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Mediterranean Diet: territorial identity and food safety

COSIMO LACIRIGNOLA*, ROBERTO CAPONE*

The challenges of food and human nutrition are closely connected to those of world health. If hunger and malnutrition are increasing dramatically all over the world, statistics from the FAO, WHO and the World Bank also tell us that another parallel process linked to food is increasing inexorably and stealthily, and this is the number of people who are overweight and obese.

Considered to be real epidemics, these problems are showing up mainly amongst the younger generations and especially in the cities.

The latest WHO statistics indicate that by 2015 there may be about 700 million

obese people in the world.

This does not even exclude the southern Mediterranean countries and the regions whose dietary traditions constitute the last defence against the dietary shift taking place.

Which is to say, the regions where the Mediterranean Diet has been discovered, identified, tested and shown to be a positive factor in the health of the local populations.

In these areas the Mediterranean Diet has always represented a variety of values, combining and linking cultural, socio-economic, dietary, nutritional and environmental factors, which taken together in all their complexity express a Mediterranean life-style which has had world-wide success.

Paradoxically, just as this diet is becoming more popular in the world and increasingly recognised by the international scientific community, the Mediterranean populations are moving further and further away from this model.

There are many causes:

- The feminization of the economic life (17% in Algeria, 24% in Tunisia, 29% in Morocco, 43% in Turkey, 45% in France and Portugal, 35% in Italy).

- Smaller families and household members leaving home.

- Compulsory education and training by a collective taste.

- Overall decline of traditional products in the South, not due to apathy but to fewer occasions for consumption; renewed interest in the North.

- The emergence of supermarkets and "modern" foods in the shops in the South.

This modern life-style also involves a progressive abandonment of the daily habit and of sociable eating, and an impoverishment of the skills of home cooking which have been passed down for generations; these have always been the main features of the Mediterranean dietary model.

More generally we can state that the Mediterranean Diet is being increasingly eroded due to the *globalization of life-styles* and that loss of awareness and understanding of the problem, together with the younger generations' lack of interest is leading to an inevitable erosion of the Mediterranean dietary cultural heritage.

This is also confirmed in the report by the United Nations Environment Programme entitled "The Mediterranean Strategy for Sustainable Development". It announces a deterioration of Mediterranean dietary habits and the decline of the Mediterranean Diet model caused by the predominance of imported models of consumption.

These considerations should give all the interested parties (policy makers, public institutions, universities, research centres, society etc.) some food for thought, because at the very moment that the Union for the Mediterranean is trying to revive the Barcelona Process launched in 1995, the Mediterranean and its peoples risk losing for ever their very cultural identity. But the most worrying aspect of this loss lies in the complete lack of awareness not only of younger generations, but also of governments and society as a whole.

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The diversity of dietary cultures and traditions expressed by the Mediterranean Diet is an important resource which has not yet been used within the framework of Euro-Mediterranean Partnership to promote a concrete identity and sustainability of the rural and cultural resources of all the Mediterranean countries.

In effect, the constant presence of the Mediterranean Diet and its values in the world's media has made the very concept of the MD into an extraordinary and very effective marketing tool for the regions, which can promote *agro-food, tourism, crafts and culture* all at the same time.

There are numerous motives for identity and links between the Mediterranean Diet and territory, but in order to be used these must be defined and spread in order to become recognisable.

At the local level, the Mediterranean Diet should be defined and people should be informed about it in order to re-establish awareness of their rich cultural heritage, and at the same time in order to improve the quality standards of products and services to meet new consumer demands. At the national and international levels the aim is to safeguard and promote the health aspects and also territorial specificity. This could bring about the development of "integrated local economies" based on food, agriculture, tradition and culture, with interesting prospects for the entire Mediterranean basin, faced with a global market economy whose limits are increasingly evident, especially when it comes to wastage and environmental damage. The local micro-economies can work very well, respecting the eco-systems, human health and cultures, favouring the conviviality and solidarity which are typical of the Mediterranean societies. This model of local economic development is most meaningfully expressed in agriculture, linked to the principles of seasons and territory, which make a decisive contribution to the protecting and spreading respect for agro-biodiversity.

For the entire Mediterranean region this would mean in general:

- added cultural and economic value
- reinforcement of the common origins and prestige of local products and producers
- improved transparency and protection of the market through definition of quality standards and product identification within the WTO framework
- new business possibilities and an important increase in profit margins due to the effect of added value
- increased consumption of Mediterranean Diet products and therefore greater importance of Mediterranean products on the international market
- the Mediterranean Diet as a driving force in the change-over from negative tendencies and unhealthy dietary habits
- increased assistance and participation programmes of the northern and southern Mediterranean regions
- re-evaluation of the landscape and farmlands
- participation in environmental sustainability and production.

