Cultura e Sviluppo Euro-mediterraneo

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FAO Food and Agriculture Organization of the United Nations

Graphics: Daniele Comelli, Foodcomm

STRATEGIES TOWARDS MORE SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN REGION

THE 2° WORLD CONFERENCE ON THE REVITALIZATION OF MEDITERRANEA DIET

BOOK OF ABSTRACTS

PALERMO 15 - 17 MAY 2019

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A special thanks go to Daniele Comelli, for the layout of this publication.

This book of abstracts was edited by Sandro Dernini, PhD, Coordinator of the Conference, on the behalf of the Organizing Committee made by CIHEAM-Bari and Forum on Mediterranean Food Cultures.

THE 2° WORLD CONFERENCE

The Second World Conference has the scope, with a science-based approach, to continue strengthening the dialogue, between North and South Mediterranean countries, by linking food security and nutrition to sustainability, for a shift towards more sustainable food systems in the region, for ensuring sustainable development for present and future generations.

It has the aim to better identify strategies, programs and actions, able to provide solutions for coping with current critical challenges in the region towards more sustainable Mediterranean food systems, by bridging sustainable consumption and production (SCP) through the Mediterranean diet as a lever.

The acknowledgement of the Mediterranean Diet as a lever bridging production and consumption in a sustainable and healthy way, in the context of the diversity of Mediterranean food systems, can contribute to catalyze broader multi-stakeholder and innovative efforts, thus paving the way for coping with the challenges facing the Mediterranean countries.

In the international debate on the sustainability of food systems, the interest on sustainable diets has grown in recent years, by linking consumption and production, and therefore, the interest on the Mediterranean diet as a sustainable diet model, with multiple benefits and country-specific variations, has been reawakened.

The Mediterranean diet, as expression of the diversity of Mediterranean food cultures and their different food and culinary systems, has not yet been recognized as a resource of sustainable development in the Mediterranean region, a 'driver' in addressing demand for more sustainable food consumption, thereby influencing the production.

The underpinning rationale of the Conference is that a better understanding of the multidimensionality of the sustainability of food systems will strengthen the dialogue between North and South countries to jointly address growing challenges for food security, nutrition and sustainability, in the Mediterranean region.

OBJECTIVES

▼ To acknowledge the Mediterranean diet as a sustainable diet model, with multiple sustenable benefits and country-specific territorial variations, for contemporary Mediterranean lifestyles;

▼ To continue to reinforce science-based dialogues between North and South Mediterranean countries to better understand growing interdependent challenges in the Mediterranean, towards the achievement of the Agenda 2030's SDGs in the region for present and future generations;

▼ To identify strategies, programs, projects and actions for improving the sustainability of food systems in the Mediterranean region;

▼ To foster the development of a "Mediterranean Multi-stakeholder Sustainable Food Systems Initiative" within the United Nations One Planet Network, to unlock the potential of research, innovation, sharing knowledge and capacity building, between public and private partnerships from North and South Mediterranean countries, to increase more sustainable food consumption and production in the region;

▼ To consolidate the initiative of the World Conference of the Revitalization of the Mediterranean Diet as a permanent North to South/South to South Forum for multi-stakeholder transdisciplinary dialogues on Mediterranean sustainable food systems, through SCP approaches.

A MEDITERRANEAN CONTRIBUTION ON ENVIRONMENT AND SUSTAINABLE CO-DEVELOPMENT TO THE "SUMMIT OF THE TWO SHORES"

Chaired by **Enrico Granara**, Coordinator, Euro-Mediterranean Activities, Italian Senior Official to the UfM, Ministry of Foreign Affairs and Intl Cooperation, Italy

Concept note

In the framework of strategies for sustainable food systems in the Mediterranean, the 2nd World Conference on the Revitalization of the Mediterranean Diet is also an excellent platform for dialogue in view of the upcoming 5+5 Summit of the Two Shores to be held on 24 June in Marseille, where some of the most important topics for the life and well-being of the Mediterranean coastal Countries will be tackled through the angle of sustainable development. Additionally, a Forum is specifically devoted to the 5+5 Dialogue on Circular Economy on 16 May (Side Events 3 and 4) extended to the Civil Society organizations at regional level, whose outcomes will be presented by Italy to the Marseille Summit, with the technical support of the UfM Secretariat and in consultation with other partners of the Marseille program. In this gathering, the 5+5 Heads of State and Government are expected to meet in Marseille with a group of one hundred selected young experts (10 from each of the 5+5 partners).
In preparation of the Summit, on June 11th a meeting of the 100 young experts from the Western Mediterranean will take place in Tunis, with the task of selecting a number of projects previously discussed in four different fora: Palermo, Algiers (Energy), Rabat (Entrepreneurship and Innovation); Malta (Youth and Mobility); Montpellier (Culture, Media and Tourism).
Italy is participating in this process by mobilizing the Italian national research system in order to support a Committee of Ten, with the aim of elaborating a set of projects in the area of Blue Economy and Green Economy, with the technical support of the UfM Secretariat. The chosen motto for this contribution is "L'économie circulaire en action : Partenariats pour des villes côtières durables en Méditerranée occidentale." Projects resulting from consultations are in the process of being developed, ranging from self-sufficient local agricultural solutions to innovative ways of collecting plastics from the bottom of the Mediterranean coastline, offering partnership solutions to selected partners from the Southern Shore.
The Palermo Conference is taking place in a wider ecosystem of structured regional dialogue addressing some challenges shared by all Countries in the region, namely the one that has been set by the Final Declarations of the Euro-Mediterranean Conferences over the last five years. In particular, the UfM Ministerial Meetings on Environment and Climate Change, on the Blue Economy, or the Euro-Mediterranean Ministerial Meeting on Research and Innovation. It was the latter that made a clear reference to the role of new and important multilateral programs such as PRIMA and BLUEMED. In this spirit, the outcomes and recommendation of this Conference could feed into future commitments at intergovernmental level as in the case of the perspective Ministerial meetings on Environment and Climate Change, Research and Innovation, in terms of a stronger drive in circular economy, as well as on sustainable production and consumption patterns in line with UN 2030 Sustainable Development Goals.

Objective of the session: To provide a platform of dialogue for different programs and approaches to sustainability at the regional level, as a Mediterranean contribution to the " Summit of the Two Shores" on environment and sustainable co-development.

Sustainable food systems for a positive Mediterranean

Mohammed SADIKI, President of the CIHEAM Governing Board, Morocco

Abstract

The Mediterranean has never been so populated and the availability of natural resources to feed its population has never been so uncertain (soil degradation, water scarcity, threatened biodiversity, climate change…). Within a few years, the region's countries witnessed an evolution of their food diets towards a strong caloric increase of meals and a raise in sugars and products of animal origin, with as a consequence the emergence of sanitary and societal problems. Furthermore, it is to be deplored that today agricultural or fishing territories must abandon their activities because of a lack of available workforce or productive profitability whereas their capacities to provide people's food security, to reduce poverty or social exclusion and to meet the essential needs of urban areas are acknowledged.

As new dynamics are being settled, concerning dialogue and cooperation in the region and commitments must be taken to give a chance to a positive Mediterranean of the future, the CIHEAM, worth of its long history and rich Mediterranean experience, argues in favor of a rural and agricultural development that is combined to a sustainable, responsible and inclusive food systems development.

We have today the opportunity to support agri-food systems that are good for people, good for the planet, good for our Mediterranean history and which are a guarantee for social cohesion.

Production, Valorisation, Transformation, Distribution, Consomption, Waste management…At all stages of the agri-food value chain, it is possible to tackle economic, social and environmental issues which are a burden on the Mediterranean region. This implies the obligation to guarantee the attractivity of rural territories (infrastructures, basic services…), to invest massively in innovations, the modernization and improvement of the functioning of these sectors, to intensify the struggle against food waste and harvest loss, to diversify the economic activities which provide jobs and income, specifically for young people. Although in the Mediterranean, it is fundamental to produce « more » and « better », it is also essential to know better how to produce « with ». Indeed, in order to achieve these objectives, it is essential to support the emergence of food governance that promotes participatory approaches, with the involvement of local stakeholders, of the private and public sectors, of women- who keep suffering from discrimination- and rural youth, the majority of whom plan their future elsewhere.

Implementing the Sustainable Development Goals by advancing the integration of the Mediterranean region

Nasser Kamel, Secretary-General, Union for the Mediterranean

Abstract

We are all aware of the numerous challenges facing the countries of the Mediterranean region, going from traditional water scarcity to environmental degradation and heightened risks due to climate change as well rapid coastal urbanization, population growth and a region in which numerous conflicts still exist.

The mandate of Union for the Mediterranean seeks precisely to address these challenges, by promoting regional cooperation to address the three strategic objectives of stability, human development and integration and to do so by putting the achievement of the global UN Sustainable Development Goals as its own regional goal. Its unique overview of all sectors of interest for its Member states and engagement with a wide network of stakeholders enables the UfM to implement its political mandate for sustainable and human development across the Euro-Mediterranean area and promotes the creation of win-win solutions.

It is in this context that issues of environmental sustainability, the promotion of approaches towards development based on circular and green economy approaches, sustainable consumption and production and an integral view of the interlinked fields of agriculture, energy, water and food provide a template for action in which the UfM is also strongly invested. In this regard, the UfM supports a Positive Agenda for the Mediterranean through an environmentally responsible development, through the development of the blue economy, the strengthening of cooperation in the fields of research and innovation, promotion of investment to benefit the water sector in Mediterranean countries and common action for the climate agenda.

The UfM is thus pursuing the mobilisation of the Mediterranean around an initiative to promote the preservation of its natural resources, to prevent pollution and to launch the region into a circular economy future. Framing our common cultural heritage of the Mediterranean diet as a flexible and efficient model for promoting inclusive regional development, and as a natural tool for implementing sustainable consumption and production in the region is also a way to look to the future of our region.

For the UfM, partnering with the FAO and CIHEAM offers a unique opportunity to bring together the diverse but strongly convergent mandates to foster a long term, sustainable and inclusive development for the Mediterranean region. For this reason, the UfM will integrate conclusions of the Conference in its own work and looks forward to seeing them contribute as well to the upcoming high-level political forum of the "Sommet des deux rives".

BLUEMED Pilot, for a plastic-free, healthy Mediterranean sea

Fabio Fava, University of Bologna & IT Representative in the GSO BLUEMED Working Group, on behalf of the whole GSO BLUEMED Working Group

Abstract

The BLUEMED initiative was launched by a group of experts nominated by EU Member states (EU MS) of the Mediterranean basin in 2014 to foster integration of knowledge and efforts of the Countries of the area to jointly create locally new 'blue' jobs and sustainable growth. The Initiative was then (2015) open to the participation of all non-EU Countries of the same area. During the EU Maltese Presidency and on the occasion of the UfM Ministerial for Research and Innovation, the BLUEMED initiative was recognized as a UfM Initiative by all UfM countries and the European Commission thanks to the full support of Commissioners Moedas and Vella. Consequently, it evolved in a tailored Euro-Mediterranean Senior Officials task force called BLUEMED GSO Working Group, which is currently joined by Ministerial Representatives of all EU MS of the Mediterranean area (all plus Portugal) along with the Ministerial Representatives from Algeria, Egypt, Israel, Jordan, Morocco, Tunisia, and Turkey. Several R&I projects and a Coordination Support Action, all focusing on the sustainable blue growth, are currently ongoing in the area under the BLUEMED umbrella.

The health of our Mediterranean Sea is the major priority for the BLUEMED initiative as it is crucial for our future, wellbeing and prosperity. Plastic pollution has increased dramatically in the last 50 years and it has become a major threat to the health of the Mediterranean Sea that must be tackled urgently. Indeed, it is one of the most affected water bodies in the world. 320 million inhabitants live along its coastal areas in addition to millions of tourists visiting the region every year.

As a major shipping route linking Europe, Africa and Asia, approximately 25-30 % of world maritime traffic passes through the Med. Moreover, several large rivers flow into the basin such as the Nile, Rhône and Po. As a consequence, an estimated 211,425 tons of plastic enter the Mediterranean annually from the bordering countries. As a closed basin with very limited outflow through the Strait of Gibraltar, plastic is accumulating in the Mediterranean at concentrations that are higher than those observed in the five great oceanic gyres. This pollution has a large negative impacts on the ecosystem but also on tourism, fisheries and aquaculture. Members of the BLUEMED GSO WG, supported by the European Commission (DG RTD), agreed to launch a pilot "For a Plastic-free, Healthy Medi-

terranean Sea", following a proposal from Italy and France. The pilot aims at mobilising key actors to tackle plastic pollution in the Mediterranean Sea, thereby contributing also to the implementation of the Updated Bioeconomy Strategy1 and the European Strategy for Plastics in a Circular Economy2. A number of initiatives and projects are addressing marine litter in Mediterranean countries. Current BLUEMED GSO WG activities are identifying and sustaining the creation of BLUEMED Pilot local hubs at each of the 16 countries of Mediterranean area joining BLUEMED, local/national Hubs which will be then connected to all other Mediterranean hubs under the umbrella of the BLUEMED Initiative. These hubs together will create a "community", the BLUEMED Pilot, that will function as a one-stop shop to channel all relevant information and actions in relation to the Pilot. Currently, the national hubs are selecting one or two best-practice examples showcasing to include in the Pilot. Those already identified will be presented at the conference.

European Commission. 2018. Updated Bioeconomy Strategy – A sustainable bioeconomy for Europe: strengthening the connection between economy, society and the environment.
European Commission. 2018. A European Strategy for Plastics in a Circular Economy.

Investing in Mediterranean human capital and natural resources

Blanca Moreno-Dodson, Manager, Centre for the Mediterranean Integration, Marseilles

Abstract

The Center for Mediterranean Integration (CMI) is actively involved in the Summit and preparatory Fora, through its convening power, and it is contributing to the substance on several themes including energy, water, the environment and sustainable development, and youth, education and mobility. The CMI aims to contribute to the construction of a new narrative on these themes that will feed into the Summit discussions and the production of concrete policy recommendations.

The creation of a Euro-Mediterranean energy market would enable a high penetration of renewable energy into the power systems of interconnected countries, accelerating the decarbonization of the region's electricity systems in line with the Paris Agreement. The EU has prepared a legislative package – 'Clean Energy for All Europeans' – to facilitate the clean energy transition. In partnership with the European Commission, the CMI is working to share and exchange ideas with the Southern Mediterranean countries on the implications and opportunities of this package, promoting better exploitation of their vast renewable potential and an integrated Euro-Mediterranean energy market.

On the other hand, the Mediterranean region is one of the world's most water-scarce regions which will be increasingly aggravated by climate change, with major consequences for human life, food and agriculture productivity. The CMI aims to increase regional awareness on water security through an improved understanding of the challenges and emerging opportunities, and to mainstream youth engagement on water issues. CMI's water program convenes a regional water hub, contributing to increased collaboration and integration on water issues, and involves the creation, facilitation and empowerment of the youth-led network MedYWat.

Sustainable development of the region is not limited to the issues of energy and water: human capital development is also essential, and the CMI is developing its analytical work on the interlinkages between youth, education and mobility. Youth unemployment in the region is extremely high, the youth bulge is predicted to explode, and poor-quality education has inadequately prepared students for entrance into the labor market. Recognizing the need for investment in human capital, this work aims to draw policy recommendations on skills enhancement, education, and labor mobility.

The Center for Mediterranean Integration (CMI) is a multi-partner knowledge exchange platform convening development agencies, Governments, local authorities and civil society from around the Mediterranean to exchange ideas, discuss public policies, and identify regional solutions to key regional challenges.

Youth and intercultural dialogue as a driver for the Mediterranean integration

Nabil Al Sharif, Executive Director, Anna Lindh Foundation, Egypt

Abstract

In a world where sadly polarisation and mistrust are on the rise, the Anna Lindh Foundation has an important mission for the promotion of intercultural dialogue among the populations of this space. Over the last decade the ALF has tested some methodologies to facilitate exchange and knowledge between the people of the region and led research work to monitor people's mutual perceptions and intercultural attitudes to better orientate its action.

What it noted with our work is that the key is a multi-stakeholder approach of doing together, not only talking together. Dialogue by working together on common interest is one of the most successful ways that the ALF has tested and strengthened over the years and that has seen the implication of our large civil society network, counting a variety of over 4500 organisations.

This diversity across forty-two countries allows for the development of innovative approaches which can respond to new challenges arising in societies which become more and more multi-cultural. Indeed, our civil society consultation and our research have shown that the new priority area of work are cities. Cities as laboratories of intercultural interaction and as the decision-making entity closer to people.

To facilitate this multi-sector and multi-country cooperation approach the Foundation provides grants for cultural projects by consortia of organisations to develop together a common initiative with a public dimension in order not only to strengthen the collaboration among each other but also to show larger groups of population the results of dialogue work, at times with artistic productions and events, other with educational projects or scientific publications.

The Mediterranean diet is recognised by the majority of the people part of the Intercultural Trends Survey as one of its main features, and as such it can be an element of convergence and uniqueness for people to come together and identify innovative ways of cooperation and life.

CONNECTING MEDITERRANEAN COUNTRIES: FROM EXPO 2015 MILAN TO EXPO 2020 DUBAI THROUGH THE CHANNEL OF SUEZ

Co-chaired by **Dario Cartabellotta**, Director-General, Sicilian Agriculture Dept;
Simon Jabbour, Commissioner General of Lebanon Expo Pavilion

Concept note

At the EXPO MILAN 2015, within the Bio-Mediterranean Cluster, coordinated by the Sicilian Region with the participation of Greece, Lebanon, Egypt, Tunisia, Algeria, Malta, San Marino, Albania, Serbia and Montenegro, "the Chart of the Bio-Mediterranean" was issued as a protocol towards the implementation of the Bio-Mediterranean Cluster, as a permanent initiative, for promoting and supporting sustainable development focused on the enhancement of territorial identities, typical agri-food productions, fisheries, sustainable energies, cultural heritage and tourism of the territories involved, as well as to strengthen the political, economic, social and cultural ties between their respective populations.

The Mediterranean countries present in the Bio-Mediterranean Cluster of Expo Milano 2015, although different from each other, all of them constitute centers of promotion of territorial culture and economic, political and cultural innovation, managing important economic and social resources, infrastructures, skills and investments. The EXPO DUBAI 2020 is a remarkable opportunity for continuing the 2015 Bio-Mediterranean Cluster dialogue on the sustainable development in the Mediterranean region by connecting countries from the two shores to embrace alternative sustainable sources of food, water, and clean and renewable energy.

The Suez Canal is connecting directly the Mediterranean with Dubai. The enlargement of the Canal, made in 2015, is reshaping again the global trade routes through the Mediterranean sea, requiring of speeding up the process of entrepreneurial internationalization in the Mediterranean countries and the creation of new networks. It is enabling at the same time a broader movement of goods, ideas and knowledge but, as well as, is raising new challenges for Mediterranean sustainability.

Objective: To foster dialogues on sustainable development between Mediterranean countries of the Two Shores, as continuation of the Milan Expo 2015 Bio-Mediterranean Cluster dialogue towards the Dubai Expo 2020, through its direct route of the Suez Canal to better understand global entrepreneurial opportunities as well as new challenges for sustainable development in the Mediterranean region.

Connecting industries, academia and blue stakeholders for a sustainable growth in the Mediterranean

Roberto Cimino, President, National Technological Cluster Italian Blue Growth (BIG)

Abstract

The Technology Cluster Blue Italian Growth (BIG) is a national private – public partnership aimed at connecting different actors all involved in Research and Innovation in the area of the marine Blue Economy: academia, enterprises –both large and small medium sized- associations and regional technology districts exchange in such venue their respective experiences and know how on cutting-edge blue innovation, with the final target of promoting sustainable growth based on the sea.

Fisheries and aquaculture, blue biotechnologies, marine offshore mining and oil & gas activities, shipping and marine robotics, renewable energies are among the major technology roadmaps the Cluster is actively promoting in terms of developing technology roadmaps, supporting policy makers in the allocation of R&I funds, promoting a national community on the blue economy.

Sustainability is a pivotal theme cross-cutting all the technology roadmaps of the Cluster, including sustanaible exploitation of marine resources as well as circular blue-economy issues.

Among the strategic lines of the Technology Cluster BIG, its internationalization – with special reference to the Mediterranean basin- is one of the key action the national community is promoting: the experience on the preparation of the Summit the 2 Shores will reported to highlight the Cluster commitment in diffusing its strategic roadmaps at an international level by promoting a constructive and engaging dialogue with the entities of other countries.

The theme of circular marine economy referred to the valorization of the waste from fisheries will also be briefly presented".

MILAN URBAN FOOD POLICY PACT: SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN CITIES

Iorge Fonseca, FAO, Rome

Concept note

Urban development and demographics in the Mediterranean region has shown steadily increase since 1970. In this past half century close to 90% of the "new" Mediterranean dwellers have a city or town as their home. Different factors, including increased cultural mix, tourism, lifestyle and subsequent prioritization of convenience on food products and services, urban sprawling onto climate-shock vulnerable sites, are all shaping, for good and bad, the way food systems function within the Mediterranean cities. Many even argue urban development is responsible for the diminishement of the highly prized Mediterranean diet. In this context the role of local governments for ensuring sustainable food systems emerges as vital.

While there are some significant differences found among urban areas of the South, East and North subregions of the Mediterranean, the local goverments in the region do share some common struggles when it comes to ensure good nutrition for all, while safeguarding the environment. Moreover, there is consensus on the need to create regional alliances for solving major sustainability challenges including the still persistent levels of food insecurity, increasing prevalence of overweight and obesity and the trend toward the unsustainable use of natural resources in producing, transforming, distributing and consuming food.

Inspired by the framework of the Milan Urban Food Policy Pact signed by near 180 cities, many of which are in the Mediterranean, the event will allow prominent local leaders of the region and urban food experts to discuss i) what are the challenges and what can be done jointly to boost the sustainability of the food systems in the region, ii) how to use the food system as a catapult for overall sustainable urban and territorial development in countries.

With support of FAO, relevants topics to be quickly discussed will likely range from sustainable consumption and production, rural-urban/international migration, youth employment in the food sector, water scarcity in the urban food agenda, sustainable diets, local family farming, food waste reduction and management.

Objective: To better understand how actions in urban areas can ensure sustainable food systems in the Mediterranean.

Reorienting Territorial Food Systems in the Mediterranean Area: Revisiting the Mediterranean Diet

Florence EGAL, Independent expert

Abstract

The Mediterranean area is highly urbanized, with significant socio-economic inequalities within and across cities, poverty and increasing rates of diet-related diseases related to changes in food systems and diets. Traditional diets which were originally associated with subsistence, low-input and risk-adverse food systems are evolving and people are increasingly dependant on industrial agriculture and food imports. As a result small scale producers in rural but also peri-urban and urban areas are disappearing and traditional food practices falling into disuse.

In order to mitigate the negative health, environmental and social implications of this transition, it is suggested that Mediterranean cities promote local food systems based on more sustainable diets. The Mediterranean diet evolved for centuries within a specific bioregion and can contribute to more sustainable development. Plant-based diets have proven to be more healthy for both people and the environment. The promotion of short food chains (fruits, vegetables, legumes, poultry – preferably organic) is important in terms of local employment and livelihoods (production, processing, distribution, catering), in particular for youth and women - and in terms of culture and empowerment. It is also important for the retrieval of indigenous varieties and sustainable use of biodiversity.

Throughout the Mediterranean bioregion, traditional knowledge can still be retrieved and an increasing wealth of local experience is available to guide territorial planning. This will require a new type of governance and joint learning, and probably some degree of revision of the prevailing economic model and related legislation. Agenda 2030 can only be operationalised at territorial level and cities have a key role to play in impulsing sustainable territorial development based on harmonious urban-rural linkages.

TOWARDS THE SUSTAINABILITY OF SMALL SCALE FISHERIES AND AQUACULTURE IN THE MEDITERRANEAN: STATUS, ACTIVITIES AND PROSPECTS.

Chaired by **Árni M. Mathiesen**, Assistant Director-General, Fisheries Dept., FAO

Concept note

The historical importance of the Mediterranean region is unquestioned as is the link between the coastal communities surrounding it on all sides and the Sea. Presently the region faces a lot of challenges, political, environmental as well as regarding the resource status. Conflicts and migration issues with all their problems grab the news headlines almost daily but environmental issues and resource issues increasingly do so as well.

The question therefore is how can solving the resource issues contribute to relieving some of the environmental problems as well as contribute to solving some of the issues related to conflicts and migration. Some of the migration problems are external to the region but all the same put a heavy burden on its coastal communities which are already weak due the poor state of the resources that they traditionally base the their livelihoods on.

The state of the fisheries resources in the Mediterranean region is amongst the poorest in the world. At the same time the market demand in the Region for these high-quality level products is still increasing and, as confirmed by Blue Hope project, the improvement of value chain standard is a strong request of the consumers. This is for instance the reason why Aquaculture has in recent years blossomed in some parts of the Region.

- ◆ What is the exact status and what are the trends?
- ◆ Can we see positive signs of improvement?
- ◆ Have the changes made in the institutional structure in recent years helped us in anyway or have we been barking up the wrong tree?
- ◆ How are individual countries in the Mediterranean progressing and do any of them have anything positive to report that could be of use to others in the region?
- ◆ Can improved sustainable resource management and increased sustainable aquaculture production feed into coastal food systems and value chains and support the coastal communities socio-economically in a sustainable manner?
- ◆ Is there a Blue Hope in a Blue Growth in the Blue Economy of the Mediterranean Region?
- ◆ Can the Mediterranean sustainable food systems possibly be a guide forward for other regions?

Objective: To recieve guidance on how to proceed successfully towards sustainable small scale fisheries and aquaculture in the Mediterranean Region.

Chair:
Árni M. Mathiesen ADG FI FAO.
Roland Kristo, Chair of GFCM, Albania.
Elisa Roller, Head of Unit for CFP and Structural Support, Policy Development and Coordination, Directorate general for Maritime Affairs and Fisheries, European Commission.
Riccardo Rigillo, Director-General, Fisheries (DPCM), Ministry for Agricultural Food, Forestry and Tourism Policies, Italy
Hüseyin Sevgili, Mediterranean Fisheries Research Production and Training Institute, Kepez Unit, Antalya, Turkey
Rosolino Greco, DG Sicilian Fisheries Dept, Italy
Biagio DiTerlizzi, Dep. Director CIHEAM Bari, Italy.

National aquaculture activities: Turkey

Hüseyin Sevgili, Mediterranean Fisheries Research Production and Training Institute, Kepez Unit, Antalya, Turkey

Abstract

Aquaculture production in Turkey is mainly based on three species with rainbow trout (Oncorhynchus mykiss) in fresh water and European sea bass (Dicentrarchus labrax) and gilthead sea bream (Sparus aurata) in marine waters. Production quantity showed a constant increase during the last two decades and reached 315 thousand metric tons in 2018. Production process may be characterized as a well-compartmentalized with specialized intensive hatcheries, on-growing farms, processing factories and market chain in both fresh and marine water species. An important progress has also been made in environmental regulation of aquaculture.

However, there are several challenges that must be tackled in the sector, including low domestic fish consumption per capita (ca. 6 kg in 2017), dependence on external supply in major fish feed ingredients such as fish meal, fish oil, soybean meal, wheat gluten meal and early larval micro-diets and marketing. There are significant efforts to develop aquaculture of alternative marine and fresh water fish species in private sector to diversify species range and to more utilize local feed ingredients in order to reduce the reliance on the external supply.

More environmentally friendly culture techniques like recirculation aquaculture systems, aquaponics and integrated multi-trophic aquaculture have drawn a significant attention by existing companies and new entrepreneurs, suggesting an evolution in the production methods towards a blue growth of aqua

The Nemo Project's Approach: A New Vision of Small-Scale Fisheries for the Sustainable Development of Coastal Communities.

Biagio Di Terlizzi, Deputy Director, CIHEAM-Bari. Italy

Abstract

Development projects have been funded by the Italian Ministry of Foreign Affairs (MAECI) and Italian Cooperation Agency (AICS), implemented by CIHEAM Bari in several Countries for the benefit of fishery value chain actors of the Mediterranean Sea (Albania, Algeria, Egypt, Morocco, Lebanon and Tunisia). Now NEMO has reached the value of a "Strategy" aimed to prioritize the role that the coastal communities have in term of civil outposts to face poverty condition, emigration phenomena and social conflicts.

NEMO approach integrates environmental, economic and social dimensions giving to the fishery stakeholders the voice and the value of costal development actors.

Within this context the fishermen are exalting their capacity to offer high quality products to the consumers and at the same time, eco system services, ecotourism products and environmental monitoring, aimed to valorise the historical and cultural heritage and to protect the natural resources.

NEMO strategy is prioritizing the 3 Capitals of the Region: human resources, social and productive issues and environment. This Mediterranean Model can be proposed to other regions of the world, as for instance the Indian Ocean Rim Association Countries, where Institutions and private sector are looking for new development processes and new markets.

SOLUTIONS FOR COPING WITH MALNUTRITION, PRIMARY PREVENTION AND PUBLIC HEALTH NUTRITION IN THE MEDITERRANEAN REGION

Co-chaired by: **Gaetana Ferri**, General-Director, Hygiene, Food Safety and Nutrition Dept., Italian Health Ministry; **Lluis Serra-Majem**, University of Las Palmas de Gran Canaria; **Lorenzo M. Donini**, Sapienza University of Rome.

Concept note

Food insecurity, malnutrition, obesity and chronic diseases are major challenges, associated with dietary shifts and nutrition transition, negatively impacting population and environment in the Mediterranean area. Many countries in the Mediterranean region, from both Northern and Southern shores are currently undergoing a growing ´nutrition transition", at the same time quantitative and qualitative. These dietary changes include shifts in the structure of the dietary patterns, including the Mediterranean diet pattern, towards a diet characterised by a reduced intake of fruit and vegetable, in favour of a higher meat intake and foods of animal origin in general. This means a higher energy density diet with a greater role for saturated fat, sodium and added sugars in foods, at the expense of complex carbohydrates and dietary fibre, micronutrients and bioactive molecules. These dietary changes are associated with lifestyle changes that reflect reduced physical activity. Nutrition transition occurs in conjunction and probably leads towards an epidemiological transition and has serious implications in terms of public health, economic growth and nutrition policy. The prevalence of obesity and related chronic-degenerative diseases is increasing while under-nutrition (protein-energy malnutrition and selective nutrient deficiency) continues to be present even in many developed countries. This nutrition transition leading to a "triple burden of malnutrition" is alarming as it has a negative impact not only on health but also on food systems. Evidently, these challenges need to be addressed through a renewed vision that requires a diverse scale, deep understanding and transdisciplinary approaches, to reverse current unsustainable nutrition trends and dietary shifts, and addressing public health challenges facing the Mediterranean populations.

Objective: the session will present and discuss doable solutions to make progress in better understanding mounting complexity of the malnutrition in the Mediterranean region.

Solutions for Coping with Malnutrition, Primary Prevention and Public Health Nutrition in the Mediterranean Region: The Case of Morocco

Rekia Belahsen, Training and Research Unit on Nutrition & Food Sciences. Chouaib Doukkali University. School of Sciences. El Jadida, Morocco

Abstract

In recent decades accelerated rapid diet and lifestyle changes related to industrialization, urbanization, economic development and market globalization have had a significant impact on health and nutritional status of the world populations, particularly in developing countries and countries with economies in transition. In Mediterranean populations, dietary habits have always played an important role in protecting against cardiovascular diseases (CVD) and in effectively reducing mortality rates. Despite global promotion of this food model, epidemiological evidence suggests that food patterns in the Mediterranean countries of Africa and the Middle East as Morocco are changing rapidly, with increased consumption of animal products and saturated fats and reduced consumption fruit and vegetable products. This in addition to lifestyle changes, have led to non-communicable diseases including obesity, diabetes, hypertension, CVD and cancers that are increasing in these area. In addition, food insecurity is also a serious public health problem affecting millions of households worldwide including in these Mediterranean area countries. Malnutrition, the main consequence of food insecurity, can have adverse effects on the health of different groups, particularly women and children because of inadequate food, or simplified diets of low-quality. The simplification of diets with a limited choice of energy-rich foods leads to a loss of biodiversity on the one hand and exposes the population to micronutrient deficiencies and new health problems related to emerging diseases on the other hand. Indeed, food insecure women are more likely to be obese than women who are food secure and this relationship is attributed to the nutrition transition because of the adoption of a lower-quality diet rich in sugar and fat and changes in lifestyle.Strategies need to be put in place by policies, including agricultural, economic and educational actions, to reduce food insecurity and the mortality associated to the burden of malnutrition. These solutions must be adapted to the needs of local populations and aim to adherence to the Mediterranean diet for a sustainable nutrition and better public health

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Challenges of Health Systems facing changing health needs in North African countries

Jalila Elati, Institut National de Nutrition et de Technologie Alimentaire, Tunis

Abstract

SITUATION ANALYSIS: North African countries are undergoing socioeconomic changes and epidemiological transition characterised by drastic increases in overweight and obesity as well as non-communicable diseases (NCDs). It is estimated that NCDS underlie Ðmore than eight out of ten deaths in the region. Patterns of diet and physical activity that have shifted towards 'Westernized' diets characterized by increased consumption of high-energy, nutrient-poor foods and increased sedentary activity are major factors of that increase in NCDs, in the framework of the nutrition transition. KEY CHALLENGES: Diet and lifestyle require a special focus: -lack of action to control advertising and marketing for unhealthy food products and practices; -inadequate action on food labelling and nutrition profiling; -little or no real commitment of non-health sectors in addressing unhealthy lifestyles; -lack of engagement of the private sector in supporting initiatives that promote better health outcomes from NCDs. STRATEGIES DEVELOPMENT: a national strategy to prevent and control obesity followed by a national strategy to prevent and control NCDs were developed by a multisectoral team (policy makers, epidemiologists, nutritionists, economists, Ðphysicians, scientists, and statisticians). As part of the NCD strategy, the multisectoral committee called on the private sector to take measures in two specific

areas, with a view to strengthening that sector's contribution to NCD prevention and control by producing and promoting more food products consistent with a healthy diet (eliminating industrially produced trans-fatty acids, decreasing saturated fats, limiting free sugars, reducing salt content); reducing the impact of the marketing of unhealthy food and non-alcoholic beverages to children. KEY PRIVATE SECTOR ENTITIES INVOLVED: Food and beverage industry, eating outlets, restaurants, media, advertising, entertainment industries, and industries responsible for the built environment. SUCCESS STORIES: New creation of a healthy sweet snacks for children; production of margarine non-hydrogenated; reduction of salt in bread (by 40%); removal of the duty tax on fresh fruit juice without added sugar; ban on the importation of palm oil by the public sector.

Overweight, selected aspects of Mediterranean diet and cancer risk

Carlo La Vecchia, Department of Clinical Sciences and Community Health, University of Milan, Italy

Abstract

Overweight and obesity are related to the risk several cancer sites, including post-menopausal breast, endometrium, colorectum, esophagus (adenocarcinoma), gallbladder and kidney. Overweight and obesity have been increasing in most areas of the world over recent decades, but have not been rising in several Mediterranean countries. In Italy over the last three decades the prevalence of overweight has remained around 30%, and that of obesity and 8% of adult population. Still, overweight at various ages has been consistently associated not only to cardiovascular disease, but also to several common cancers, including colorectal, endometrial and post-menopausal breast cancer in Italy. Physical activity, in contrast, has been favourably related to colorectal, breast, and several other neoplasms in Italy. Various aspects of the traditional Mediterranean diet and nutrition patterns are considered favourable non only cardiovascular disease, but also on several common neoplasms. These were analyzed using data from a series of case-control studies conducted in Northern Italy on over 22,000 cases of several major cancer sites and a comparable number of controls. For most epithelial cancers, and particularly for digestive tract cancers, the risk decreased with increasing vegetable and fruit consumption, with relative risks between 0.3 and 0.7 for the highest versus the lowest tertile. A number of antioxidants and other micronutrients and food components (including carotenoids, lycopene, flavonoids, proanthocyanidins and resveratrol) showed an inverse relation with cancer risk, but the main component(s) responsible for the favourable effect of a diet rich in vegetables and fruit remain undefined. Likewise, an a priori defined dietary inflammatory index (DII) was inversely related to most epithelial cancers, particularly of the digestive tract. A number of antioxidants and other micronutrients or food components (including carotenoids, lycopene, flavonoids and proanthocyanidins) showed an inverse relation with cancer risk, but the components responsible for the favourable effect of a diet rich in vegetables and fruit remain undefined. Fish, and consequently a diet rich in n-3 fatty acids, also tended to be favourable diet indicators. In contrast, subjects reporting frequent red meat intake showed elevated risks for several common neoplasms. Whole grain food intake was related to reduced risk of several types of cancer, particularly of the upper digestive tract. This may be due to a favourable role of fibre, but the issue is still open to discussion. In contrast, refined grain intake and, consequently, glycaemic load and index were associated to increased risk of different types of cancer, particularly digestive tract and hormone-related ones. Further, olive oil, which is a typical aspect of the Mediterranean diet, has been inversely related to cancers of the colorectum and breast, and mainly of the upper digestive and respiratory tract neoplasms. When a Mediterranean diet score, originally developed by Antonia Trichopoulou et al on Greek data, was applied to our dataset, subjects in the highest score level for adherence to Mediterranean diet had 30 to 50% reduced risks of most common neoplasms, particularly of the digestive tract, but also of the liver, pancreas, endometrium and other female-hormone related, and urinary tract neoplasms. In the same network of studies, Mediterranean diet was consistently related to a reduced risk of myocardila infarction.

Impact of shifting to a healthy Mediterranean food consumption pattern on environmental sustainability and food security in MENA countries.

Nahla Hwalla, American University of Beirut, Lebanon

Abstract

Middle Eastern countries suffer from the triple burden of escalating diet related non communicable diseases(NCDs), food insecurity, micronutrient deficiencies and dwindling environmental resources. The nutrition transition facing these countries have been proposed as a target to tackle to curb these diseases, address food insecurity and minimize environmental impact of the changing diets. International research demonstrated that food Items, consumed in the MENA region, impact the incidence of NCDs and changes in their consumption were recommended.

To move forward on this recommendation the environmental footprints of current and recommended consumption levels of such locally consumed protective and harmful foods were collected. The findings demonstrated the beneficial environmental effects of reducing consumption of red meat, and highlighted essential tradeoffs that would result from a simultaneous increase in consumption of vegetables/beans, across MENA countries. Further research is needed to elucidate the economic, cultural and social impact of such recommended dietary changes, clarify the needed tradeoffs and provide the evidence for policy changes to promote mediterranean food consumption in the MENA region. A food system approach is warranted for impactful solutions to promote sustainable and healthy food consumption in Mediterranean countries. Such an approach will span from production , access marketing all the way to consumption.

May precision agriculture have a role in the prevention of NCDs? From DiMeSa to the 123 PASSI study and beyond

Giuseppe Carruba, Director, Research and Internationalization Division (SIRS), ARNAS-Civico, Palermo; Vice-Presidente, DIAITA, Palermo, Italy

Abstract

Today the crisis of the agrifood sector across several geographical European regions, including our own, combined with the economic crisis currently running at regional, national and community level, is featured by extremely critical aspects, mainly residing in the limited innovation potential of companies and small/medium enterprises (SMEs), the lack of integration with public-private research institutions, the insufficient systematization and organization of the existing resources in an extended territorial networking. This results into increasing difficulties of SMEs to be present in both domestic and foreign markets with characteristics of quality and competitiveness.

On the other hand, several epidemiological studies clearly indicate that all Western countries, including Italy, are witnessing a dramatic phenomenon consisting of real epidemics of chronic noncommunicable diseases (NCDs), including cardio-, cerebro-vascular, and respiratory diseases, diabetes, obesity, and cancertumors, whose causes are largely related to (removable) lifestyle risk factors, notably diet.

Based on this combined consideration, promoting both production and competitiveness of traditional food products in regional, domestic and international markets, through a series of activities aimed at increasing their health and/or nutraceutical potential, to clinically validate their effects on both health and chronic disease(s), and to enable rapid technological transfer and industrial development of either processes or products would represent a systemic strategy of high impact in the short, medium and long term for the important expected outcome from an economic, technological and healthcare standpoint. Lessons learned from the DiMeSa study and its recent advancement, the 123 PASSI project, with both published and unpublished results will be presented and discussed.

SESSION 6

DEVELOPING SKILLS FOR ADDRESSING THE DEEP ROOTS OF MIGRATION IN THE MEDITERRANEAN: TRAINING YOUTH, DEVELOPING AGRICULTURE AND CREATING OPPORTUNITIES FOR RURAL SUSTAINABLE DEVELOPMENT

Co-Chaired by **Javier Sierra**, Director, CIHEAM Zaragoza; **Giuseppe Provenzano**, UfM

Concept note

Mobility of people has always been at the core of Mediterranean civilizations. Nevertheless, if migration can be an opportunity for the development of both origin and destination countries, the growing vulnerability of rural livelihoods represents a major trigger for ongoing migratory flows, with young rural populations moving towards areas with higher economic potentials – an unsustainable trend identified in the UN Agenda for Development post-2015.

These trends are cause of socio-economic and agroecological damages. The implications of this phenomenon can be considered in terms of sustainable food production, natural resource management, territorial integration and inclusive development – affecting the overall resilience and sustainability of our society. Climate change impacts further aggravate existing pressures. Furthermore, increasing rates of rural poverty, unemployment and vulnerability in the Mediterranean indicate that the agrarian world suffers from trends of unsustainable development.

As highlighted by the 2017 Roadmap for Action of the Union for the Mediterranean, addressing the deep causes of migration is essential to regional stability and therefore calls should be extended for further activities to regions particularly affected by migration-related challenges, taking in consideration existing best practices and existing actions (such as competitions for talent, platforms, and education and research schemes, such as PRIMA and BLUEMED).

Despite relevant political and financial engagements, the trends of rural livelihoods and the pace of rural emigrations indicate that appropriate strategies have yet to be forged and migrations should be properly addressed from the perspective of rural development, with agriculture (including water security) representing both a push and a pull sector for migratory flows on the different rims of the Mediterranean. Social and territorial cohesion, job creation in agro-food value chains and natural resources preservation are main outcomes of sustainable rural development but they can not forget the crucial issue of research and education and the key role of implementing innovation in rural policies, following the LEADER approach. In this context, possible solutions include the development of skills and employability as a way of addressing the roots of migration. In this, it is fundamental the role of targeted education activities, such as training and internships. Other approaches have involved mainstreaming water-employment-migration approaches and actions to increase water-related employability and entrepreneurship in countries of migration origin, transit and hosting, as water-related jobs may become a contributor for income. The corollary of the lack of public and private investment in rural territories is the lack of investment in education, capacity building, extension services and research transfer. But some initiative flourish, either public either private, to bring global solutions in the rural areas.