With regard to the very question of environmental sustainability, the MD has been analysed and compared with another kind of diet which is very widespread in western society – the North American diet. This mostly involves consumption of meat and an increasing consumption of sweets and foods with high concentrations of sugars and fats; the MD, on the other hand, mainly consists of carbohydrates, fruit and vegetables. In brief, a person who follows the North American diet has a daily ecological footprint of 26.8 m², and releases about 5.4 kg. of CO₂ into the atmosphere; a person who follows the Mediterranean Diet has a daily footprint of 12.3 m² and releases about 2.2 kg of CO₂ into the atmosphere.

This demonstrates yet again the potential of the Mediterranean Diet, which unfortunately risks not being achieved. In order to valorise the MD in concrete terms, it is necessary to encourage work in the countries on the Mediterranean, for cooperation and an exchange of experiences, and common strategies need to be identified for spreading and promoting the Mediterranean Diet, creating awareness and protecting it. This is why four Mediterranean¹ countries (Italy, Spain, Morocco and Greece) have proposed including the Mediterranean Diet in the list of the Intangible Cultural Heritage of UNESCO (United Nations Education, Science and Culture Organization). One of the tasks of UNESCO is that of identifying world cultural and natural heritage, protecting it and transmitting it to future generations.

¹ This dossier has also been strongly supported by the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) through the joint declaration signed by the Ministers of the 13 member countries of the Centre (Italy, France, Greece, Spain, Malta, Tunisia, Morocco, Egypt, Turkey, Portugal, Albania, Algeria and Lebanon) during their last meeting held at Zaragoza from 2 to 4 February 2009. The final declaration, regarding the point about the Mediterranean Diet states "...This is an extraordinary cultural heritage which unites and identifies us, and because of its strategic importance for society, the territory, the environment, the landscape, the economy, production and health, the CIHEAM member countries support the proposed candidature, so that UNESCO may recognize the MD as belonging to Intangible Cultural Heritage."

▪ **How to achieve the required food production to meet the growing demand?**

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Jel classification : Q180, Q250, O130

Abstract

We now face the challenge of feeding 8 billion people by the end of the first quarter of the twenty-first century. More than 80% of these people will live in developing countries that are those suffering the most from severe water scarcity, notable shortage in food production and increasing hunger and poverty. The challenge is: how to achieve the required food production to meet the growing demand?

To feed the increasingly growing population, on the one hand, balanced, broad-based pro-poor growth-oriented programs are generally required to increase food production, agricultural productivity and rural income and, on the other hand, special targeted programs are necessary to alleviate hunger. Success mostly depends on having conducive policies, adequate institutions, improved market infrastructure, social safety nets and primarily peace and stability, all on a sustainable basis.

In this paper, our attempt is to outline the key issues that allow shifting our priority attention from a common understanding of the major causes behind the problems to concrete actions that must be implemented, in view of fighting hunger and achieving food safety, water security and environment sustainability.

Keywords: water management, environment sustainability, food safety

Résumé

Le défi auquel nous sommes confrontés est de nourrir une population mondiale qui atteindra les 8 milliards à l'horizon 2025. Plus de 80% de cette population sera concentrée dans les pays en développement qui souffrent le plus de la rareté de l'eau, d'un déficit important de production alimentaire et d'une condition de famine et pauvreté croissante. Le défi est le suivant : comment réaliser la production alimentaire nécessaire pour satisfaire la demande croissante ?

Pour nourrir une population qui augmente sans cesse, d'une part il est nécessaire d'envisager des programmes de croissance équilibrés, à large assise et en faveur des pauvres, axés sur l'augmentation de la production alimentaire, la productivité agricole et le revenu agricole, en général, et d'autre part des programmes ciblés et spécifiques de lutte contre la faim. Le succès dépend surtout de la mise en place de politiques appropriées, d'institutions adéquates, d'infrastructures de marché renforcées, de réseaux sociaux accessibles et surtout de paix et stabilité, sur une base de durabilité.

L'objectif de ce travail est donc d'illustrer les questions-clés permettant de focaliser l'attention non seulement sur les causes principales des problèmes abordés, mais aussi sur les actions concrètes à réaliser, afin de lutter contre la faim et atteindre la sécurité alimentaire, la sécurité des ressources en eau et la durabilité de l'environnement.