Objective: To present and discuss concrete solutions and best practices in knowledge sharing, skill development and research in order to tackle the deep roots of migration in rural areas and coastal communities through better opportunities for rural populations based on agriculture and employment.

Sustainable Solutions to Rural Exodus

Blanca Moreno-Dodson, Manager, Centre for the Mediterranean Integration

Abstract

70% of MENA's working-age population is under 30, 40 % of MENA youth is unemployed, and 1 out of 4 MENA youth is willing to migrate. The massive migration of (often poor and less educated) rural youth to cities and abroad can trap youth in poverty while accelerating the degradation of abandoned territories. Integrated sustainable development approaches should offer economic opportunities to rural youth while promoting sustainable territorial development. In this sense, the role of agriculture as a key employment and growth sector for livelihood creation cannot be emphasized enough. This sector is also key to addressing water scarcity and the manifold effects of climate change in the region. Young populations could play a fundamental role to play in injecting innovative and sustainable practices into agriculture, with positive knock-on effects for water and food security, as well as environmental resilience. Indeed, agroforestry, ecological restoration, eco-tourism and numerous other green entrepreneurship opportunities can be harnessed by them. In that context, narratives on rural employment will need to evolve in order to make such opportunities attractive for youth.

Reducing rural brain drain and the decline of rural areas can, for instance, be achieved by providing rural youth with access to productive assets, including land, agricultural extension services, irrigation and land use, while also facilitating access to social welfare schemes of senior rural populations. This would integrate young workers in the rural labor market while developing inclusive policies for elderly citizens and disadvantaged communities. In addition, green entrepreneurship programs to train and build the capacity of young rural workers could improve their access to the know-how and abilities (including financial management skills) required to elaborate and carry out productive projects. It will also allow to identify new innovative and sustainable areas of employment. Networking and partnering, as well as clustering young entrepreneurs to sharing knowledge is also essential. This approach would promote green growth through sound investments including detailed screening mechanisms. Indeed, turning rural areas into drivers of the green economy and job creation could also catalyze the mainstreaming of environmental concerns together with the implementation of environmentally sustainable production activities.

Challenges and pitfalls in achieving the SDGs: water scarcity and migration

Majd Al Naber, Team Leader and Senior Researcher, Sustainable Development, West Asia-North Africa Institute

Abstract

Mediterranean region is facing several challenges when it comes to achieving the sustainable development goals. It is clear that the road is not paved yet and too rugged toward these goals. The main challenges that Mediterranean is facing are the unsustainable agriculture production, overexploitation of natural resources, water scarcity and poor management and climate change. All these factors and more encouraged migration under the umbrella of environmental displacement. In some cases, migration is considered as a way to manage the risk of rainfall variability and food insecurity and is used as an adaptation strategy. This strategy can be classified as content or erosive based on communities response.

Almost all the SD goals that were introduced by the UNDP are linked in a direct and indirect way. Integrated approach should be adopted to help achieving the end road/result of 2030 successfully. This presentation will highlight the link and interlink between the sustainable development goals (SDGs) and how external and internal factors as sudden environmental displacement and migration can accelerate/decelerate the level of SDGs achievement with a focus lens on rural communities, policies maker and stakeholders' response.

HOMERe: a circular mobility for improving local employability of Youth

Léo Vincent, HOMERe France; Massimo Guarascio,GAMeMichelangeloHOMERe,Italy

Abstract

Youth Employability represents a key challenge within the Mediterranean Region: Youth unemployment rates are high and quality employment is lacking there: number of young people face irregular or informal jobs, and some educated young people are overqualified for the jobs they occupy.
The HOMERe program aims to increase the level of "employability" of graduates thanks to an international internship which provides them soft skills required by companies. HOMERe is a new way of recruiting young talents in their Mediterranean country thanks to a legal migration for work purposes. The 6-month internship in a company/association/administration abroad is a means and a step prior to hiring the graduate. Clearly HOMERe contributes to address the roots of migration.
HOMERe is an action which adopts an approach to migratory phenomena based on the principles of solidarity, redistributive justice and responsibility. International internship through a temporary legal migration scheme offers great benefits for the students in terms of professional training, practical experience, international projection and professional connections. It is therefore a real support for improving employability and recruitment in a skilled job with good career prospects in their origin country. HOMERe encourages gender-balanced mobility and prevents the risk of bias against those talented youth who are disadvantaged for economic reasons. Recently HOMERe has been awarded by the European Union. HOMERe now decided to promote a specific HOMERe-Blue activity: A large diversity in sea trades demonstrates major growth potential in coastal areas which is often underestimated. Port activities, maritime transportation, ship repairs, fishery, aquaculture, residential needs, tourism, custom, safety, biotechnologies, ocean energy, cultural heritage are some sectors with large job opportunities. Blue Economy is about a pro-active approach for Sea Green Economy, an economy strongly committed to respect of environment, to climatic change and to societal responsibility with the respect of the cultural heritage of the Mediterranean area.

SESSION 7SOLUTIONS FOR COPING WITH IMPACTS OF WATER SCARCITY, LAND DEGRADATION AND CLIMATE CHANGE ON MEDITERRANEAN FOOD SYSTEMS

Co-chaired by: **Nicola Lamaddalena**, Head of the Land & Water Dept., CIHEAM, Bari, Italy; **Pasquale Steduto**, Senior Water Adviser, FAO NENA Regional Office, Cairo, Egypt

Concept note

The Mediterranean is among the Regions with the least fresh water available per capita and with a quite alarming prospect: the demand for fresh water is on the rise due to population growth, food security policies aiming at producing more food internally, changes in dietary patterns towards more animal-based proteins, urbanization, and overall socio-economic development.At the same time, the availability of fresh water resources is on decline due to reduced and variable rainfall, depletion of groundwater, direct and indirect waste of water resources and water quality degradation.Climate change will only make the situation worse due to reduced and variable rainfalls and the increased recurrence of extreme events, including drought and heat waves. This Region, in fact, is expected to be among those most impacted by climate change, with an anticipated acceleration of land degradation and desertification. Agriculture will be the sector suffering most and food systems risking to be disrupted.These complex challenges are further compounded by the constrained economic growth and employment, providing the conditions for impoverished livelihood, social discontent, migration, and ultimately unsustainable development.Evidently, these challenges need to be addressed through a renewed vision that requires a diverse scale, deep understanding and effective innovation.Research, analytics, and regional approaches are necessary to foster feasible solutions on long-term.Recovering more sustainable food systems based on what used to be typical Mediterranean crops, such as pulses, have the multiple advantage of being climate-resilient, nutritionally healthy, having low environmental footprint and higher market opportunities. Regional actions towards sustainable land-management and climate-resilient practices can be transformative to halt land degradation, desertification and adaptation to climate change. Also sustainable water resources management requires a regional, ecosystem and people-centered approach so that knowledge-gaps are systematically identified and coordinated responses are promptly fostered. Furthermore, it can promote a greater coherence and stronger partnership in finding solutions.

Objective: The session will present and discuss doable solutions to enforce the sustainability of Mediterranean Food Systems under a mounting complexity of environmental challenges, including water scarcity, climate change and land degradation.

Regional approaches to environmental challenges in the Mediterranean: the contribution of the UfM”

Miguel García-HerraizRoobaert, Deputy Secretary-General, Water and Environent, UfM

Abstract

The Mediterranean region faces numerous common environmental and social challenges which pose a threat to the long term sustainability of our current development models. There is also a growing and increasingly acute understanding that today's challenges cannot be tackled separately by each country, not only because impacts of water scarcity, of land degradation and of climate change extend beyond national boundaries, but more broadly as well because the repercussions beyond the strictly environmental or agricultural are more than ever recognised as extending to the whole region and even beyond.

Thus, a regional approach is necessary and should contribute to foster a common regional understanding of the challenges, thereby creating the basis for greater coherence in dealing with environmental challenges. A regional vision – together with regional initiatives- is a necessary tool to leverage the existing body of knowledge and skills from institutions and agents from across the Mediterranean and tap more efficiently into funding opportunities, into productive networks of expertise and to enable the transfer of knowledge. It is also on the basis of such shared vision and of the opportunities afforded by close cooperation to deal with them that political will can be brought to bear to address in a comprehensive manner the complex issues the Mediterranean faces.

Thus the need for promoting common regional agendas, whether specific to water scarcity, to environmental threats such as land degradation, or to the climate change effects in the Mediterranean, but more broadly as well to issues intrinsically linked such as employment, such as education and training, such as research and innovation and transversal issues such as youth and such as the role of women. An honest appraisal of the means to meet today's challenges requires finally to foresee how best countries may fit in their national priorities with an overarching view of the Mediterranean context.

In this regard, the UfM is working on framework agendas on the Environment, on Climate change, on the promotion of the Blue economy and on Water management in the Mediterranean, partnering with established stakeholders in the region to facilitate greater policy coherence, to promote specific projects which can highlight solutions for the Mediterranean, and overall to push for a Mediterranean region that can lead in the transformation towards a more sustainable future. In this respect, the Mediterranean is a pioneer in the adoption and application of the Sustainable Consumption and Production approach, which was at the core of its 2014 UfM Ministerial Declaration on Environment and

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Benchmarking Innovations for Sustainable Agri-food systems under climate change in the Mediterranean Region: what do ICARDA and the CGIAR have to offer?

Jacques Wery, Deputy Director- General for Research, ICARDA

Abstract

Agricultural and food systems in the Mediterranean region face complex challenges including water scarcity, rainfall variability, increased temperatures, land degradation, desertification, high population growth and migration, widespread poverty, malnutrition and unemployment. This region is expected to be among those worst affected by climate change, further exacerbating the existing situation, resulting in reduced agricultural productivity, increased poverty, higher dependence on food imports, and increased competition for scarce natural resources. These constraints also present opportunities that must be analysed and scaled in the frame of the diverse range of agro-ecosystems: rainfed, irrigated, agro-pastoral and desert farming.

Throughout ICARDA's more than 40 years of research-for-development in the region, with its NARS partners, it is clear that there is a large, diverse and underutilized basket of proven technologies (on crops, livestock, soil, water, energy, food technology, etc) which can address one or several of the issues, provided they are leveraged by appropriate institutions, and support policy transformation and markets in a food system approach. A typical example is the case of food legumes (chickpea, faba bean, lentils) – marginalized in agricultural and food systems globally over the past decades despite their potential role in a One Health Approach from soil to biodiversity and human needs.

To leverage impact and identify solutions, we need to recognize and capitalize on: (i) the diversity of agro-ecological systems across the Mediterranean region; (ii) the role of crop diversity for sustainable food systems; (iii) the role of small ruminants in nutritional and economic resilience to climate change and variability; (iv) the systemic nature of innovation to address sustainability in the Nexus Nutrition-Water-Employment-Natural resources; and (v) the potential for regional collaboration across the Mediterranean Basin. The DryArc Interface, as a collective effort of CGIAR centers, supports this Collective Intelligence in the Mediterranean region for sustainable innovation in the agri-food systems.

Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR): Integrated Vulnerability Assessment Findings and Response Measures

Carol Chouchani Cherfane, Chief, Water Resources Section, Sustainable Development Policies Division, United Nations Economic and Social Commission for Western Asia (ESCWA), RICCAR Coordinator

Abstract

The Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR) is an outcome of a collaborative effort between the United Nations, the League of Arab States and specialized organizations that assesses the impacts of climate change on freshwater resources in the Arab region and its implications for socioeconomic and environmental vulnerability. In so doing, RICCAR provides a platform for assessing regional climate change challenges to inform policies and responses measures for climate action.

The results are based on the outcome of a region-specific integrated assessment that generates regional climate modelling and hydrological modelling projections for the MENA Domain adopted by the Coordinated Regional Climate Downscaling Experiment (CORDEX). Extreme climate indices projecting changes in the maximum duration of dry spells and wet spells are also provided. These outputs then inform an integrated vulnerability assessment that considers how exposure to climate change affects water availability and the vulnerability of water-dependent sectors, including wetlands, forests and agricultural ecosystems.

Adaptative capacity examined for each sector and offers axes through which enhanced resilience to climate change can be pursued. These findings informed the preparation of a training manual on the use of integrated water resource management tools for climate change adaptation with respect to ecosystems, agriculture and other water-dependent sectors, including associated response measures. These materials have been used to assist Southern Mediterranean countries advance progress on climate action (SDG13) and interdependent Sustainable Development Goals articulated in the 2030 Agenda for Sustainable Development, including SDG6 on water and SDG 15 on land degradation.

These materials are available on the RICCAR Regional Knowledge Hub at www.riccar.org. RICCAR is implemented through an inter-agency collaborative partnership involving 11 partner organizations, namely the League of Arab States, ACSAD, ESCWA, FAO, GIZ, SMHI, UNESCO Cairo Office, UN Environment, UNISDR, UNU-INWEH, and the WMO

Regional actions to counter land degradation, enhance resilience and promote sustainable production landscapes in the Mediterranean, Near East and East Europe. The FAOLAND MEDNET Initiative

Pandi Zdruli, CIHEAM-Bari, Thomas Hammond, FAO CBL; Feras Ziadat, FAO CBL; and Thedodora Fetsi, FAO CBL

Abstract

Land degradation and desertification (LDD) are impacting livelihoods, environment, economic growth and migration in the Mediterranean region. The region is characterized by the scarcity of land resources suitable for agricultural production due to aridity, inherently poor soils impacted by degradation, as well as limited rainfall and water supplies. The NENA countries of the Mediterranean Basin import at least 50% of the calories they consume. With growing populations, and increased demand for agricultural products and changes in diet, increasing reliance on imports in the future is expected. The cost of environmental degradation (COED) in 2010 ranged from 2.1% to 7.4% of GDP for different countries in the NENA region.

Unsustainable use of natural resources (soil, water, topography, vegetation, livestock, forests resources) and inappropriate farming techniques exacerbate vulnerability and degradation of agricultural land, reduce productivity, and impact the long term resilience of these areas. Climate change is exacerbating the impact of LDD, and in turn LDD is a driver for climate change. Unregulated movement of livestock between countries, for instance, can aggravate overgrazing and LDD. Soil erosion in watersheds extending across national boundaries generates environmental impacts both at the up-stream and down-streams of river/ lakes systems. This often results in soil erosion by wind generating sand and dust storms, resulting in damage and productivity loss in the source and deposition areas across international boundaries and across the Mediterranean Sea. Increasing evidence suggests that migration driven by land degradation is on the increase and interacts with other processes in ways that undermine the sustainability of household livelihoods. Unless concerted regional collaborations for tackling the drivers of LDD are taken, it will result in a worsening situation and eventually in a self-reinforcing downward poverty cycle. Regional actions can be transformative catalysts of change if properly connected to national priorities and on-the-ground actions. Proposed actions. The FAOLAND MEDNET regional project is proposed to establish a network to support sustainable land management and coordinated actions that promote sustainable rural development and enhanced environmental protection. The focus will be on regional/international collaboration and the project will reinforce efforts to avoid wasting precious land resources through the establishment of partnerships and the implementation of national/regional projects with focus on common challenges. Technically, assessing land suitability for different land uses taking into account social, economic, environmental, governance and climate change issues and competing interests for land, should guide the selection of practices that reduce land degradation and provide sustained livelihoods for local populations. National land use planning policies need to be revised and aligned into a regional approach to ensure efficient integration to guide sustainable use of land. The project will introduce regional decision-support tools to promote concerted land resources planning and will promote regional collaboration to address LDD and climate change. The planned activities will deploy tools to enhance the sustainable management of watersheds and grazing areas/rangelands extended over boundaries through technical and policy tools, dialogue, and strategic action plans. The project will foster regional collaboration to enhance adaptation to drought, facilitate exchange of information and experience in policies and strategies for drought preparedness, and boost the prediction and early warning systems based on regional data coverage and climate change. Finally, the project will foster regional dialogue and collaborative action to promote sustainable management of natural resources.

THE DIVERSITY OF MEDITERRANEAN FOOD CULTURES AND CULINARY SYSTEMS AS A DRIVER FOR THE REVITALIZATION OF THE MEDITERRANEAN DIET IN THE CONTEXT OF SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN REGION

Chaired by **F. Xavier Medina**, Universitat Oberta de Catalunya (UOC) & ICAF;
George Baourakis, Director, CIHEAM-Chania, Greece

Concept note

Until the present, the Mediterranean Diet has been observed as a healthy model of medical behaviour. Nevertheless, and after their declaration as a Cultural Heritage of the Humanity by UNESCO, the Mediterranean Diet is actually being (and must be) observed as a part of Mediterranean Cultures, and opening their concept as an equivalent of Mediterranean Cultural Food System or Mediterranean Culinary System.

In this sense, the Mediterranean Diet is not simply a set of healthy nutrients, but a complex web of cultural aspects that depend on each other and lead from nutrition to the economy, through the law, history, politics or religion... This point of view has to be capital in the future discussions about the Mediterranean Diet, their challenges and their future perspectives.As every food system in its own bio-social context, the Mediterranean Diet is an outstanding resource, not yet been fully acknowledged and enhanced within the Euro-Mediterranean Partnership for the achievement of an effective sustainable development in the Mediterranean area, as it was already pointed out ten years ago in the report Mediterranean Strategy on Sustainable Development, issued in 2005 by the United Nations Environment Programme. From a local Mediterranean point of view and as a proximity model consumption, Mediterranean food and diet can be a sustainable resource for the Mediterranean Area. In this context (and as every food system in their own bio-social context), the Mediterranean Diet is an outstanding resource -locally produced in cultural coherent contexts- for the Mediterranean basin. But we must have also in mind that the Mediterranean Diet is a complex web of cultural aspects that depend on each other, and we have to remember that every link in the chain must be protected, from the production to the dish and beyond.

Objective: The session will contribute to better understand the sustainability of Mediterranean Food Systems related to local cultures, productions, cuisines, gastronomies and lifestyles, as an outstanding resource locally produced in culturally local contexts, in and for the Mediterranean basin.

The diversity of mediterranean diet cultures and the culinary systems

Françoise Aubaile-Sallenave, Musée de l'Homme. Paris.

Abstract

Referring to the historical sources of the Mediterranean diets, and comparing them with the features of the present day ones, we can specify the common features, and then the changes, enabling to estimate the evolution of the diversity of the diets and in what fields it intervenes.

Old Concepts, New Concepts, Diversity and Change; ideas about the 'Mediterranean Diet' from a biosocial perspective

Helen Macbeth, Honorary Research Fellow in Anthropology, Oxford Brookes University, Oxford, UK.

Abstract

This paper will start with the use of the phrase, the "Mediterranean Diet" by Ancel Keys (1970) with its emphasis on the cardiovascular diseases, and the concepts of a Mediterranean Diet that resulted it from it. Such concepts spread widely as a diet beneficial for health. Other researchers followed with regard to various medical conditions. However, Keys' use of the phrase implied that the food system he had studied in one part of Italy also represented those in all nation states around the Mediterranean Sea with their different national and intra-national cultures.

In the 1990s I was interested in the concept of the Mediterranean Diet in UK and elsewhere and, in pursuing this, I carried out research that showed significant diversity in food intake (within very few kilometres) either side of the Franco-Spanish border in one mountain valley and in one coastal area of Catalonia. Furthermore, this research highlighted a difference between what respondents claimed they ate and what the food intake recall data showed. Such diversity did not accord with the Keys-derived concept of the Mediterranean Diet. Appropriately, more recent medical studies concentrate on food or drink items and their chemical constituents rather than some generalised concept of a geographic diet.

Meanwhile, cultural studies have been concerned not only with the diversities in food systems around the Mediterranean but also have sought out commonalities and interconnections, leading to the successful UNESCO heritage declaration of the Mediterranean Diet as 'Intangible Cultural Heritage'. As future generations will undoubtedly face grave ecological challenges, of significance to cross-disciplinary scientists is a new interest in the food systems around the Mediterranean for their sustainability, which is probably of greater importance to the survival of humanity than the medical conditions of individuals.

The Tunisian model as a component of culture's food diversity and Mediterranean culinary practices.

Sonia MLAYAH HAMZAOUI, Nutritionist, Researcher at the National Institute of Heritage, Tunis

Abstract

The Mediterranean food model, as well as the culinary practices that flow from it, constitute a heritage common to all the countries of the Mediterranean basin but at the same time specific to each one of them. Indeed, the eating habits of every population depend on many factors including the climate, the agricultural landscape and products of the soil, the economic level but also the civilization, the beliefs, the religions and the social rites that characterize it. These habits are translated into a set of sociocultural behaviors and collective practices that constantly adapt to the demands of new lifestyles; economic conditions; technological revolutions; industrial progress and urbanization; the integration of women into the labor market; in short, modernization in a general way. Like all countries of the Mediterranean basin, Tunisia is unique by its own socio-cultural framework. While consolidating the uniqueness of the Mediterranean food model, it contributes to its diversity. Our goal is to highlight the specificities of the food model and culinary practices of Tunisians from the supply to the processing of leftovers through the conservation, preparation and consumption of food. The socio-anthropological analysis of this model and these practices allows us to designate the changes they have undergone through social change. Revitalizing the Mediterranean diet as a sustainable food system involves highlighting the diversity of food cultures and understanding the changes that affect them. Through the study of it, many solutions can be proposed.

Innovative approaches and tools to achieve sustainable agriculture and food systems in Mediterranean Basin

Parviz koohafkan, President World Agricultural Heritage Foundation

Abstract

Agriculture and food systems today are facing unprecedented challenges of food insecurity, malnutrition, urbanization and environmental degradation. The number of hungry people in the world is reaching nearly a billion, while the overweight and obese number of people in urban areas have reached an epidemic proportion, with countries showing no decline in these trends. Intensive food production, food exports and distribution and waste and inadequate consumption patterns not only affects human health and wellbeing, but also degrading the environment and contributing extensively to climate change. Today, our current food production and consumption choices, contribute to land and water degradation, environmental and oceanic pollutions and are responsible for about a third of man-made greenhouse gas emissions.

At the same time, a myriad of family farming and local food systems have survived the test of time and still contribute to healthy diets, socioeconomic prosperity and cultural integrity and considerable ecosystem services that need to be protected. Among others, the Mediterranean food systems is one of the most biodiverse and rich diet in the world, and home to a complex and intricate patchwork of cultures, climates, and cuisines are under threat due to urbanization, environmental degradation and political unrest. Building on generations of accumulated knowledge and experience, Mediterranean traditional and ingenious agri-food heritage reflects the evolution of humanity and its profound harmony with nature.

There is a great opportunity for the re-invention and re-imagination of sustainable agriculture and food systems by linking "global to local", "past, present and the future", "scientific and traditional knowledge", "tradition and modernity", "global data and crowd sourcing" etc. It is suggested that innovative thinkers, academicians, policy makers and practitioners who understand that every obstacle is a pathway to opportunity, and considering that Mediterranean Basin is the cradle of humanity where agriculture is the heritage of the mankind, with its rich wisdom and culture, combined with science and digital technologies, could lead to a resilient agriculture and sustainable food systems.

Exploring links between diet and landscape in the Mediterranean

Alexandre Meybeck (CIFOR) and **Vincent Gitz** (CIFOR)

Abstract

Definitions of landscape are numerous, designed by various disciplines and approaches, in diverse languages. However, they generally share two characteristics: a landscape is a geographically de-

termined space, from a human perspective. A landscape is apprehended, conceived and defined by humans, by their activities, culture and vision of the world. As defined by the Council of Europe, a landscape is "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".
In traditional food systems diets and landscapes are closely linked. The landscape determines what foods can be collected and grown. The diet, selecting what foods to collect and grow, fashions the landscape. Most of the diets are no longer determined by what is locally produced, as it was for traditional food systems. The connection between a diet and a geographic area has loosened with globalization, with growing disconnection between the space of production and the space of consumption.
Diets and landscapes are both interfaces between nature and culture, cultural constructions of nature. Grounded in nature, history and tradition, they are dynamic, exposed to outside influences. Their linkage and mutual reinforcement may contribute to strengthen the resilience of their common identity. It is now often more metaphoric than physical, mediated as it is by typical foods, through various market linkages: local markets, geographical indications of provenance, advertising, the very discourse on the Mediterranean diet. Understanding the evolution of this relation between landscape and diet, its urbanization, may provide critical means to support their common sustainability.

Revitalization of Med Diet through Tourism: The case of Premium quality food Products.

George Baourakis, Director, CICHEAM-Chania

Abstract

The Med Diet concept and its brief history of Nomination and Implementation. Contribution of CIHEAM to the sustainability and promotion
of MED Diet. Linking National premium quality food products and systems to Tourism. Strengthening the interaction of MED DIET and Tourism
at national levels in the Mediterranean Basin. Increasing the added value of locally produced food quality products through inter sectoral communication and collaboration with Tourism.

APPEAL, ACCEPTANCE, ADOPTION OF A CONTEMPORARY SUSTAINABLE MEDITERRANEAN DIET LIFESTYLE THROUGH EDUCATION, COMMUNICATION AND CONSUMER EMPOWERMENT

Co-chaired by **Suzanne Piscopo**, Head of Dept. of Health, Physical Education and Consumer Studies, University of Malta, and Society for Nutrition Education and Behavior; **Lluis Serra-Majem**, President, IFMeD and University of Las Palmas de Gran Canaria.

Concept note

People eat food not nutrients! This pragmatic statement is imperative to keep in mind by all those who wish to foster long-term food consumption changes among different target populations where the focus is on dietary and lifestyle habits based on core Mediterranean Diet principles. There are several comprehensive behaviour change theories which one can consider in this endeavour. Many of these incorporate the notion that change can only come about if the individual finds what is being proposed as appealing and acceptable based on a) their own individual characteristics such as taste preferences, food connotations, health and nutrition goals, time available, culinary skills or lifestyle, or b) their socio-cultural contexts such as food trends, food symbolism, food rituals, food traditions and food marketing. Yet appeal and acceptance of a food or diet can only be translated into actual adoption of the food or diet if the food is available on several fronts. This can range from physical availability, to economic availability, to the vaster cultural availability. In other words, various factors within a food system can facilitate or impede the adoption of a food or diet within ones everyday living. Global, regional and national health authorities and professional organisatons or NGOs, as well as the international marketing machine are currently promoting the Mediterranean Diet as one of the most sustainable diets. Others will take this one step further by underlining that the concept of the Mediterranean Diet can be extended to incorporate a lifestyle which encompasses conviviality around food preparation and consumption, protection of biodiversity and local food producers, and being physically active. It may be argued that for a Mediterranean Diet Lifestyle to be adopted, in any promotional messages and activities, whether through formal or informal education, different social or mass communication channels, or other creative initiatives and actions, sensitivity to contemporary dietary needs and lifestyles needs to have centre stage. Whereas the core principles of the Mediterranean Diet should not be neglected, adaptation of these core principles may be necessary in order to make the Mediterranean Diet appealing, acceptable and feasible in contemporary realities of different nations. The ultimate goal is for individuals and families, as consumers and agents of change, to be empowered to make sustainable food choices for their personal, community, regional and global wellbeing, as well as to advocate for and build enabling environmental and food policies.
From simple school activities to larger scale school interventions, from community adult education to multiple-level regional projects, and from food systems and dietary guidance initiatives to more artistic approaches, different panellists will explain the various components and processes and any results achieved. Key factors considered and stakeholders involved will be highlighted to demonstrate the valid role of education, communication and consumer empowerment for change towards a more sustainable food consumption.
This session will adopt a Pecha Kucha approach and be followed by an open discussion between the panellists and the audience present.

Objective: This session will be showcasing and discussing different projects and initiatives which have been implemented in different settings to promote the Mediterranean Diet as a sustainable diet.

Achieving a 'Green New Diet': What's a Nutrition Educator To Do?

Jennifer L. Wilkins, PhD, RD, Society for Nutrition Education and Behavior

Abstract

In the United States, the Green New Deal introduced by Alexandria Ocasio-Cortez (AOC) the newly-elected hotshot from New York's 14th district, has been getting a lot of attention. On the one hand, it is celebrated as a critical and essential call to action to avert ecological catastrophe and preserve quality of life. On the other, it is vilified as an unrealistic assault on American values and a cruel attempt to take American's hamburgers away. Aside from asserting it is the responsibility of the U.S. government to secure access to healthy food, the Green New Deal includes no details on how diet, health and environmental sustainability can be integrated in practical terms. Nutrition educators have an important role to play in the "sustainable diets" space -- from motivating consumer food-related behaviour to implementing policy, systems and environmental approaches. Advances in our understanding of what leads to lasting behaviour change now can be applied to motivating consumers toward sustainable dietary practices. Nutrition educators can work to create environments through food system change to facilitate adoption of sustainable diets. Nutrition educators are also leading the development of sustainable dietary guidelines at the regional and national policy level. The Society for Nutrition Education and Behavior recently published a position paper in its Journal (JNEB) on the importance of including sustainability in the Dietary Guidelines for Americans. While other nations have had some success in this regard, important and substantial barriers exist to bringing this approach to dietary guidelines in the United States. Nutrition educators around the world, including the Mediterranean basin, are well-positioned to lead the effort to include sustainability principles into dietary guidance and to empower eaters to advocate for food system change.

Healthy Children, Healthy Planet: A School-Based Educational Programme Focusing on Promoting Healthy and Sustainable Eating Behaviours in Children

Vassiliki Costarelli, PhD, Department of Home Economics and Ecology, Human Ecology Laboratory, Harokopio University, Athens; WWF Hellas

Abstract

Healthy and sustainable eating behaviours should be encouraged in children. The purpose of this study was the creation, application and evaluation of a specifically designed educational programme for children 5-11 years old, aiming at encouraging sustainable and healthy eating patterns. The three-month, pilot, school educational programme consisted of teacher training sessions, implementation of the educational package based on experiential learning activities (11 sessions, 1 per week), 3 parental and teacher's educational sessions, 2 feedback meetings with the teachers, and a special school cooking festive event with the participation of a famous TV chef. A total of 290 children (intervention group n=230, control group n=60), from 4 different schools located in Attica, took part in the study. Parents completed a specifically designed questionnaire, before and after the intervention, assessing socio-demographic and anthropometric characteristics, adherence to the Mediterranean Diet (MD) (KIDMED), physical activity levels of their children, together with habitual sustainable eating and food waste behaviours in the household. In the intervention group, there was a statistically significant increase in the percentage of children with "good adherence" to the MD (from 24.8% to 28.3%, p=0.035) after the intervention. The frequency of consumption of fruits and vegetables also increased more after the intervention in the intervention group (p=0.020 & p=0.057, respectively). A significant reduction in food wasted was also reported for bread, fruits and vegetables in the intervention group. This pilot project provides evidence that such multi-component educational programmes positively affect healthy and sustainable eating behaviours in participating children and warrant consideration for scaling up.

Two Year School-Based Intervention and One Year Washout Nutrition Interventions to Promote Healthy Eating and Physical Activity in Lebanese School Children

Nahla Hwalla, American University of Beirut, Lebanon

Abstract

The aim of this study was to determine the effectiveness of the school-based nutritition intervention programme when implemented for 2 years followed by one-year wash-out. Private and public schools were included in the study and were randomly assigned to either intervention or control groups. Students completed pre- and post- assessment measurements and those in the intervention group received intervention components for two consecutive years. Measurements of changes in BMI, eating habits and nutrition knowledge were recorded. Results showed that students in the intervention public schools were 52% less likely to be overweight after wash-out, when compared with control schools. Students' dietary habits as well as knowledge and self-efficacy scores improved all through the intervention years, both in public and private schools, and a sustained effect was observed after the washout period, mainly in public schools. Students' fruits and vegetables intake significantly increased in intervention versus control groups, both in private and public schools, with a sustained effect only in public schools. The number of children reporting not having chips and sweet drinks also increased in intervention groups compared to control groups, mainly in public schools. School policies securing the adoption of nutrition interventions promotin a Medieteranean Diet type lifestyle are needed for sustained behavior and BMI changes in children.

The FED Regional Programme: What It Is and What Has Been Achieved

Giuseppe Carruba, Director, SIRS, ARNAS-Civico, Palermo; DIAITA, Vice President

Abstract

The FED regional programme officially started on February 2014 and is aimed at improving the health of the Sicilian population by changing inappropriate behaviours and lifestyles that favour the emergence of chronic diseases of high epidemiological importance and great socio-economic impact, including cardio- and cerebro-vascular diseases, cancer, diabetes, chronic respiratory diseases and obesity. The programme dedicates special attention and efforts to achieve a substantial change in negative eating habits and/or incorrect nutritional information, especially by promoting the adoption of a traditional Sicilian (Mediterranean) dietary model. The programme is based upon a cascade training system, consisting of a 1st level (regional), an ensuing 2nd level (provincial) and a final phase resulting in the establishment of an Integrated Territorial Network that will eventually lead to seminally diffuse FED principles and best practices, impacting on all relevant targets of selected macro-areas (health, education, agronomy) and stakeholders. More specifically, the FED programme aims to: (a) establish a high-quality regional training programme with the goal of developing knowledge and expertise in the framework of Health and Nutrition, in line with validated scientific evidence on the use of a Mediterranean Diet as a primary prevention instrument for major non-communicable diseases, including cancer; (b) promote healthy eating behaviours and lifestyles among school students of all educational level, as well as among pregnant women; (c) encourage healthy eating at both restaurants and community catering settings (schools, hospitals, refectories, canteens); (d) promote the sustainable consumption of healthy food across the population, also in keeping with product seasonality, territorial productions, food traceability and safety, and improvement of health potential also through precision agriculture, including the recovery and use of byproducts; (e) foster consumption of healthy food through consumer awareness and empowerment. Both the results accomplished and the expected impact will be presented and discussed.

Education cannot begin early enough for the Sustainable Mediterranean Diet and Lifestyle

Elliot M Berry, Braun School of Public Health, Hebrew University – Hadassah Medical School, Jerusalem, Israel

Abstract

The Mediterranean diet has the best scientific evidence for health benefits and it is also an excellent example of a sustainable diet. In contrast, such a diet is not consumed by the majority of the Mediterranean populations. To rectify this somewhat anomalous situation it is necessary to change eating behavior and food choices. For this the role of education is of paramount importance, especially for children. We have carried out a number of successful projects in kindergartens and junior schools both in Israel and the Palestine Authority. The interventions involved 1048 pre-school children and their teachers; and 449 junior school children, their teachers and mothers. Control groups were of similar numbers. The emphasis was to increase the consumption of fruits and vegetables, improve the content of mid-morning snacks, increase drinking water as opposed to sweetened beverages, and increase physical activity. Also, we were able to use the children as "agents of change" to change their family's menus in the direction of the Mediterranean diet. Other parallel activities included cooking lessons and, in the future, promoting school gardens. However, and importantly, we were unable to reduce watching television. Considering the problem of behavior change at a higher level, we believe that the methodology of Positive Deviance would be most useful. This is based on the premise that in any community there are people who are more successful in finding better solutions to problems than their neighbors who have access to the same resources. Thus we would identify those children and families who are already following the Mediterranean diet and lifestyle (the Positive Deviants) and find out what effective strategies they were using. Then the challenge is to try to apply them to the rest of the community. The advantage of this methodology is that it is a bottom-up approach which is community valid – i.e. it already is working and thus has a better chance of succeeding.

From Smart Rabbits to Sustainable Habits: School-based Education and Community Interventions Promoting the Mediterranean Diet in Malta

Suzanne Piscopo, Head of Dept. of Health, Physical Education and Consumer Studies, Faculty of Education, University of Malta

Abstract

The Maltese Dietary Guidelines are based on the core Mediterranean Diet (MD) principles and form the basis of various school-based and community interventions delivered by professional Home Economists. Fonzu l-Fenek (Fonzu Rabbit) is a popular fictional character developed purposively to promote a balanced, primarily plant-sourced diet based on local seasonal foods and traditional recipes. Through a variety of educational resources, ranging from cross-curricular teaching and learning materials to board games and songs, young learners are introduced to different foods and their sources, the link between food and health, preparation of healthy snacks and food traditions. These resources are complemented by a special school assembly using edutainment and altogether the goal is to make learning about healthy, sustainable eating meaningful and fun for children when their habits are still being formed. The Fonzu l-Fenek edutainment is also frequently carried out at mothers' clubs or public events. The idea is to share the messages with parents, grandparents and other child carers so that children are exposed to similar 'education' at home and elsewhere and adults are encouraged to facilitate the availability of foods conducive to a MD. This targeting of adults to encourage them to appreciate the value of the MD for sustainability and also to empower them to have the skills to seek, choose, demand and prepare foods to consume this diet is done through a public-social partnership

community course called GĦaqal id-Dar, Ħajja AĦjar (Being Smart at Home for a Healthy Life). Here the goal is to enhance adults' nutrition and consumer literacy so that eating in line with the MD is not seen as a burden, but rather as a pleasurable norm which is for the benefit of household members and the larger community. Feedback on these various initiatives is positive and there is a demand for their continuation.

Teaching the Mediterranean Diet: Food as a Bridge Between Theory and Practice

Anne E. McBride, Torribera Mediterranean Center, The University of Barcelona/Culinary Institute of America

Abstract

The benefits of the Mediterranean Diet rest on settled scientific foundations. Extensive research—the work of scientists in medicine, nutrition, epidemiology, or public health, mainly—demonstrates why it has long been considered the world's healthiest diet. Its principles also have the advantage of deliciousness behind them: What plate of food is more inviting than one full of colours and flavours in the form of produce, whole grains and olive oil? So why does the Mediterranean Diet lag in adoption by restaurant chefs, foodservice operators and food manufacturers? And why do health professionals not use it like they could to teach their patients how to become healthier, rather than just telling them they must? The traditions and rich history and culture that have shaped the Mediterranean Diet are also at risk of fading as we seek globalised experiences. Yet, at a time when it has become unavoidable to change what we grow, cook and eat for the health of the planet as well as our own, the Mediterranean Diet has never been more relevant. A valuable key to facilitate its greater adoption and preservation lies in providing specialised training to chefs and culinary professionals, writers, communicators, food scientists, doctors, nutritionists, public administrators and all others who have the power to spread the Mediterranean Diet's message of health, sustainability and taste. That training includes the essential teaching of culinary skills, to better transfer knowledge from theory to practice. This presentation will use the case of two Master's degrees developed at the Torribera Mediterranean Center at the University of Barcelona to discuss how to provide students of diverse backgrounds with a deep understanding of the Mediterranean Diet and food systems of the Mediterranean as a model of healthy eating that they can pass on in their daily professional and personal lives.

Eating Art

Sandro Dernini, Chairman, Forum on Mediterranean Food Cultures; Secretary-General, IFMeD

"Eating food as art" will be presented as a qualitative problem solving approach whereby the Med Diet 4.0 framework will be discussed as a basis for managing through "art" the accelerating phenomenon of overweight and obesity among children and adolescents, as well as a means to promote the Mediterranean Diet and the diversity of the Mediterranean Food Cultures heritage. Taking into account that young generations are becoming the highest majority of the consumer population in the Southern and Eastern Mediterranean countries, the Ark of the Well Being project -- in which artists and scientists have been collaborating through Plexus International since the early 80's, will be presented as a creative community-based experience for promoting The 2005 Rome Call for a Common Action on Food in the Mediterranean. The aim of this project is to raise more awareness and foster attention to the erosion of the Mediterranean Diet, together with enhancing the cognitive capacities of the young Mediterranean generations. A strategic new creative approach for a transformational change of perception and awareness on the current notion of the Mediterranean Diet will be proposed for the wellbeing of present and future generations. Art is proposed as a biological and cultural need for our evolution and diversity.

THE CHALLENGE OF ORGANIC FOOD SYSTEMS IN THE MEDITERRANEAN

Co-Chaired by **Denis Lairon**, Aix-Marseille University and OFSP, France;
Flavio Paoletti, CREA-Research Centre for Food and Nutrition and OFSP, Italy

Concept note

Food security, sustainability and quality becomes a stringent topic in the Mediterranean area. For lots of these countries, food security is not achieved and highly relies on food importations, while the coming pressure of climate change is expected to make more difficult agricultural production and environmental protection in the area. In addition, related to ongoing nutritional transition, the rates of overweight and obesity are presently among the highest in most Mediterranean countries. This is accompanied with certain levels of nutrient deficiencies.

Organic agriculture, based on agro-ecological principles, has spread since the mid 20th century to nearly all regions in the world and the organic food market is growing rapidly worldwide. One of the underlying determinants of organic agriculture and food production is the link between sustainability and health. Various studies have shown the contribution of organic agriculture to global sustainability issues. A beneficial effect of organic agriculture on human health can be inferred by the prohibition of the use of synthetic pesticides: recent studies show a markedly lower prevalence of overweight and obesity and some pathologies in organic food consumers. Moreover, it has been shown that present regular organic consumers consume more fruit, vegetables, nuts, legumes and dietary fibre, and less meat and dairy products, as in the traditional and recommended Mediterranean Diet.

In the Mediterranean context, organic agriculture seems to be a promising way to develop local food production in a sustainable way by achieving local, seasonal, nutritive and safe food production for inhabitants of these countries, with some exports when suitable.

Thus, combining in a Mediterranean sustainable food system both the plant-based Mediterranean dietary pattern and lifestyle, and the organic production and consumption ways and ethics is expected to provide sounded sustainable solutions for the present and future.

The Organic Food System Programme (OFSP) (www.organicfoodsystem.net) is an international programme that encompasses academic and practical implementation. OFSP was initiated in 2014 and was officially launched in February 2016. The OFSP is conceived as a holistic global food system model approach to production and consumption patterns. The scope is to identify, understand and describe transformation processes towards sustainable food systems and make lessons learned available in a globally systematized and contextually applicable way. OFSP uses the organic food system as a model to understand drivers of sustainable food consumption and production and to link this to real-world examples.

The OFSP contributes to the 10-Year Framework of Programmes of the joint FAO-UNEP "Sustainable Food System Programme (SFSP)". From February 2017 the project "Organic Food System Programme: organic food systems as models and living laboratories for transformation processes towards sustainable food systems" has been endorsed as one of the eight core initiatives of the SFSP.

OFSP and Mediterranean Organic Agriculture Network with others could be the appropriate platforms to collectively handle such a challenge and jointly develop strategies and actions in that direction.

Objective: To provide scientific evidences and real-world examples about how the organic food system can contribute to the sustainability of food systems in the Mediterranean.

Organic Food System Programme a Core initiative of United Nations One Planet network – background and how it could contribute to the revitalization of the Mediterranean Diet

Jostein Hertwig, CEO BERAS International Foundation and member of Organic Food System Programme Steering Committee

Abstract

The Organic Food System Programme (OFSP) network was established following an International Workshop in Rome 15-16 September 2014 "Assessing Sustainable Diets within the Sustainability of Food Systems. Mediterranean Diet, Organic Food: New Challenges". The workshop was a joint undertaking by CREA – Research Centre for Food and Nutrition, FAO/UNEP Sustainable Food Systems Programme and the International Research Network for Food Quality and Health (FQH). In 2017, OFSP was endorsed as a Core initiative of United Nations 10YFP Sustainable Food Systems Programme under SDG 12 Sustainable Consumption and Production.