Mots clés : gestion de l'eau, durabilité de l'environnement, sécurité alimentaire

▪ **Mid-Term Evaluation of Rural Development Plans in Italy: Comparing models**

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JEL Classification: R110, R580

Abstract

The paper comes from the observation that, although there are many evaluations of the rural development planning, there does not appear to be a similar number of studies and analyses of the “evaluation” itself and, in particular, studies and analyses of complex evaluations like those concerning the Rural Development Plans.

On the basis of the contents of RDPs mid-term evaluations, the level of coherence of the evaluative practice in Italy will be examined, in relation with the methodological debate that has grown on the evaluation of programs as opposed to the EU Commission methodological prescriptions. On the basis of (meta) criteria, the aim of the work is to verify the methodological contents of the mid-term evaluation reports of 14 RDPs in the areas of the central-northern Italy, by analysing the evaluation processes rather than their outcomes. Through analyses and comparisons of these reports, the “quality” of evaluations is reconstructed.

Keywords: Meta-evaluation, Evaluation, Rural Development Plans

Résumé

L'idée d'écrire cet article dérive de l'observation du fait que même s'il y a de nombreuses évaluations sur la planification du développement rural, il n'y a pas assez d'études et analyses sur le processus d'évaluation lui-même et, en particulier, d'études et analyses sur les évaluations complexes comme celles qui concernent les Plans de Développement Rural (PDR). Sur la base des contenus des évaluations à moyen terme des Plans de Développement Rural, le niveau de cohérence de la pratique évaluative mis en œuvre en Italie sera examiné, en relation avec le débat méthodologique sur l'évaluation des programmes qui s'oppose aux prescriptions méthodologiques de la Commission européenne. Sur la base de (méta-)critères, cet article vise à vérifier les contenus méthodologiques des rapports d'évaluation à moyen terme de 14 plans de développement rural mis sur pied en Italie du Centre et du Nord, en analysant les processus d'évaluation plutôt que leur résultats. A travers l'analyse et la comparaison entre ces différents rapports, nous avons établi la « qualité » des évaluations faites.

Mots clés: Méta-évaluation, Evaluation, Plans de Développement Rural

- **A Fuzzy Multicriteria Mathematical Programming model for planning agricultural regions**

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Jel classification: C610, Q150

Abstract

Modern agriculture is characterized by a series of conflicting optimization criteria that hinder the decision-making process in the planning of agricultural production. Such criteria are usually gross margin, the variance of gross margin that stands as a measurement of the total risk, labour, etc. At the same time, the decision-making process in the agricultural production planning is often conducted with data that accidentally occur in nature or that are fuzzy (not deterministic). Such data are the yields of various crops, the prices of products and raw materials, the available quantities of production factors, etc.

In this paper, a fuzzy multicriteria mathematical programming model is presented. This model is applied in a region of northern Greece with irrigated agriculture where the optimal production plan is achieved. Then, we compare the results of this model with those of a simple multicriteria mathematical programming model (MCDM model), as well as with those of a simple linear programming model (LP model).

Keywords: multicriteria models, optimal production plan, irrigated agriculture.

Résumé

L'agriculture moderne se caractérise par toute une série des critères d'optimisation en conflit qui entravent le processus décisionnel de planification de la production agricole. D'habitude, ces critères sont la marge brute, la variation de la marge brute qui est utilisée comme mesure du risque total, le travail, etc. En même temps, le processus décisionnel de planification de la production agricole se déroule souvent sur la base de données qui apparaissent accidentellement dans la nature ou qui sont floues (indéterminées). Ces données sont par exemple les rendements de différentes cultures, les prix des produits et des matières premières, les quantités disponibles des facteurs de production, etc.

Ce travail présente un modèle multicritère flou de programmation mathématique. Ce modèle est appliqué dans une région de la Grèce du Nord où l'agriculture est irriguée et le plan optimal de production est atteint. Ensuite, on compare les résultats de ce modèle aussi bien avec les résultats du modèle multicritère simple de programmation mathématique (modèle multicritère d'aide à la décision), qu'avec ceux du modèle élémentaire de programmation linéaire.

Mots clés : modèles multicritères, plan de production optimale, agriculture irriguée.