OFSP is science based and studies organic food systems globally as models and living laboratories for transformation processes towards sustainable food systems. For our common development organic food systems can provide a set of unique experiences to learn from as they consist of well-defined principles and practice, as well as regulations and certifications, in different environments as well as providing abundant sets of data for modeling and testing in different geoclimatic and socio-economic regions around the world. Decades of real experience in production, processing and consumption provide empirical data and indications drivers of the strengths, weaknesses, and improvement potentials of organic value chains. Furthermore, the organic sector is actively evolving into manifestly encompassing a full spectrum of sustainability issues such as health, ecology, fairness and care.

The OFSP network today consists of 72 partners from all continents. Each partner has signed an agreement and committed to share their research, innovation, capacity building and practical achievements related to a set of deliverables to the UN programme. There are 11 partners from the Mediterranean region. Being a Core initiative of the United Nations One Planet Sustainable Food Systems Programme, OFSP is willing to offer our contributions to foster the development of a "Mediterranean Multi-stakeholder Platform on Sustainable Food Systems".

Bio-districts as examples of local and sustainable food systems

Salvatore Basile, President of IN.N.E.R. International Network of Eco Regions

Abstract

The Bio-districts or Eco-Regions are territories where farmers, consumers, public authorities and other local actors realize an agreement aimed at the sustainable management of local resources, based on organic farming and Agroecology.

The participatory and inclusive community of a bio-district act on the territory with a virtuous governance that decide from citizen's level to shift towards a real local, sustainable and healthy food system. The bio-district approach contributes to the major EU global challenge of ensuring food and nutrition security. It also aims to respond to the international agreements on climate commitments and to the current EU political priorities of growth, secure and competitive economy, a more democratic Union and the circular economy. It is also consistent with the orientations of the UN Agenda for 2030.

Fifteen years ago, in 2004, started the development of the Cilento Bio-district, the first in Italy, in the area of the National Park of Cilento (Campania Region), where the Mediterranean Diet was codified by Ancel Keys. A strong bottomÐup push is at the origin of the creation of Cilento BioÐdistrict. During many public meetings, with the involvement of all citizenship, was shaped the concept of "bio-district": guidelines, model and strategy were set up with a cooperative work.

Starting from the Cilento experience were developed in Italy 32 bio-districts. The International Network of Eco Regions (IN.N.E.R.) was created in 2014 to coordinate and promote the spread of bio-districts in

the World, with the following challenges:
• to develop territorial brands with shared values (enhancing transparency and social control);
• to boost Research and Technological development;
• to promote cooperation programmes to spread the flourishing of the bio-districts networks at international level to achieve Sustainable Development Goals.

The organic strategy in Tunisia- Approaches and plans for the creation of bioterritories

Samia Maamer, General Director of Organic Agriculture, Ministry of Agriculture Tunisia

Abstract

Organic agriculture is gaining a remarkable place in Tunisia in the agricultural and economic strategy of the country. This sector is not only job creators and contributes to the improvement of the country's economic balance but it responds to a large number of ODDs through its environmental, social, economic and health pillars.
Aware of these values, Tunisia has put in place for 20 years, all the legal arsenal adequate to its organization and control for an infallible credibility as well as accompanying measures to encourage investment in this sector.
Tunisia is also the first African and Arab country to have specific regulations for organic agriculture, the world's leading country in organic olive-growing areas and ranks first in Africa in organic agricultural areas and has developed the first organic farming school. .
Tunisia is the only African and Arab country that has benefited from mutual recognition with the EU of organic products since 2009 and from Switzerland since 2011.
With nearly 8,000 organic stakeholders, more than 335,000 ha of certified areas and more than 1 million tons of production in 2018, Tunisia has managed to cross the 210 million euros of export with 60 different biological products.
Considered as an engine of sustainable development, organic agriculture is the subject of a vision in Tunisia in 2030 and a national strategy for its promotion and development by 2020.
The actions led reinforced Tunisia's positioning in international organic markets and highlighted Tunisia as an economic and tourist destination where organic is a culture and a mark of quality and credibility.
Tunisia intends to make the Tunisian model a successful example of economic development in its own right by integrating organic farming into sustainable regional development by associating it as a dynamic generator with economic components including bio-tourism, handicrafts, industry, culture ...
..and a model for south-south cooperation
The development of 20 sectors (plant, animal, forestry and aquaculture) included in its strategy, the choice of 5 pilot areas representing the 5 bioclimatic floors where organic would be precursor of a development of various economic sectors and the development of 24 circuits organic agritourism, are all programs serving the development of bio-tourism in Tunisia.
Having a sustainable and equitable organic agritourism strategy is an important tool to initiate a new impetus for the development of organic farming, its sectors, and to highlight the activities of organic producers in order to improve their incomes, their status and become precursors of rural dynamics in Tunisia.
The organic model in Tunisia responds to a growing market demand for a need to preserve human health, the environment, discover territories, products, history, society, ancestral know-how ... and value chain equity through PPP. Let's travel through the Tunisian organic model.

SEKEM, a 40 years model for organic agriculture and sustainable development in Egypt

Jane G. Hanna, Research and Innovation Adviser, SEKEM, Cairo, Egypt

Abstract

SEKEM was founded in 1977 by Dr. Ibrahim Abouleish with the vision of supporting sustainable development and giving back to the community. SEKEM aimed to be the model where mankind is living in social forms reflecting human dignity; and where all economic activities are conducted in accordance with ecological and ethical principles.
Since its establishment, SEKEM realized organic agriculture and rural development as the pathway towards sustainable food system. Organic agriculture ensures creating productive landscape; reconciles food production and environmental conservation. Organic management also relies on local human resources and knowledge to enhance natural resource processes. Thus, by reducing dependence on off-farm inputs and creating more balanced nutrient flows, ecosystem resilience is strengthened, food security is increased and incomes are generated.
SEKEM established specialized companies along the Agro-food value chain to ensure quality production and marketing of organic products. The umbrella organization for SEKEM's independent firms is SEKEM Holding under which seven companies are affiliated working across the Agro-food value chain. Among these ventures is ISIS for Organic Food, established in 1997, to produce wholesome and nutritious food free of any artificial additives/preservatives. Also, LOTUS, founded in 1977, that processes all kinds of organic herbs and spices from Biodynamically cultivated plants.
To evaluate the impact, SEKEM developed the Sustainability Flower that represents a management, assessment and communication tool symbolizing the concept of sustainable development in its four dimensions (economic, societal, cultural, ecological - with its six sub-dimensions). It was developed within a network of international organizations from the Biodynamic movement under the "International Association of Partnership for Ecology & Trade, IAP".
Heliopolis University, founded by SEKEM, is empowering students and entrepreneurs to be the champions of sustainable development and Agro-food sustainability in different spheres of life via providing a place where new ideas meet fertile ground for research and innovation.

Organic food consumption patterns : a link between sustainable food consumption and production : data from the French Nutrinet-Santé cohort study.

Denis Lairon, Aix-Marseille University and OFSP, Marseille, France
Emmanuelle Kesse-Guyot, EREN-Paris 13, Bobigny, France

Abstract

We aimed to describe the attitudes, dietary patterns and impacts of regular consumers of organic food in France, compared to non-consumers of organic foods. To that aim, we used the NutriNet-Santé prospective cohort launched in 2009: a web-based prospective study of about 100,000 adult volunteers (2/3 women), with repeated detailed daily food intakes, shares of organic products per food groups, antropometric and health data, and 20,000 blood and urine samplings.
Our data from 12 original scientific articles (2013-19 *) obtained from 30-70,000 adults, can be summarized as follows.
Regular consumers of organic products, compared to not, show:
• specific socio-demographic characteristics (higher education level, more physical activity, less smoking, less low income) ;
• a healthier dietary pattern (more plant food-based) and closer to the healthy Mediterranean diet model, better fitting food-based and nutritional recommendations;

• markedly less overweight and obese (men & women), with a significantly reduced probability of cardiovascular risk (MetS) and cancers;
• much less pesticide-contaminated foods, significantly less pesticide residues in urines;
• less impact on natural resources (land occupation, energy use) and GHG emissions.
Thus, they show a better compliance with the sustainable diet concept (cf FAO definition, 2010) and highlight a promising way how to integrate sustainable agro-ecological production and consumption as well as ecosystem protection.

UNDERSTANDING THE FOOD ENVIRONMENT IN THE MEDITERRANEAN: INTERLINKAGES BETWEEN SUSTAINABLE DIETS AND SUSTAINABLE FOOD SYSTEMS

Co-chaired by **Gianluca Brunori,** University of Pisa; **Alexandre Meybeck**, CIFOR/FTA

Concept note

Diets are the result of consumers preferences and choices between the foods that are available and accessible to them. Consumer preferences are mediated by the market, that transmits information to producers, processors and retailers. On the other hand, markets influence choice and preferences through the signals that producers, processors and retailers transmit. In a sustainable food system, the signals that markets transmit concur to align preference and choice of all actors towards sustainability dietary standards. A sustainable food system, in other words, creates the material and symbolic conditions for the adoption of sustainable diets. The food environment is the interface between the food system and consumers' preferences, choice and behavior. It is determined by the way the food system is articulated in a given socio-economic social and spatial context in relation to individual consumers. The food environment determines contextual conditions of availability (diversity and quantity of available food), physical and economic access, utilization (knowledge and skills, habits, social norms). Adopting the food environment concept opens new policy avenues, as public authorities can integrate spatial planning, infrastructures development, information and communication flows, welfare measures, trade rules, procurement policies into the overarching goal of creating food environments enabling sustainable diets.
Barriers to transition to sustainable food environments can be related both to the inertia of the actors of the food system and to consumers' choices and preferences incorporated into habits. Policies for sustainable food environments can strongly benefit from cultural resources such as the Mediterranean Diet, which is close to the sensibility of Mediterranean people and can be helpful to orient and support a broad consensus around the need to change.

Objective: the session will discuss the concept of food environment and how it can be applied to improve the sustainability of food systems and diets. It will consider its policy implications, and how to manage trade offs and enhance synergies between food system actors' strategies, in order to create win-win solutions.

Social determinants of sustainable diets: the role of power differentials

Roberta Sonnino, School of Geography and Planning, Cardiff University

Abstract

In theory, the concept of "sustainable diet" provides an important tool to enhance the food environment and progress the wider social, ecological and economic objectives of sustainability. In practice, however, sustainable diets have been widely embedded in a dominant (neoliberal) discourse that views food access as a personal and moral (hence, a-political) issue, rather than as an outcome of broader power dynamics. The goal of this presentation is to explore ways to overcome the shortcomings of this individual choice model through an emphasis on alternative approaches that give more emphasis to the role of the wider food environment. Special attention will be given to the concept of "food desert", pointing to its strengths (i.e., the implicit recognition of the impact of the environment on dietary behaviour) but also to its weaknesses (e.g., its tendency to conflate spatial correlation with causation). Building on this critique and using insights from urban political ecology and relational geography, the presentation will conclude by raising the need for a theoretical and policy approach that goes beyond materialistic understandings of food access and addresses power differentials between food actors and between different localities.

Constructing a food environment that supports healthy eating practices

Dalia Mattioni, University of Pisa

Abstract

Despite advances made in the last decades, especially with respect to reducing the proportion of hungry people in the world, malnutrition remains unacceptably high. Micronutrient deficiencies as well as overweight and obesity are two forms of malnutrition that are increasing worldwide, and the Mediterranean region is no exception. Poor quality diets – dominated by foods high in salt, refined carbohydrates and sugar to the detriment of coarse grains, root crops, legumes and fresh fruits and vegetables - have been identified as an important underlying cause of malnutrition. There is today a broad consensus on the key role played by the evolution of the food system in contributing to this shift. Food environments in particular have been pointed out as an important mediating factor between what the food system delivers and the types of diets – healthy or not – that people have. The presentation will provide an overview of the food environment and its link to the food system and to healthy diets. Drawing on the case study of a Farmers Market in a secondary town of Costa Rica it will subsequently focus on the retail food environment and the way it influences people's eating practices. It will show how traditional food outlets, with their focus on fresh foods, help people sustain the healthy elements of their food practices and of how these, in turn, would need to be sustained by the broader retail food environment, especially in the case of eating out. It will sketch possible policy implications, namely the need to keep traditional food outlets thriving and that of encouraging eating out outlets that offer healthier and culturally acceptable options.

Short food supply chains as catalysers of food environments favouring sustainable diets: an analysis by economic and network sociology

Yuna Chiffoleau, Research director in economic sociology, French National Institute for Agricultural Research (INRA), Joint Research Unit Innovation, Montpellier, France

Abstract

In Mediterranean countries, short food supply chains, limiting the number of intermediaries between producers and consumers, are not new, but have been renewed in the last twenty years. In France, especially, the new requirements of consumers regarding food quality pushed the Ministry of Agriculture, in a context of agricultural economic crisis, to establish an official definition of short food supply chains in 2009, as well as a national programme to favour their development. However, while the State little invested in this programme, a large diversity of actors (citizens' associations, farmers' groups, agricultural extension organisms, entrepreneurs, local authorities...) has been engaged to renew these chains, through promotion, creation of innovative forms, structuration of networks... This movement has been deeply reconfiguring food environments, not only by making more visible and accessible the supply of 'local' and 'quality' food, but also by catalysing new social interactions and relations around these chains. Based on the contribution of economic and network sociology, this communication will point out and discuss how these interactions and relations can favour the evolution of food practices towards more sustainable diets, from a longitudinal analysis of different chains, including short food chains in food aid. Our analysis thus highlights new levers to favour sustainable diets as well as contributes to open a new research agenda about the 'determinants' of food practices, and of food practices' transition.

The Mediterranean Diet in face of an increasingly globalized fodd system: the case of the tunisian food model

Sonia Mlayah Hamzaoui, Nutritionist, Researcher at the National Institute of Heritage

Abstract

On the one hand, we know that the food activities of social actors such as, the purchasing behavior of food products, their storage mode, their preparation or their consumption is different according to the geographical and agricultural particularities of their terroir, their history and their culture. On the other hand, the offer of all products in all continents and in all seasons is now simultaneous. Today, due to the globalization of the media and the development of social networks, the agro-food and mass-market industries control most of the food market. Our goal is to analyze the effects of local and global dialectics on the purchasing and consumption behavior of Tunisians in the context of the Mediterranean diet. Has the globalization of trade and the development of agro-food industries led to a change in the food model of the Mediterranean in general and Tunisian in particular? Are we moving towards a true globalization of the culture of drinking and eating?

Publicized advertising, the establishment of supermarkets and hypermarkets at the expense of neighborhood grocers and the invasion of fast food, street food and restaurants, has serious consequences for the Mediterranean diet. Indeed, these three dimensions truly open the era of mass consumption while new industrial foods tend to become standardized, homogenized and globalized. The adoption of mostly foreign food, for the traditional Tunisian represents an innovation that will accelerate the globalization of food system. Other factors have favored a certain change in his eating habits : gradual obliteration of the regional peculiarities of the culinary art, extinction of traditional flavors and standardization of the food system. Actions to highlight the Mediterranean diet as a healthy food model and as a cultural heritage of identity could slow down and slow the process of globalization of the culture of eating and drinking.

Enhancing the sustainability of high-quality typical agro-food products as cornerstone of the Mediterranean diet: The case study of Apulia in Italy

Gianluigi Cardone, Scientific Administrator, CIHEAM Bari, Italy

Abstract

There is a huge potential for the development of agriculture sector in Mediterranean territories by focusing on the valorisation of typical and traditional products, which represent the cornerstone of the well-known Mediterranean diet.

A pilot project was carried out to assess the sustainability of the high-quality typical agro-food products of Puglia region, in the framework of the Agriculture and Quality Programme 2013–2015 of Puglia Region, under the voluntary Regional Quality Scheme – Products of Quality of Puglia, in accordance with EU Reg. No. 1305/2013.

The methodology adopted for the assessment of sustainability of Puglia typical quality agro-food products was particularly focused on the inter-sectorial and interdisciplinary approach; it was applied by experts of Italian Institutions in this study taking into account the three pillars of sustainable development (environmental, economic, social-cultural) integrated with the health-nutritional component.

The assessment of sustainability for product or farm within agro-food system was elaborated in accordance with the sustainability assessment of food and agriculture systems (SAFA-FAO) approach.

In 2016, Puglia Region approved the guidelines for the voluntary recognition of the additional "sustainability" standard of typical quality agro-food products, which also include the SMART indicators that must be calculated.

The "Additional Sustainability Logo" guarantees the sustainability of the farm process to produce the product from an environmental, economic, socio-cultural and health-nutritional point of view.

The enterprises, adhering to Regional Quality Scheme, can demonstrate that they subscribe to the "Optional sustainability" requirements by using the "Additional Sustainability Logo" on product/s complying with the guidelines.

The associated promotion of the quality of the typical foods of the Mediterranean diet together with a sustainability logo/trademark can contribute to the improvement of the sustainability of the Mediterranean diet, and to an effective sustainable development of Mediterranean rural territories such as Puglia region.

SUSTAINABLE AGRICULTURE, AGROECOLOGY AND SUSTAINABLE FOOD VALUE CHAINS DEVELOPMENT IN THE MEDITERRANEAN REGION

Co-chaired by **Pascal Bergeret**, Director, CIHEAM, Montpellier;
Florence Tartanac, Senior officer, FAO

Concept note

The value chain, as an analytical tool, has been used for more than 50 years as a way to better understand how agri-food products move and gain value from the farm gate to the table. Over the past 20 years, increasing attention has been paid to questions of sustainability within food systems and even more recently there has been a push to try to better understand how the way through which food is provisioned can deliver diets that are also sustainable. In addition, the way value chains are organized and function is a determining factor of the sustainability of land uses and agricultural production. In this session, we illustrate how taking a horizontal network, systemic and territorialised approach to food provisioning systems, combined with a prospective stance, contributes to conceiving pathways towards sustainable food systems and enhanced food and nutrition security. We argue that by looking both within and across value chains, we can better identify innovations in actor arrangements that are bringing new values (particularly sustainability) into food systems. By refocusing our analytical lens away from specific commodities and towards new forms of organization – such as short supply chains, circular economies, gastronomy and geographical indications – we can better capture how they might contribute to promoting sustainable consumption and production in local food systems. We will also emphasize the role and potentials of agroecology in both improving sustainable production and also sustainable consumption through innovative markets.

Objective: the session will illustrate how food systems development in the Mediterranean can be revisited by taking a horizontal network, systemic and territorialised approach. By looking both within and across value chains, positive trends and drivers will be identified in actor arrangements that are bringing sustainability into food systems.

Sustainable Agriculture, Agro-Ecology and Sustainable Food Value Chains Development in the Mediterranean Region

Marie de Lattre-Gasquet, CIRAD, UMR ART-Dev (Acteurs, Ressources et Territoires dans le Développement)

Abstract

Foresight is 'a systematic, participatory and multi-disciplinary approach to explore mid- to long-term futures and drivers of change' (FTP 2014) that is meant to lead to change. The future should not be considered "as something already decided, something revealed bit by bit, but rather as something to be created' (Berger 1958).
CIRAD and INRA, two French agricultural research institutions, have carried out a foresight process on 'land use and food security in 2050', named Agrimonde-Terra. It explores the complex array of interactions between land use and food and nutrition security. As part of this process, a workshop was organized at the initiative of the National Agronomic Research Institute of Tunisia (INRAT) and the Agrimonde-Terra team, and with the Tunisian Farmers' Union (Synagri) to build scenarios of land use and food security in Tunisia for 2050. Four scenarios were built. One of them is named "Agro-ecological land use for diversified and quality food and a localized food system". Trends that favor this trajectory and those which do not were identified. Two years later, training sessions and a one day workshop about foresight were organized for decision-makers from the Tunisian Ministry of Agriculture, and a group made a proposal about the setting up of a foresight process within the Ministry.

See : Le Mouël C., de Lattre-Gasquet M., Mora O. (eds), 2018. Land Use and Food Security in 2050: a Narrow Road. Agrimonde-Terra. Quae eds. https://www.quae.com/produit/1521/9782759228805/land-use-and-food-security-in-2050-a-narrow-road.
See : de Lattre-Gasquet, M., Moreau, C., Elloumi, M., Ben Becher L., 2017a. Vers un scénario « Des usages agroécologiques des terres pour une alimentation diversifiée et de qualité et un système alimentaire territorialisé » en Tunisie en 2050. OCL [on line], 24 (3), D306, https://www.ocl-journal.org/articles/ocl/full_html/2017/03/ocl170025s/ocl170025s.html.

'Innovative markets' as drivers of sustainable food value chains? Insights from short food supply chains' models of development

Yuna Chiffoleau, Research Director in Economic Sociology, French National Institute for Agricultural Research (INRA), Joint Research Unit Innovation, Montpellier, France

Abstract

Short food supply chains remain often reduced to rudiments of the past or activist movements while their diversity is much more larger, especially in Mediterranean countries where they cover both traditional forms (open-air markets…) and new ones (community-supported agriculture, on-line platform…).
Beyond these selling forms, different models of development can be identified, through the orientation given to short food chains, the actors and alliances which are favoured, the innovations which are promoted or rejected. In this communication, from a long-lasting action-research and network leadership on short food supply chains in France, we highlight and discuss how each of these development models addresses sustainable agriculture, agroecology, and sustainable food.
This approach allows going farer than the promotion of specific forms of short supply chain as the best ones to favour sustainable food value chains. It also gives new arguments to support the development of horizontal and territorial collective organisations around local food, in a social innovation and food democracy perspective. Concrete examples will be provided to better capture these issues.

Experience from the biodiversity for food and nutrition project in Turkey

Kursad Ozbek, General Directorate of Agricultural Research and Policies, Republic of Turkey Ministry of Agriculture and Forestry, Turkey

Abstract

The Biodiversity for Food and Nutrition Project is a multi-country, multi-partner initiative led by Brazil, Kenya, Sri Lanka and Turkey and funded by the Global Environment Facility. As a project partner, Turkey is focusing on generating food composition data for 43 species of wild edible plants, including mushrooms and landraces, from three geographically specific regions in Turkey: the Black Sea, Mediterranean and Aegean Regions. Although, wild edibles are collected and used for home consumption, particularly in rural areas, or are sold in local markets contributing to people's diets and representing an additional income for many households; these species have started to be offered by chain markets as niche products lately.
Market surveys were carried out in both rural and urban settings to determine the market potential for wild edibles. Overall 2334 questionnaires were administered to local wild herb collectors, sellers and consumers. Data generated from the surveys is being used to increase the knowledge base on wild edibles, create market opportunities for these species and build capacity at the local level for value adding practices. The project also aims to create an integrated knowledge base about agriculture, environment and public health and to make it available to the use of the relevant sectors for the purpose of contributing to the conservation of biodiversity and improvement of welfare in Turkey. In addition to these works, some wild edible species from three different biogeographic regions were collected and analyzed to demonstrate the nutritional value of some wild edibles in Turkey. Proximate, dietary fiber, minerals and vitamin C were assayed using standard methods and reference materials. The findings of this project indicate that most of the wild edible species can considerably contribute to requirements of dietary fiber, vitamin C and some minerals such as iron, potassium and phosphorus.

Urgenci Mednet – when food unites peoples beyond borders

Fatima Hocini, URGENCI

Abstract

Why a Mediterranean project ?
In the North, South and East and West shores of the Mediterranean:
• We are losing living soils, biodiversity, local seeds, healthy and diverse Mediterranean diets.
• We are facing drought and climate change, increased food insecurity and wars, dependencies, pollution and waste.
• The broken economic and food systems are feeding forced migration, social injustice and rural exodus.
Since 2004, the Urgenci network has mapped and developed as an international network of citizens, producers and consumers, who are the actors of an alternative economic approach called Local and Solidarity Partnerships for Agroecology between Producers and Consumers (LSPA). This is close to the Community Supported Agriculture (CSA) model that exists around the world.
LSPA is a tool for building solidarity between and linkages between urban and rural communities: localised solutions to the issues facing both peasants and consumers globally and in the Mediterranean Basin

The history of the Mediterranean network
URGENCI has been committed to strengthening its partnerships with initiatives around the Mediterranean and experience- and practice-sharing and training since the first MedCOP21 in Marseille in June 2015 with the support of the FAO. This has led to the creation of a Mediterranean network of LSPA.
Last November, during the URGENCI International Symposium in Thessaloniki ,the MedNet Network was strengthened by new members. It now includes more than 10 countries.

During that meeting, the Mednet members agreed on a Call to Action, a MedNet Mission and the 2030 Vision.
MEDNET mission statement: We are farmers, consumers, trainers, food activists, researchers, agronomists from around the Mediteranean Basin.
Together ,we engage in regenerative actions that heal and bring together soils, plants, animals, people, communities, urban and rural areas, by implementing and supporting local solidarity based-partnerships that foster agroecology at every level of the food system.
MEDNET initiative: Torba TAFAS is a CSA based in Algiers that works to Preserve the existence and sustainability of small farms in accordance with the principles of sustainable and peasant agriculture; it is socially equitable and ecologically aligned to allow consumers to buy quality local produce at a fair price, while being informed of the origin and production method.
With Urgenci MEDNET , Torba TAFAS aims to sustain CSA's through, community building between:
1. Consumers and farmers by organising participatory campaigns of peasant's work and local meals sharing experiences.
2. Farmers building their agroecological practices to share and disseminate across the territory and the MEDNET network
3. Support the peasant economy by managing ecotourism campaigns and eco-bed-and-breakfast construction
4. Educate consumers to take responsibility for their health and the need to eat healthy, nutritious Mediterranean diets

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Science and tradition: two keys to make origin of product credible

Egizio Valceschini, Economist, Director of Research at French National Institute for Agricultural Research (INRA), Paris

Abstract
The countries of the North of the Mediterranean, particularly France, have for a long time supported strategies to enable the valorization of "terroirs" and the origin of agricultural and food products. Reference to local tradition practices and recipes is a key to these strategies. The development of the production of these products and the extension of their markets beyond their region of origin have benefited, and even required, a significant commitment from the public authorities. To give consumers, traders and retailers credibility with the quality of products, the loyalty of labeling and the effectiveness of product traceability, they had to invest in two complementary areas:
- scientific research (agronomic and technological) on products, production methods and manufacturing techniques;
- the governance of systems of standardization of knowledge and control of the organization of quality.
The new objectives of sustainable development and adaptation to climate change call for more investment in these two areas, particularly to better understand local production conditions, through agroecology, and their evolution.

Geographical indications for sustainable food systems in the Mediterranean region

Florence Tartanac, Senior Officer, Food and Agriculture Organization of the United Nations, Rome

Abstract
Geographical indications (GIs) refer to products with specific characteristics, qualities or reputation resulting essentially from their geographical origin. This offers differentiation to products that can be attributed to unique local features, history or distinctive characteristics linked to natural and human factors, such as soil, climate, local know-how and traditions. GIs are recognized as Intellectual Property Rights (IPRs) and offer an interesting marketing tool for both origin-based differentiation and protection of the use of the name.
Following the FAO methodology of origin-linked virtuous circle, GIs can be used as a tool for sustainable and rural development and more sustainable food systems. In this view, ensuring economic viability is a key factor but empirical evidences of the benefits of GIs are sparse, especially in countries where GI procedures are recent. FAO together with European Bank for Reconstruction and Development (EBRD) published a study in 2018 that aimed at supporting such rationale by providing empirical evidence on the economic impacts that are generated through the GI process. The study focuses on the food sector, and reviews nine cases offering a variety of national contexts and local value chains. In the Mediterranean region two cases were chosen: saffron of Taliouine (Morocco) and Manchego cheese (Spain). This study is also an output of the Sustainable Food System Programme under the One Planet network (10YFP) through the Core initiative on 'Sustainability along all value chains: identifying and promoting local initiatives linking small-scale producers and consumers' which contributes accelerating the shift towards more sustainable food systems by promoting a transition from current standards and practices to futures that are more sustainable.

SESSION 13

RESEARCH AND INNOVATION AS DRIVING FORCES FOR THE SHIFT TOWARDS MORE SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN

Co-chaired by **Mouin Hamze**, Secretary General, CNRS, Lebanon; **Francesco Loreto,** Director, DiSBA, CNR, Italy; **Teodoro Miano**, Vice-President, CIHEAM

Concept note

The Mediterranean region is under increasing pressure as societies must respond to socio-economic needs, cope with climate change, and move towards a more sustainable development. Countries of the southern Mediterranean rim call for vigorous growth and business opportunities in order to lessen problems associated with high demographic increase, ultimately leading to high levels of youth unemployment rate, migrations, and political and economic instabilities. Countries of the northern Mediterranean rim show an almost stable population growth, while urbanization raises and agricultural land is progressively abandoned, especially in hilly and mountain areas. Despite these differences, north and south Mediterranean countries share common challenges and must cooperate when securing high levels of environmental protection and rational use of scarce natural resources. They are already connected by a web of common histories, traditions, typical crops and healthy diets. In this challenging context, research and innovation have already been identified as powerful tools for integrating and valorizing the Mediterranean region, most recently by the Ministerial Valletta Declaration for Strengthening Euro-Mediterranean Cooperation through Research and Innovation (Malta, 2017). Further, common areas of paramount interest for the Mediterranean can be identified to overcome challenges by the use of green technologies, therefore responding to future grand challenges for food systems sustainability. This session intends to overview main Mediterranean research and innovation cooperation programs, challenges, and suggested solutions. Focus will be on the rational and efficient use of water, the blue economy, the nexus between energy, food and health, and the valorization of local biodiversity. The session will further highlight the bioeconomy, focusing on new opportunities provided by agro and biotechnologies for the sustainable use of renewable biological resources in the Mediterranean.

Objective: the session will illustrate the main research and innovation initiatives and their perspectives for promoting more sustainable food systems in the Mediterranean countries.

Primary Resources Planetary Boundaries: A Holistic View at the Water-Energy-Food-Health Nexus for Eastern Mediterranean

Rabi H. Mohtar, Dean, Faculty of Agricultural and Food Sciences (FAFS), American University of Beirut

Abstract

This presentation highlights the unsustainable current business model and the need for a new business model based on valuing primary resources use and management. It touches on a few key elements to reduce the interdependency between water, energy, food resources in order to bridge the resource gap. The focus of the presentation is on three themes of interventions: 1) Sustainable Technologies; 2) Science – based policies, and 3). Responsible consumer and citizens' behavior that will regulate the excessive demand for primary resources. The presentation highlights the changes in the perception of global risks and the shift from a geopolitical risk into economic and resource-base risks. The challenges in the current business as usual scenarios will be highlighted including inequity of distribution, variability in distribution, and the non-sustainable consumption of the primary resources. The presentation highlights some successful examples from across the world that really highlight the necessity of using systems approach to managing these resources. Some moving forward pathways, including a robust supply chain and regional integration based on fair trade for people and environment, policies and incentives for reducing consumption, education, technologies as well as a value-based model using system approach of the nexus, and building synergies across stakeholder would be highlighted. The WEFRAH (Water, Energy, Food, Health Nexus Initiative) at the American University of Beirut will be highlighted.

New Era in Solving Water Scarcity for Agriculture-Food systems Using Green Technology: From Theory to Application in MENA Region

Ramia Albakain, University of Jordan, Amman

Abstract

The lack of water, the climate/green technology and increasing anthropogenic activity have severe impacts on agriculture- food security as well as public health in the Mediterranean and MENA regions, particularly in Jordan that suffers from severs water shrinkage. The emission of harmful substances as toxic heavy metals, organic compounds, solid waste and pharmaceutical residues are released to local municipal wastewater systems, where very low amount of this wastewater have special treatment to re-use again, which results in serious threats to water- agriculture-food sectors in Mediterranean and MENA regions.

This presentation highlights the unsustainable current technique for saving the natural resources and the urgent need for immediate sustainable management technique based on Green Chemistry that should build bridges between water-agriculture-food recourses. The focus of this presentation is on three main points; 1) Sustainable Green Technologies, 2) Enhance Awareness-behavior's Program of local citizens toward water-agriculture-food security, and 3) Strategies and policies for supporting Science.

This presentation highlights a new era of using new green technology for water-agriculture-food security and the appropriate strategies that overcome the challenges of moving forward from theory to implementation: 1) Institutional, regulatory, financial and technical facilities for Green/Climate technologies, 2) Transfer and joining forces to create synergies for appropriate green technology collaboration. 3) Encourage research and innovation in water scarcity vs. food security. 4) Upscaling of green technology deployment in the fields of environmental protection, natural resource efficiency and water-food security. 5) Private sector engagement.

Genetic Resources conservation for the enhancement of a sustainable agrobiodiversity in the South Mediterranean countries

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Abstract

South Mediterranean countries have been since a long time a reservoir of many agricultural crops. Because of its strategic position, Tunisia has been a crossroad of several civilizations. It is considered one of the richest countries for plant genetic resources and secondary center of diversification for many species including landraces and wild relatives. Fruit trees, cereals and vegetables are socio-economically important. These crops are source of outcomes for local communities. They constitute the major compound of the Tunisian diet and consequently contribute to the country's food security. Although Tunisian landraces are still prevailing in rural areas through traditional farming systems, the adoption of improved varieties at the expense of autochthonous populations has reduced the genetic diversity. Thus, it has contributed to genetic erosion resulting in significant loss of valuable genetic diversity. Aware about this threat, governmental authorities have developed strategies aiming to conserve agrobiodiversity. Tunisia was among the first signatories of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and the Nagoya Protocol. The National Genebank was created in 2007 as an organism working under a national network including all the genetic resources stakeholders. Both collecting missions and inventory were conducted in several regions and for many species aiming to collect cultivars and data revealing to traditional knowledge related to each species cited by farmers. The priority is given to threatened varieties. In addition, many research were investigated in order to well characterize genetic germplasm. Ex situ and on farm conservation strategies were undertaken for a sustainable management and use of local agrobiodiversity.

The Frontiers of Bioeconomy in the Mediterranean Area

Mauro Gamboni, CNR – Department of Biology, Agriculture and Food Sciences, Italy

Abstract

The bioeconomy is a new paradigm aims at a gradual transition of the society towards an economy based on the production and transformation of renewable biological resources. In this perspective, most of fibers, chemicals and energy will come from living organisms and their products, replacing fossil material with renewable alternatives. Increasing scientific knowledge in biology, biochemistry, microbiology, enzymology and the related technological advance are able to add value to the traditional processes by recovering materials normally destined to be discarded. Bioeconomy gathers the agricultural and agro-food sectors but also involve other non-food bioeconomic sectors using biological resources as raw materials. This has to be seen as positive integrating and favorably approaching the sustainable food systems if it never poses as a competitive alternative to food production and can lead to encourage the ability to save and recover resources in agro-food sector according to the principle of circularity and to contribute in providing ecosystems services. In this context, the opportunities offered by the bioeconomy to the Mediterranean countries are very high. Many different byproducts and residues including non-food biomass and organic waste coming from agricultural, forestry and marine resources, as well as biomass from local marginal lands are largely available and can be valorized both in the northern and southern Mediterranean Countries. However, despite these favorable conditions, the bioeconomy development in the southern Mediterranean area is lagging behind if compared with Mediterranean EU Member Countries, especially France, Spain and Italy and quite distant to the remaining EU Countries. This presentation intends to explore the potential of Mediterranean bioeconomy, in the framework of the sustainable food systems and stress its contributions to address the main global challenges. It will also give an overview on some current studies and applications and conclude with some considerations on the opportunities to share research and innovation cooperation programs in bioeconomy among the Mediterranean Countries both in the northern and southern rim.

The BLUEMED research and innovation Initiative in the Mediterranean area

Angelo Bonanno, CNR e BLUEMED CSA, Italy

Abstract

The BLUEMED Initiative is a research and innovation initiative that offers a shared strategic framework for working towards a healthy, productive and resilient Mediterranean Sea that is better known and valued. It aims to promote joint research and innovation actions and to foster integration of the marine and maritime research industries and academia to maximize the leverage effects of the research investments both commercially and with respect to public policy at regional, national and EU levels. The 'soul' of the BLUEMED initiative is a Strategic Research and Innovation Agenda (SRIA), which identifies key challenges that need to be addressed, and related actions and goals, according to three main pillars: enabling knowledge for the Mediterranean, sectorial enablers in the Mediterranean, and enabling technology and capacity creation for the Mediterranean.
Different aspects of the fisheries and aquaculture sectors are taken into account in the three main pillars of the SRIA, being the ecosystem-based management of Mediterranean aquaculture and fisheries one of the key challenges of the sectorial enablers. Among the seas of Europe, the Mediterranean has no match in terms of biodiversity and of links between human activities and environmental characteristics. It is changing fast in response to both natural and anthropogenic pressures. In particular, for fisheries, low abundance and high species diversity together with a numerous small-scale fleet makes fisheries management very challenging. At the same time, the Mediterranean's unique features provide major local opportunities for blue growth and jobs, ranging from fisheries to tourism. A global perspective, along with more vigorous transnational and international cooperation, is essential to implement effectively and efficiently tailored actions that are conducive to safe, secure and sustainable development for all.

COPING WITH FOOD LOSSES AND WASTE IN THE MEDITERRANEAN THROUGH MORE SUSTAINABLE FOOD SYSTEMS

Chaired by **Jamie Morrison**, *Director/Strategic Programme Leader, Food Systems Programme, FAO*

Concept note

Regardless of i) how food loss and waste (FLW) are defined, and ii) what their exact levels are, it is safe to say that addressing FLW constitute a significant opportunity to improve the sustainability of the food systems, nutrition and overall development. This is particularly true in the Mediterranean region where 80% of the available water is used for irrigation of crops. In the Near East & North Africa (NENA) countries the high losses occurring before food reaches retail is of great concern as it contributes to reduced food availability, aggravated water scarcity, adverse environmental impacts and increased food imports, in an already highly import-dependent region. The latter was highlighted in the 2015 FAO Regional Strategic Framework for reducing FLW. It was recommended that the implementation of this framework be driven by cooperation across all ac¬tors in the food supply chain including government agencies, NGOs, civil society institutions and local communities.

Acknowledging that solutions to optimization of the food production-supply chain in the region will require a combination of technological and managerial interactions within the water-food-energy nexus, this session will focus on discussing barriers that are hindering breakthrough changes. The panelists will refer to the need to focus interventions on FLW in the context of food security and nutrition using postharvest systems and food recovery examples from NENA, but also from other countries in the Mediterranean. The discussion of such interventions will also be framed in the context of environmental sustainability. Using the food recovery hierarchy as a model for intervention this session will debate feasible holistic programmes that can be implemented with a food system approach. It will also serve to discuss whether promoting a circular bioeconomy along the supply chains, including the use of non-food parts from agricultural production, can help boost reduction and efficient management of FLW in the region.

Objective: To discuss actions that can result in "quick wins" and/or long-term strategies for reducing food losses and waste, easing pressure on water scarcity and contributing to improving the sustainability of food systems, from production to consumption, in the Mediterranean region.

Diet change, food wastage prevention and reduction, farming system diversification toward a sustainable Mediterranean region

Lorenzo Ciccarese and Giulio Vulcano, Nature Conservation Dpt., Division for Species and Habitat Conservation and Sustainable Management of Forest and Agricultural Systems, ISPRA, Italy

Abstract

Since the beginning of the Green Revolution, global agricultural productivity has increased significantly, due to the growing use of synthetic fertilizers and pesticides, irrigation water, improved seeds and plant technologies, agricultural machinery.

These increasing inputs have also had harmful environmental effects (including GHG emissions, nitrogen run-off, eutrophication, soil compaction and degradation, land-use change, reduction of water reserves and drainage capacity and biodiversity loss)) and social impacts. Ther'is large and mounting scientific evidence of that in all Mediterranean countries. In this regard, data and facts will be provided during the presentation.

Agroecological small-scale systems that aim to maintain functional biodiversity and ecosystem services have been identified to counteract the negative externalities associated with intensified agricultural systems. These systems are epitomised in the expression diversified farming systems (DFS), of which organic farming is the most popular DFS, especially in developed countries. In this regard, Italian organic farming is a paradigmatic case study.

Yields in DFS are usually reported lower than in conventional and industrilised agriculture. This "yield gap" has raised concerns about the potential of organic farming and other DFS as sustainable solutions to meet food security, which remains challenged by climate change, natural resources constrains, demographic dynamics (including migration) and trends, and national capacities.

Providing nutritious and sustainable food for all, as foreseen in SDG 2, requires transformative changes in food production, distribution, storage, processing and consumption patterns. Promoting sustainable and healthy diets, in particular towards lower consumption of animal products (the livestock sector, while providing only 18% of calories and 40% of proteins to the world food supply, represents about half of GHG from agriculture and nearly 80% of agricultural land use -- a third of all farmland to produce fodder crops), structurally preventing food wastage in developing and developed countries, adopting sustainable agricultural practices and ensuring reproductive health (SDGs 3.7 and 5.6) (urban food policies aimed at integrating food issues and waste are key), and adopting sustainable agricultural practices would contribute towards meeting the nutritional needs of the 9–10 billion people projected to be on the planet in 2050. In doing so, synergies could be realized between improving health and nutrition, while reducing biodiversity loss, advancing habitat restoration and preventing land degradation and water scarcity.

LESSONS LEARNED FROM DIFFERENT SUSTAINABLE DIET CASE STUDIES: JAPANESE DIET, NEW NORDIC DIET AND MEDITERRANEAN DIET

Chaired by: **Jacques Delarue**, Member of Board of FENS, Chairman of Mediterranean Networking, France

Concept note

The Mediterranean has proven since years 60s its health benefits. Currently, there is a tendency, especially in young people, to abandon the traditional diet towards a more westernized one. In addition, there is a tendency, too, to a loss of biodiversity in the Mediterranean surrounding countries. As people are more aware of the importance of sustainability, one way to increase the adhesion to traditional Mediterranean diet, i.e. to revitalize it by developing sustainable food systems around Mediterranean sea. In order to reach this objective it is very useful to learn from other countries with specific diets what means have been deployed and how they have been promoted to associate health effects to sustainability. The two diets to which Mediterranean diet will be compared for policies associating valorization of health benefits in association to sustainability are : Japanese diet and Nordic diet.

Objective: The session, under the auspices of the Federation of European Nutrition Societies (FENS), in collaboration with Nordic Council, SINU, SENC and SFN will present and discuss how it is possible by intervention policies to influence the dietary pattern of people to better associate health benefits to sustainability.

Features and challenges of the Japanese diet from the viewpoint of the national Shokuiku (food and nutrition education) promotion.

Takemi Y. Nutrition Ecology, Department of Nutrition Sciences, Kagawa Nutrition University. Sakado, Saitama, Japan

Abstract

Japan achieved the longest life expectancy in the world. One of the reasons for longevity would be the Japanese Dietary pattern. A systematic review of epidemiological studies showed that Japanese diet frequently uses soybean and its products, seafood, and vegetables followed by rice and miso soup (Suzuki, 2018). It should be noted that these findings are similar to the Japanese dietary guidelines' recommendations. The dietary guidelines, which were developed by three ministries; the Ministry of Health, Labor, and Welfare: MHLW, the Ministry of Agriculture, Fishery, and Forestry: MAFF, and the Ministry of Education, Culture, Sports, Science and Technology: MEXT, recommend eating three types of dishes, which are grain dishes (called Shushoku in Japanese), protein dishes such as fish, meat, egg, and soybean (Shusai), and vegetable dishes (Fukusai), as a healthy diet. Having meals with the three types of dishes twice a day is one of the behavioral targets for the Japan national health promotion plan named "Health Japan 21 (2nd term)" by MHLW, by 2022.

The Japanese dietary guidelines also have recommendations related to a sustainable diet. One is to take advantage of the Japanese dietary culture and local food products and inherit the taste of the local dishes. The other recommendation is to value food resources and to establish a diet, which lowers wastes and leftovers. Thus, in the 3rd National Shokuiku (nutrition and food education) promotion plan based on the Basic Act on Dietary Education, we emphasized the importance of food system, food waste reduction, and food culture. Some food retailers and local governments have begun to follow the action to make our eating habits more sustainable.

The rise of kale: how progressive policy enabled healthy and sustainable consumer choices

Mads Frederik Fischer-Møller, Nordic Council of Ministers Copenhagen, Denmark

Abstract

The transition required to get towards more sustainable food systems can seem huge. And considering the amount of interest biased against change, a transition can seem almost impossible. If you are to do policy in this field it can be relevant to follow Nordic examples and find entry points where you can start a success that is both environmentally, socially and economically sustainable and as such can be of inspiration to civil society, businesses and policymakers alike. The Nordic countries have in particular had success in implementing polies targeting food consumption. Through changing food consumption patterns we now also see substantial changes in Nordic farming practices i.e. a huge increase in organic farming. In the presentation some trends will be highlighted from the Nordic region: the increase in consumption of organic foods; positive attitude shift towards vegetables (vegetarianism/flexitarianism) and wholegrain consumption.

• The organic retail market has grown +10 %/year for the past ten years; in 2017 increasing to a market share of 13,3 % of the total market for food in Denmark. Part of this success is continued political backing and a common messaging from all major public and private stakeholders regarding the benefits of organic foods.

• The average intake of whole grains has increased from 36 g per person per day in 2007 to 63 g per person per day in 2014. In this period we have seen an increase in product innovation leading to a growth in whole grain products on the market of +400 %. Instrumental for this transition has been a Public-private partnership with the ambition to increase availability of whole grain products and

enhance knowledge of the positive effects of whole grain.
• Rise of kale: 900 % increase in ten years (after steady +70 years decline). Other heavy vegetables follow similar trend. No price structures and/or promotion campaings can explain this. Is this a trend? Or something that will continue? What role has policy played in making vegetables trendy? And what can we do in the future to increase veg. consumption?
In parallel with these concrete policies the Nordic governments has stimulated the rise of a new food culture driven partly by the New Nordic Cuisine gastronomic movement which focuses on – among other things – increased use of sustainably sourced foods and use of heritage foods such as whole grains. This development is also important to take into consideration when evaluating the encouraging results, because you cannot isolate changes in consumer behavior to any one policy intervention. Most likely the public-private partnerships and the rise of a new food culture has worked in synergy, accelerating the change in consumer behavior.
One lessons learned from these examples is that government intervention to convene stakeholders and secure agreement on the evidence has been a crucial starting point for creating public-private partnerships changing the dynamics in the market place. Another lesson is that working with specific market interventions that align with a broader vision for food culture change is increasing the likelihood of success.

Mediterranean diet and sustainability in current dietary patterns in Spain

Carmen Pérez-Rodrigo, University of the Basque Country (UPV/EHU), Bilbao, Spain

Abstract

Accumulated evidence shows the benefits of unique ingredients of the Mediterranean Diet, especially extra virgin olive oil, as well as the Mediterranean dietary pattern. The PREDIMED study has provided quality evidence that has influenced Dietary Guidelines in different countries, emphasizing the quality of dietary fat rather than total fat content. More recently, evidence shows a favorable impact in terms of sustainability of this food and cultural pattern (based on local food systems -local production, local consumption-, conviviality, frugality and seasonality).
Changes in food consumption habits in recent decades in Spain have decreased adherence to the Mediterranean Diet, although this trend seems to be stabilized. In the ANIBES cross-sectional study, a food pattern labeled as "Mediterranean Dietary pattern" was identified in children and adolescents (higher consumption of vegetables, fruits, olive oil, fish, yogurt and water and lower consumption of sugar sweetened beverages). Greater adherence to this pattern clustered with higher levels of physical activity, less sedentary lifestyle and greater sleep time in a lifestyle pattern that grouped 23% of the sample. Among adults, we also identified a pattern labeled "Mediterranean Diet" (higher consumption of water, fruit, yogurt, fish, vegetables, cheese, olive oil; lower consumption of meats and sugary drinks). Greater adherence to this pattern was observed in people in people aged 50-64 years old, in women and people with a higher educational level.
Spain is one of the countries of the European Union with the highest percentage of urban population, while rural areas (80% of the territory) have been depopulated. Spain has not yet achieved any of the 17 Sustainable Development Goals (SDGs), but is moving forward to reach a good number of them. Among the SDGs facing difficulties to reach the targets are SDG 9 (industry, innovation and infrastructure), SDG12 (responsible production and consumption), SDG 13 (climate action) and SDG 14 (underwater life). Several investigations, such as the Live Well project, show that in order to reduce the environmental impact of the Spanish average diet, it would be desirable a reduction in consumption of meats, dairy products, sugars and sweets and fruits, while increasing the consumption of vegetables, cereals and nuts. There is a growing interest of consumers on how food is grown and produced, so that searching for healthier and more sustainable foods have been identified as important drivers for food purchases. However, several sources show that compared with other food patterns, the Mediterranean Diet is more expensive in terms of economic cost.
In light of the available evidence, policies and strategies that favor greater adherence to the Mediterranean Diet, taking advantage of cultural synergies, awareness and opportunities of the social moment and adopting measures to ease access to the Mediterranean Diet would help to avoid non-communicable diseases, improve the quality of life and achieve the SDGs in Spain. The Food-based Dietary Guidelines of the Spanish Society of Community Nutrition can be a good instrument to guide such policies.

Mediterranean Diet: from health to sustainability

Laura Rossi, CREA Centre of Research on Food and Nutrition, Rome, Italy

Abstract

It is universally recognised that healthy diets are those having an appropriate caloric intake and consisting of a diversity of plant-based foods, low amounts of animal source foods, unsaturated rather than saturated fats, and small amounts of refined grains, highly processed foods, and added sugars. In nutritional terms, these concepts represent the definition of Mediterranean Diet. Even though Mediterranean diet is not only the count of calories and the sum of nutrients, Mediterranean diet is a set of principles that has gained fame and honour, being the model that combines prevention of non-communicable diseases, longevity and health with consumers' acceptability and sustainability of the productive systems.
Current food systems need to be reshaped to provide quality products able to sustain optimal health. Coherent action and innovative food system solutions are needed to ensure access to sustainable, balanced and healthy diets for all. The quality and sustainability of food systems are central in delivering healthy diets to populations and, through them, their social, economic and environmental sustainability. A food system approach – from production to processing, storage, transportation, marketing, retailing and consumption – is thus important to promote healthy, sustainable diets and improve nutrition as isolated interventions have a limited impact. Nutritional recommendations should be developed taking into account actions for sustainable food systems that promote healthy diets combined with national policies and investments to integrate nutrition objectives into agricultural policies and food production.
Mediterranean diets represents promotion of specific food practices and choices that imply strategy for addressing sustainability, combining nutrition and environment dimensions. Plant-based diet could be seen in term of seasonal and local foods, reduction of food waste. Animal source foods component could be also considered in term of consumption of fish from sustainable stocks and reduction of red meat and avoidance of processed meat. Reduction of consumption of highly-processed foods and sugar-sweetened beverages has also a sustainability meaning.

Investigating the place of meat in more sustainable diets: insights from the two Mediterranean shores.

Nicole Darmon, INRA, UMR 1110 MOISA, Campus Inra-SupAgro de la Gaillarde, Montpellier, France.

Abstract

Sustainable diets are defined as nutritionally adequate, safe and healthy diets, with low environmental impact, culturally acceptable, economically viable and affordable.
Compatibility between the different sustainability dimensions is not straightforward. For instance, diets with low carbon impact are not always the most nutritious ones, because energy dense and nutrient poor food products based on unhealthy ingredients (e.g., unrefined cereals, sugar, vegetable oil, salt) often have a low carbon impact. Given the strong positive correlation between total ingested quantities and the environmental impact of diets, the first lever to reduce this impact is to waste less, and eat just what is needed. Changing dietary patterns is another lever, with most studies focusing on scenarios of

meat consumption reduction, especially bovine meat because of its dramatically high carbon impact compared to other food items. However, diets based on a priori scenarios may substantially deviate from social norms. Other approaches - such as identifying the most sustainable diets among existing ones (i.e. diets self-selected by individuals) or minimizing the dietary shifts needed to improve sustainability - can better help taking into account the cultural acceptability dimension of diet sustainability. These approaches were used to design more sustainable diets in five European countries and in one North-African country (Tunisia). An important increase in fruit and vegetables consumption was strictly needed in all investigated countries. Regarding total share of animal products, the results show that it should be reduced in the five European countries but not in Tunisia. In this country, moving towards healthy diets with low environmental impact (water footprint, biodiversity, land use) rather implies rebalancing the sources of animal products: less meat in favour of dairy, eggs and fish products.
Therefore, public health messages to prevent obesity and the long-standing advice of favouring food diversity are still valid to in the context of sustainable diets promotion in both Mediterranean shores.

SUSTAINABLE DIETS: LINKING NUTRITION AND FOOD SYSTEMS

Co-chairs: **Barbara Burlingame**, Chair, Sustainable Diets Task Force of the International Union of Nutritional Sciences (IUNS); **Sandro Dernini**, President, Forum on Mediterranean Food Cultures

Concept note

Sustainable diets is a concept that explicitly links nutrition and food systems with the goal of sustainably eliminating malnutrition in all its forms while simultaneously ensuring environmental sustainability and ecosystem health. In this session we take a transdisciplinary approach to consider actions in different sectors that can position sustainable diets as central to the future of the planet.

In January 2019, the book "Sustainable Diets Linking Nutrition and Food Systems" was published by CABI, UK, as an affiliated project of the One Planet SFS Programme. In its 29 chapters, nearly 100 international experts inform readers with arguments, challenges, perspectives, policies, actions and solutions on global topics that must be properly understood in order to be effectively addressed. The transition to sustainable diets will be explored within the context of sustainable food systems and the right to food, overcoming the divide between disciplines and linking food security and nutrition to sustainability.
The session some of the chapter authors and editors will address the questions:
• How do we engage multiple sectors in dialogue, research and initiatives to tackle the pressing problems that have taken us to the edge, and beyond, of the planet's limits to growth?
• How do we create a research and policy-setting environment to explore transdisciplinary solutions that may include the necessity for short term hardship in order to not put in peril future generations?
• And is there an appetite for robust multi-stakeholder policies and best practices for sustainable diets linking sustainable consumption and production?

Objective of the session: To make progress in better understanding transdisciplinary linkages between sustainable diets and sustainable food systems.

Note: Through a series of initiatives, a consensus definition for sustainable diets was reached during a special session of the first International Scientific Symposium on Sustainable Diets and Biodiversity (FAO, 2010): "Sustainable Diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources."
It is further noted that a sustainable diet, by definition, is a healthy diet; whereas a so-called "healthy" diet, by conventional definition, is not necessarily sustainable.

Sustainable Food Systems and Agricultural Heritage

Parviz Koohafkan, President, World Agricultural Heritage Foundation

Abstract

In spite of the increasing acknowledgement of the value of traditional diets, major dietary shifts are observed in different parts of the world, representing a breakdown in the traditional food system. This trend has coincided with escalating rates of obesity and associated chronic diseases, further exacerbated by the coexistence of micronutrient deficiencies, owing to the lack of dietary diversity in modern diets. Dietary shifts that have occurred in urban areas are currently extending to rural communities as well, where people have abandoned traditional food systems.

The FAO Globally Important Agricultural Heritage Systems (GIAHS) programme, which was launched by the author on behalf of FAO in 2002, has already laid the foundation for pursuing the issues of recognition of traditional food systems as Food Heritage and several GIAHS around the world represent also their outstanding Food Heritage Systems (e.g. GIAHS in Peru, Chile, China, Iran, japan, etc.). The traditional Mediterranean Diets within the GIAHS Oasis (e.g. Algeria and Tunisia) are other outstanding examples of such case.

The overall goal of GIAHS is to identify and safeguard outstanding and diversified traditional agricultural heritage systems rich in biodiversity, indigenous knowledge and cultural values and their associated landscapes thereby enhancing the benefits that are derived through their conservation and sustainable use. Celebrating traditional food systems as food heritage gives utmost recognition and support to the custodians of the traditional food systems – the small holders, family farmers and indigenous communities.

In this presentation, it is suggested to launch a "Food Heritage Initiative" based on experience of GIAHS capitalizing on its achievements, networks and potentials along with a feasibility study to be implemented in selected Agricultural Heritage Sites reviewing the GIAHS concept extended to traditional food, nutrition, culinary and medicinal systems with the goal of recognizing these systems as Food Heritage and supporting income generation activities by labelling, agritourism, marketing and food heritage festivals and celebrations.

The Med Diet 4.0 Framework: a Multidimensional Driver for Revitalizing the Mediterranean Diet as a Sustainable Model - lessons learned about the assessment of food systems.

Massimo Iannetta and Milena Stefanova, ENEA, Italy

Abstract

The complexity of interdependent challenges, within the radical transformation of the contemporary Mediterranean and global scenario, requires new forms of transdisciplinary and intercultural dialogues, strategies and research, at different levels, for the revitalization of the Mediterranean Diet (MD). Within such complexity, the Med Diet 4.0 framework provides a synthesis to better understand and enhance the MD as a model in the context of Sustainable Mediterranean food systems, reconnecting diets, food consumption, food production, food security and sustainability in the Mediterranean region. It provides useful insights to tackle the challenging policy issue of balancing human and planet health, within the globally interconnected food system.

Our presentation aims to evaluate different approaches used in the sustainability assessments of food systems. In particular, we will present our experience with assessment approaches based on Life Cycle Assessment (LCA). The broad recognition of Life Cycle Assessment as a comprehensive methodology for environmental assessment of products has paved the way toward extending its underlying analytical framework, Life Cycle Thinking (LCT) into a methodological framework for sustainability analysis of economic systems. We will discuss the application of LCA to the recent EU initiative for establishing a single EU market for green products, which constitutes a major attempt of creating a harmonised and comprehensive methodology, the Product Environmental Footprint (PED) that defines a universal concept of environmental sustainability for all products present on the EU market. The PEF concept will be illustrated in the context of the PEFMED project, whose aim is to test the PEF in the context of typically products from the Mediterranean Region.

The lessons learnt from this project leaded us to question the comprehensiveness of LCT in supporting transitions to sustainable food systems under diverse and sometimes contrasting perspectives of how sustainability can be achieved. In particular, we will show that the way LCT enables food system characterisation bears consistency tensions with agroecological food systems. This makes it inappropriate for representing food systems models that value not only the role of markets, but also the role of biodiversity to food production as well as the role of social and cultural relationships embedding food production and consumption activities. On the other hand, the MD as a model for the food systems in the Mediterranean Region incorporates values that see the food related activities as integral part of the Mediterranean landscape, its rich biodiversity resources, and importantly, the cultural relationships that have shaped the traditional MDs. These territorial resources contribute to the nutritional, environmental and social quality of food products from the Mediterranean Region. Therefore, in order to be able to understand which innovation-based approaches can best contribute to the transformation of the food systems in the Med regions toward models based on the MD, we propose a dynamic territorial approach based on ex-post scientific evidence for defining the sustainability concept for the Mediterranean Food Systems, rather than on a priori consensus on a static universal definition of sustainability pursued through LCT-based methods.

Crossing Sociological, Ecological, Economical and Nutritional Perspectives on Agrifood Systems Transitions: Towards a Transdisciplinary and Multistakeholder Approach

Marie Josèphe Amiot-Carlin, MOISA, Univ Montpellier, CIRAD, CIHEAM-IAAM, INRA, Montpellier SupAgro, Montpellier, France

Abstract

In a context of agrifood system transition, there is a need to reconnect agriculture, environment, food, and health. When analyzing the literature, approaches to food systems sustainability tend to be framed within a specific discipline or link two disciplines, such as: (i) health and environment, especially with the concept of "One Health" that emerged in the last decade, (ii) agriculture and environment in order to reduce the impact of pesticides and favour ecological practices, (iii) food and environment to redesign diets limiting or reducing greenhouse gases, and ecosystem ressources. Rare are studies integrating Biology and Social Science Knowledge.

The reflexive and interdisciplinary analysis of different projects and literature showed that the reconnection of agriculture, food, environment, and health within agrifood systems transitions would be better tackled through territorial approaches, and by combining qualitative and quantitative approaches. Qualitative methods enable us to understand ecological and social transition mechanisms within the territorial agrifood system, while quantitative methods and modeling allow scenarios building for future transitions. The multistakeholder approach is also necessary in a transformative perspective and realistic solutions to sustain agrifood system. To gain in efficacy, a territorial approach would allows actors and researchers to build a shared understanding of the transition processes within their shared territorial agrifood system, despite possibly different and diverging views.

Naorai - Myazaki Food and Agricultural Heritage System of Japan

Tomonori Tasaki, Takachiho Town Office, Miyazaki, Japan; Nahoko Shimada, the Research Institute for Humanity and Nature

Abstract

Takachihogo-Shiibayama site, Miyazaki, Japan, composed of 3 towns and 2 villages, was designated as one of Globally Important Agricultural Heritage Systems (GIAHS) by FAO in December 2015. GIAHS Designation means that agricultural system of the site has been recognized globally as a valuable system that should be passed down from generation to generation. While World Heritage Sites designation by UNESCO covers tangible heritages sites such as archaeological area, and some natural sites and Intangible Heritage as Culture, dance, Food Systems etc. etc., the GIAHS designation by FAO also considers both tangible and intangible agricultural system but as dynamic systems to evolve. "Agricultural heritage system" refer encompass five criteria. Food and livelihood security, Biodiversity and genetic resources for food and agriculture of global significance, indigenous knowledge and practices, cultural aspects related to agri-Culture and landscapes diversity and aesthetique beauty. So it can refer to our life itself. Therefore, designation of GIAHS can mean that our lifestyle itself has been recognized globally.

In the tough environment where flat land is extremely scarse (91.9% are steep land forest), people have developed a sophisticated composite system of agriculture and forestry adapted to the mountainous environment that harness the bounty of landscape diversity. One example of this agricultural heritage system is the ancient irrigation channels with a length of about 500km. Thanks to those irrigation channels spectacular rice terraces could be cultivated over 100 years ago, and have been maintained by local people and functional until now. Collaborative work is always essential to build and maintain such system in mountainous are. After finishing each collaborative work, the local people always hold NAORAI where they get together and eat, drink and talk.

NAORAI is also and spiritual event and place where local people show their appreciation to gods who give blessing to ancestors who created this agricultural heritage system and to traditional agriculture and food system. NAORAI is not only the daily activity for us, but also, we believe is a must for sustainable agricultural system in our village.

In our presentation I would like to introduce GIAHS designated agricultural system of Takachihogo-Shiibayama including irrigation, landscape, culture, people, food, and how the agricultural system has become sustainable with NAORAI.

The Transdisciplinary Imperative: Pushing policy Instruments for Sustainable Diets

Barbara Burlingame, Chair, Sustainable Diets Task Force of IUNS

Abstract

In the global policy-setting arena, there are hundreds of international instruments in the form of guidelines, goals, targets, treaties, codes of conduct, declarations, action plans and recommendations covering a myriad of subjects. Some are binding; many are not. For nutrition, diets, and food systems, there are several key international instruments of relevance to sustainable diets. These can be viewed variously as building blocks for an international instrument for sustainable diets, as in the case of the Universal Declaration of Human Rights, The Code of Conduct for Responsible Fisheries, and the Right to Food. Others can be viewed as a model or template, as in the case of International Code of Marketing of Breast-Milk Substitutes. Still others can be mapped to the elements of sustainable diets, as is shown for Sustainable Development Goal 2. This paper reviews the process to date to establish a rationale along with a transdisciplinary set of guidelines for sustainable diets. Regardless of the mechanism, the urgency for action associated with the elements of the definition or concept of sustainable diets cannot be overstated, as the future of the planet is at stake.

THE MEDITERRANEAN DIET AS A LEVER FOR BRIDGING CONSUMPTION AND PRODUCTION IN A SUSTAINABLE AND HEALTHY WAY IN THE MEDITERRANEAN REGION

Co-Chaired by **Roberto Capone**, Principal Administrator, CIHEAM-Bari; **Elliot Berry**, Hebrew University; **Sandro Dernini**, President, Forum on Mediterranean Food Cultures

Concept note

In this session, we will discuss the evolution of the Mediterranean diet, moving from the 1950's model of a healthy diet, which reduced morbidity and mortality, to a model of a sustainable diet, linking sustainable consumption and production and lessening the overall impact of the anthropocene planetary unsustainability on the well-being of present and future generations in the Mediterranean region.

Mediterranean Dietary patterns have developed over the past 5000 or more years spreading from the Fertile Crescent and influenced by the conquests and cultures of many different civilizations. As a result, the Mediterranean Diet has been in continuous evolution, related closely to the particular historical and environmental mosaic that is the Mediterranean region.

In effect, there is not one single Mediterranean diet, but rather a number of variations on a basic theme adapted to individual country's cultures. Thus, the diet is more than just a diet; it represents a lifestyle, a social cultural expression of the different Mediterranean food cultures. However, current data suggest that adherence to the Mediterranean diet is decreasing because of multifactorial influences – life styles changes, food globalization, economic and socio-cultural factors.

The context and the environment in which we consume and produce are key components of the Mediterranean diet, as well as a physically active life, frugality and sense of the value of the food. The Mediterranean diet is mainly a way of life that incorporates knowledge, tastes, processing, food, crops and social spaces related to the territories. A culture that includes the issue of well-being as well as of sustainability. Let's not forget that the Greek word ĐĐĐĐĐ (diet) means balance, lifestyle

There is an urgent need to the change the current perception of the Mediterranean diet into a sustainable diet that is by definition "healthy", while a healthy diet is not necessarily sustainable. Many dietary patterns can be healthy but they can vary substantially in terms of their resource costs. There are many questions about the sustainability of modern diets. Simplification of diets, low in variety but high in energy, contribute to the escalating problems of malnutrition, including micronutrient deficiencies, obesity and chronic diseases, particularly among poor segments of the populations in both Northern and Southern Mediterranean countries. Trends are alarming, obesity and diet-related chronic diseases are increasing. The degradation of ecosystems and the negative impact in relation to climate change, poverty and health are making a compelling case for re-examining food systems and diets. There is growing scientific evidence on the environmental impacts of diets, linking directly public health nutrition, food security and sustainability. From such a perspective, acknowledgment of the Mediterranean as a sustainable diet model can play a key role in improving the nutritional well-being of Mediterranean populations, while ensuring the sustainability for the well-being of present and future generations.

Objective: To recieve guidance on how to proceed successfully towards the revitalization of the Mediterranean diet by linking sustainable consumption and production in the Mediterranean Region in the context of the improvement of the sustainability of Mediterranean food systems

FOSTERING MULTISTAKEHOLDER ENGAGEMENT AND PARTNERSHIPS TOWARDS A COMMON UNDERSTANDING OF SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN REGION.

Co-Chaired by **Jamie Morrison**, Director/Strategic Programme Leader, Food Systems Programme, FAO; **Sandro Dernini**, Conference Coordinator, CIHEAM

Concept note

The session will foster inputs from all conference sessions and among participants towards a common understanding of sustainable food systems (SFS) in the context of the Mediterranean region, by connecting sustainable food consumption and production (SCP) .

It will contribute to the co-development of a joint project proposal for a Mediterranean Multistakeholder SFS Initiative , within the United Nations One Planet Network, connecting sustainable food consumption and production (SCP), for coping through an holistic systemic approach the complexity of the multiple and interdependent challenges facing the region.

By linking food security, nutrition and sustainability, it will contribute to identify and advance innovative solutions to support the transformation towards more sustainable Mediterranean food systems.

The shift towards more sustainable food systems in the Mediterranean region, by building new synergies and strengthening multistakeholder cooperation among actors, from production to consumption, is expected to contribute to achieving several SDGs of the 2030 Agenda. Moreover, it will also contribute to monitoring overall progress towards SDGs in region.

Objective: To recieve guidance on how to proceed successfully for engaging interested parties in the co-development of a Multi-stakeholder Sustainable Food Systems Initiative for the Mediterranean region, to accelerate the shift towards more Sustainable Food Systems.

The One Planet (10YFP) Sustainable Food Systems (SFS) Programme as a multi-stakeholder platform for a systemic approach

Patrick Mink, Coordination Desk, One Planet Sustainable Food Systems Programme, Federal Office for Agriculture, Switzerland

Abstract

Food production and consumption has a failing performance in terms of food security, nutrition, health, but also equality, environmental protection, and climate change mitigation, posing a serious sustainability challenge as the planet's population grows while consuming beyond planetary boundaries, compromising future generation's wellbeing. Responses to the complex problem posed by securing humanity's food are more likely to succeed if built on two pillars, as championed by the 10YFP Sustainable Food Systems (SFS) Programme. The first pillar refers to the need to adopt a food systems approach, which enables identifying and addressing more holistic solutions. The second pillar proposes that multi-stakeholder, inclusive approaches are more likely to succeed, especially if they fulfill conditions for Collective Action, if they overcome polarization by embracing the inherent conflict in a locked-in system, and if they adopt a mindset that focuses on innovation. The SFS Programme has been built on both pillars, adopting five focus themes and organizing its work across four areas. Through its governance structure, the Programme has launched a series of core initiatives that are participated by coalitions of organizations from diverse sectors, and they were developed building on pre-existing projects, expertise and resources in order to leverage synergies and avoid effort duplication. They address key problems related to sustainable food systems and link several elements from production to consumption. Core Initiatives are inclusive, enabling faster learning through constant communication and overall coordination, becoming mutually reinforcing activities to accelerate the shift to sustainable food systems, in support of the implementation of the Agenda 2030.

The shift towards Sustainable Consumption and Production and Circular Economy at the Union for the Mediterranean

Alessandra Sensi, Union for the Mediterranean

Abstract

The UfM Ministerial Declaration on Environment and Climate Change promoted Sustainable Consumption and Production (SCP) as main axis of joint work within the Mediterranean region already in 2014. At the time, "Ministers acknowledged that shifting towards sustainable consumption and production patterns is essential to reduce pollution and waste, as well as to increase resource and energy efficiency and hence the prevention of climate change impacts. This transition to a green and low-emissions economy will provide real opportunities for preserving natural resources, job creation, improvement of the quality of life for all towards a sustainable future". The call for promotion of SCP patterns by the 43 UfM member countries was further reinforced in the UfM Ministerial declaration on Blue Economy in 2015.

Since then – through a solid partnership within a wide variety of multiple stakeholders, actors, tools and interests - these calls for change have translated in many different actions and instruments, which the UfMS has systematically linked, coordinated and streamlined in order to maximize results at the benefit of the entire region. SCP activities in Med range from regional and national action plans on SCP to more dedicated initiatives and projects, such as the EU funded SwitchMed Programme, the Interreg Med Green Growth Community for the Northern Med and Western Balkans countries as well as PRIMA, WestMed and BLUEMED to mention some. Most of the actions address food, fisheries and agriculture as central priority areas, associating to the transition towards more sustainable food systems, such as the Mediterranean Diet, a range of economic and employment opportunities as well as

food and nutrition security and healthier lifestyles.
According to SDG 12, SCP is about "doing more and better with less", namely 'net welfare gains from economic activities can increase by reducing resource use, degradation and pollution along the whole life cycle, while increasing quality of life. There also needs to be significant focus on operating on supply chains, involving everyone from producer to final consumer'. Within a wider effort to involve the widest range of stakeholders, from the private sector to civil society, Mediterranean efforts have focused so far more on production than on the consumption side. The latter is expected to be targeted within a wider initiative to promote the shift towards circular economy, which the UfM is currently promoting and coordinating to set the path towards a common post-2020 agenda on environment and climate change.

Integration of Circolar economy, Bioeconomy and Blue Growth for new production and consumption models in the framework of Sustainable Food Systems

Massimo Iannetta, ENEA, on behalf of the National Technological Cluster BIG Italian Blue Growth, Italy

Abstract
The concepts of circular economy, bioeconomy and blue growth have been introduced in response to concerns about the long-term viability of the prevailing resource-intensive economic model. Addressing circularity aspects of bio-based products and the sustainable use of renewable natural resources, driven by an innovation agenda and by environmental concerns and resource scarcity, aim to contribute to strategic and operational policy objectives of the United Nations 2030 Agenda for Sustainable Development, for living well within the ecological limits of the planet. Possible synergies, tensions, gaps and trade-offs between the bio-blue growth and circular economies' objectives and actions are explored tackling challenges at the system level. Major cross-cutting aspects, including the food system, renewable energy, waste treatment, chemicals and bioplastics are illustrated, identifying the most pertinent issues and opportunities from a systemic perspective. Circular Economy Action Plan, Bioeconomy Strategy and Blue Growth Actions implementation have concepts in common, such as the chain approach, sustainability, biorefining and the cascading use of biomass. All of these policy agendas converge with respect to economic and environmental concerns, research and innovation, and societal transition towards sustainability. The institutional framework are the European and Italian Circular Economy Stakeholders Platform (ECESP and ICESP), the European and Italian Strategy on Bioeconomy and the Italian National Technological Cluster on Blue Growth, as a hub of connection between the world of research, industry and government, and of the Bluemed Initiative for promoting the blue economy in the Mediterranean Basin.
The increasing global demand for food, feed, biomaterials and bioenergy could lead to demand/supply conflicts and shifts in the land availability for food, biomaterial or bioenergy production. A sustainable and circular bioeconomy would keep resources at their highest value for as long as possible through cascading biomass use and recycling, while ensuring that natural capital is preserved. Consumers can also play a role in creating a more sustainable bioeconomy by changing consumption patterns, preventing food waste and separating biowaste from other waste streams. The supporting policies are still loosely connected, and more synergy could be created. Aspects that appear to be underrepresented are product and infrastructure design, and collaboration among the actors throughout the value chain. Consensus on the need to include options under all perspectives, recognising the diversity of social relationships embedding production, distribution and consumption practices is relevant in the framework of sustainable food systems. Circular Economies-Bioeconomy-Blue Growth (territorial and marine production networks with vertical and horizontal integration) take into account alternative food networks (short supply chains, proximity between producers and consumers, territorial and marine quality attributes of food) considering, as production factors, landscape models and biodiversity , participative governance schemes including consumers and local community, food knowledge shared, innovation and technology access. This will be the focus of the "Summit Les Deux Rives" (Marsille, 24 June 2019), an initiative that was born to relaunch the cooperation between the northern shore and the southern shore of the Western Mediterranean, giving voice to civil society, focusing on the elements that merge and elaborate a real and concrete proactivity.

ADDENDUM TO SESSION 4

TOWARDS THE SUSTAINABILITY OF SMALL SCALE FISHERIES AND AQUACULTURE IN THE MEDITERRANEAN: STATUS, ACTIVITIES AND PROSPECTS.

Sicilia Seafood

Mediterranean Fisheries Department of Sicily

Abstract
SICILY SEAFOOD is the project for the enhancement of fish products that express quality, culture and territory. A brand that brings together companies that operate along the fish supply chain and carry a Mediterranean maritime culture. Fishing in Sicily has a very long history and it has always been one of the leading sectors of the economy, triggering over the centuries a strong bond with the territory and handing down extraordinary anthropological and manufacturing knowledge, which are related to ancient gastronomic traditions.
The European Union for decades has encouraged the scrapping of boats and fishermen starting from the theorem "less fishermen at sea, more safeguarding of fish resources". To date, 70% of the fish that is consumed is imported from abroad, with fish resources suffering due to pollution and climate change and with the social hemorrhage that has caused the loss of tens of thousands of places of work, FINALLY, we change course. We wants to encourage artisanal fishing and its added value, the international cooperation, the economy of the sea and coastal areas, the relationship between fishing and tourism, but above all, we aim at the educational value of the fisherman and the his maritime identity.
We must start from the Mediterranean, an ancient crossroads of peoples, civilizations and cultures: for millennia everything has converged there, complicating and enriching its history: food, plants, animals, cars, merchandise ships, religious ideas, ways of life.
The current face of the Mediterranean is the sum of movements that took place one century after the other. The maritime and fishing terminology often brings us back to the lexicon of tuna and tuna: the Arabic word tun, the Spanish word Atun and the Greek-Latin word Tunnus confirm the centrality of a Mediterranean marine culture true strength past, present and future.
SICILY SEAFOOD supports biodiversity and also enhances minor fish species, often absent in our tables, even if rich in nutraceutical substances, noble proteins, omega 3 and other ..... fixed points of the Mediterranean Diet, an UNESCO cultural heritage.
The identity and nutritional value of the product paves the way for a series of projects to enhance what ends up in our fishermen's networks; it is necessary to characterize and certify our products, because in the global market , the identity is the winning card.

MILAN URBAN FOOD POLICY PACT: SUSTAINABLE FOOD SYSTEMS IN THE MEDITERRANEAN CITIES

FAO Framework for the Urban Food Agenda: On-going and future work

Jorge M. Fonseca, FAO

Abstract

In response to major global developments, including the unprecedented urbanization rates and the increased political-economic decentralization processes in countries, and to major challenges including increased climate shocks and widening disparity of income within countries, the Food and Agriculture Organization of the United Nations, FAO, has launched a guide for leveraging sub-national government action to ensure sustainable food systems and improved nutrition. The FAO Framework for the Urban Food Agenda (http://www.fao.org/3/CA3151EN/ca3151en.pdf) serves as a corporate strategy to address emerging calls from countries, responding to demands for a multi-sectorial, multi-stakeholder and multi-level approach to food insecurity and malnutrition across the rural-urban continuum. The Framework provides a rationale about the unique position of FAO to influence positively the global urban food agenda and it defines guiding principles that ensure full inclusion of the objectives of the 2030 Agenda. The basis for a global action programme to achieve the outcomes will be presented, with seven comprehensive areas of support (CAS). The CAS together form a 3E approach in which FAO, with partners, assists governments to: i) Enable improved policy environments through diverse laws, regulations, governance and empowerment of institutions; ii) Execute actions according to context-specific realities delivered, inter alia, shorter supply chains, inclusive public food procurement, innovative agro-food business, healthier food and green environments, and optimized supply chains and sustainable bioeconomy; iii) Expand good practices through the exchange of information and trans-local cooperation, and form a basis for an independent global forum that promotes participation of different government levels to effectively promote good practices on food governance. A discussion of potential activities being, and to be, implemented in each of the CAS is provided.

The urban food agenda: some critical reflections

Roberta Sonnino, School of Geography and Planning, Cardiff University, UK

Abstract

Reflecting the renewed urban optimism of the global development agenda, cities are often viewed as effective food policy actors, with the capacity to promote joined-up food policies, enhance participation in the governance of food and incentivize multi-actor collaborations and knowledge-exchange. Increasingly, however, the celebration of these innovations has been accompanied by a tendency to fetishize the urban and reduce it to a discrete spatial category that exists in isolation from people's everyday lives.

Building on a critique of global governance idioms such as "smart" and "resilient" cities (and associated methodological frameworks), this presentation will emphasize the need to problematize and unpack notions of "participation" and "inclusiveness", paying attention to multi-scalar socioecological relations as well to micro-politics – both of which can support but also constrain the formulation or implementation of progressive food politics. To be politically meaningful and transformative, the urban food agenda must empower citizens by drawing upon the different knowledges, experiences, priorities and practices of different communities - including groups that are excluded from dominant narratives and approaches. As the presentation concludes, this entails looking at "the urban" in "urban food systems" as simultaneously a process and an outcome – both of which can (and should) be reconfigured in more democratic and sustainable ways.

World Sustainable Urban Food Centre of València

Vicente Domingo, Centro Mundial de València para la Alimentaciòn Urbana Sostenibile-CEMAS

Abstract

The World Sustainable Urban Food Centre of València is a joint initiative between the València City Council and the Food and Agriculture Organisation of the United Nations (FAO) to promote, manage and coordinate permanent action in two areas:

- Knowledge management. Collection and classification of the multiple initiatives aimed at establishing sustainable local food systems in cities around the world. A physical and technological space for sharing knowledge as well as policies and actions connected to nutrition, food, urban-rural relations, climate change, healthy and local food, gender, food waste and other issues related to urban food systems.
- Communication. Dissemination and awareness-raising of all those issues related to food, nutrition, the fight against hunger, climate change and sustainable local food systems, both from València and from any other city in the world.

In order to achieve this goal, this new institution will serve as an active tool for the classification and archiving of the policies, strategies and actions which are to be implemented by the world cities and their peri-urban territories, in addition to providing guidance for the aforementioned endeavours. The institution aims to achieve local sustainable food systems within a framework of rights, responsibility and coherence. This institution must also facilitate information and knowledge, have a great management capacity and worldwide connection and it must maintain regular contact with other United Nations agencies involved in these processes, as well as other public and private entities, foundations and research centres.

The World Sustainable Urban Food Centre of València CEMAS, must be capable of initiating projects from its own structure or in cooperation with other institutions and agencies as deemed convenient. The CEMAS must also become an effective instrument for locating and executing processes linked to FAO's major strategies with regards to the fight against hunger, sustainable urban food systems, climate change, nutrition and food waste.

THE CHALLENGE OF ORGANIC FOOD SYSTEMS IN THE MEDITERRANEAN

Organic facts and figures on the Mediterranean

Patrizia Pugliese, Mediterranean Organic Agriculture Network, CIHEAM- Bari

Abstract

Organic farming in Europe and in the Mediterranean represents, nowadays, one of the strategic sectors of agriculture due to the recognized added value of its products, the socio-economic benefits for farmers and consumers, its positive impact on the environment, public health, rural development and animal welfare.

Based on data and information shared by MOAN country delegates and published in MOAN report 2019, the contribution will provide an overview of the past 20-year achievements and the significant progress that most Mediterranean countries have made in the development and consolidation of their national organic sector and regulatory and policy settings, often following a major or a mixed development path (e.g. institutionalised, market-driven, NGO-driven). Also, the latest facts & figures and emerging trends will be presented. In 2017, in the Mediterranean region the total certified organic area (which includes wild collection areas) covered over 9 million hectares of which 7.5 million hectares are organic agricultural land. The largest part of the Mediterranean organic area is located in the Mediterranean countries of the European Union (EU Med) (75% of total organic area and 87% of organic agricultural land) followed by Candidate and Potential Candidate (CPC) countries (16% and 7%) and the Southern and Eastern Mediterranean (SEM) countries (8% and 6%). Organic agricultural land cultivated in the MOAN countries represents, overall, 11% of the world total figure.

Continuous updating of the-state-of-the art of the organic sector in the Mediterranean region is at the core of MOAN's mission and results out of collaborative working relations among public institutions, such as ministries of agriculture, ministries of trade, customs authorities, research centres and private actors, like CBs, national and local associations. Accurate and reliable statistics and information remain crucial for strategic planning and effective decision making aimed at a sustainable growth of organics in the region.

COPING WITH FOOD LOSSES AND WASTE IN THE MEDITERRANEAN THROUGH MORE SUSTAINABLE FOOD SYSTEMS

A systems approach to food losses for sustainability and improved nutrition

Jorge M. Fonseca, FAO

Abstract

Maintaining the quality of foods, particularly of those that are highly perishable (e.g., fresh fruit, vegetables and fishery products) in the rural-to-urban supply chain and at the point of sale—in wholesale and retail markets—poses a major challenge. This is particularly true in middle-income countries of the Mediterranean region. Lack of coordination of financial and human resources and of the capacity for disposing of and, when possible, reusing and recycling food waste and packaging materials is contributing to alarming levels of contamination of fresh water, raising major hygiene concerns. In this regard, there is a growing demand for FAO and stakeholders to contribute to a sustainable and circular bioeconomy that integrates waste streams from agriculture, forestry, fisheries and the food and feed industry in the economy through bioeconomy processes.

During the last several years FAO launched a number of projects in the Near East and North Africa, NENA, region based on a food system-wide framework for analyzing food loss and waste, which includes all actors/operations along the supply chains and key decision makers and in relevant institutions. Moreover, a new work stream in FAO is pointing at the potential of a sustainable bioeconomy, and its effects on food losses and waste, by promoting sustainable food system actions of local governments given their significant role in waste reduction and management. A snapshot of the recently-completed, ongoing and coming work in FAO in those areas of work will be provided. The work presented argue that actions for a wholesome strategy to reach 2030 Agenda goals should involve revision of both private and mandatory quality standards as to explore opportunities for marketing nutritious fresh food products that are safe to eat but that, given cosmetics defects, are currently excluded from formal commerce. Emphasis is placed on the need for working with supply chain stakeholders to apply innovative interventions that enhance efficiency and improve safety and quality to maximize the use of food and that ensures the re-use and recycling of non-avoidable food waste such as non-edible food parts.

This volume includes all abstracts of the speakers and the concept notes of the thematic sessions presented at the Second World Conference on the Revitalization of the Mediterranean Diet on the topic *"Strategies towards more sustainable food systems in the mediterranean region. The Mediterranean diet as a lever bridging consumption and production in a sustainable and healthy way"*.

Organized by CIHEAM-Bari and Forum on Mediterranean Food Cultures in Palermo, from 15 to 17 May 2019, in collaboration and association with several technical partners, the Second World Conference is a first-of-the kind event gathering scientists, researchers, academics, practitioners, representatives of the civil society, managers and decision-makers from around the Mediterranean to discuss and share knowledge on the latest developments on sustainable food systems.

The papers contained in this book of abstracts are the contributions received directly from the speakers and are not edited by the co-chairs of the sessions or by the international scientific committee.

The abstracts are subdivided according to the eighteen thematic sessions through which is articulated the three day World Conference 2019. Each thematic session is introduced by a concept note made by the co-chairs.

This book of abstracts forms the basis of the Conference as an open transdisciplinary discussion forum, towards a better understanding of the multidimensionality of the sustainability of food systems, thus paving the way for coping with multiple challenges facing the Mediterranean and ensuring sustainable development for present and future generations.