- **How responsive is the crop yield to producer prices? A panel data approach for the case of Turkey**

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Jel Classification: C23, Q10, Q18

Abstract

The food crisis in 2008 clearly shows the importance of productivity in agriculture. This topic has recently become even more important since the countries are obliged to decrease their agricultural protection due to WTO rules which have an important effect on crop prices. As the global land area for agricultural production remains fixed, it is important to investigate how responsive productivity is to price changes. In this study, price responsiveness of yield is investigated by using balanced panel data from 15 provinces in Turkey. The results from a fixed effects model that controls for unobserved heterogeneity indicate that the relative prices of wheat to barley and wheat to fertilizer are important factors to determine productivity. The coefficients for the price of other crops as well as price of inputs, and average April and May rainfall are also found to be significant determinants of productivity.

Keywords: Price responsiveness, Yield, Fixed Effect Panel Least Squares, Wheat

Résumé

La crise alimentaire de l'année 2008 montre clairement l'importance de la productivité agricole. Ce sujet a récemment acquis encore plus d'importance puisque tous les pays ont été obligés à réduire la protection de leurs secteurs agricoles à cause des normes imposées par l'OMC qui ont eu des effets importants sur les prix des produits agricoles. Comme à l'échelle mondiale, la surface agricole totale reste toujours la même, il est important de comprendre comment la productivité répond aux changements de prix. Cette étude examine la sensibilité du rendement au prix sur la base de données de panel équilibré provenant de 15 différentes provinces de la Turquie. Les résultats dérivant du modèle à effet fixe qui contrôle l'hétérogénéité non observée indiquent que les prix relatifs du blé par rapport à l'orge et du blé par rapport aux fertilisants sont des facteurs importants déterminant la productivité. De surcroît, même les prix d'autres produits, les prix des intrants et la pluviométrie moyenne des mois d'Avril et Mai sont des déterminants significatifs de la productivité.

Mots-clés: Sensibilité des prix, Rendement, Méthode des moindres carrés appliquée aux données de panel du modèle à effet fixe, Blé.

▪ **A comparative analysis of the coherence of Italian Rural Development Programs
2007-2013**

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Jel classification: Q180, R580

Abstract

The objectives of this paper are twofold. The first is to analyze the Italian Rural Development Programs in order to investigate how Italian regional authorities have interpreted the potential role of the new RD programs and identified the specific strategies to be pursued. The second objective is to evaluate the coherence between strategies and tools indicated in the different programs. For developing the analysis we will adopt the menu approach (Terluin and Venema, 2004). We will analyze three main steps which have to be taken in applying this method: (1) identification of rural development priorities; (2) selection of rural development measures coherent with these rural development priorities; and (3) allocation of financial means to these rural development measures. Following this approach, 21 Italian Rural Development Programs will be compared.

Keywords: Rural Development Plan, evaluation program, Italian regions

Résumé

Cet article a deux objectifs principaux. Tout d'abord, analyser les Programmes de Développement Rural mis sur pied en Italie afin de comprendre comment les autorités régionales italiennes ont interprété le rôle potentiel des nouveaux programmes de développement rural et identifié les stratégies spécifiques à poursuivre. Puis, évaluer la cohérence entre les stratégies et les outils indiqués dans les différents programmes. Pour développer l'analyse, nous avons décidé d'adopter l'approche à la carte (Terluin et Venema, 2004). De fait, nous allons analyser les trois différentes étapes à suivre dans l'application de cette méthode : (1) identification des priorités du développement rural; (2) sélection des mesures de développement rural qui sont cohérentes avec ces priorités de développement rural ; et (3) allocation de moyens financiers pour la mise en œuvre des mesures de développement rural. En suivant cette approche, 21 Programmes de Développement Rural mis sur pied en Italie seront comparés.

Mots clés : Plan de Développement Rural, programme d'évaluation, régions italiennes

▪ **Level of Knowledge, Practices and Attitudes of Dairy Farmers Regarding Food Safety in Turkey**

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Jel classification: Q130, Q180

Abstract

This study was aimed to reveal the knowledge levels, attitude and mentality regarding food safety of dairy farmers located in the Province of Izmir. 103 surveys were carried out; five counties and 20 villages in these five counties were involved in the surveys. In measuring the knowledge levels and in determining the current practices of farmers, a Five-Point Likert Scale was applied by setting "one" as "very low" and "five" as "very high". According to the obtained results, the knowledge level of farmers in the studied facilities was assessed to be quite poor. In consideration of the poor knowledge of farmers, the prior short-term objective should be the education of farmers on food safety issues. The extension activities should be started up for the sake of a continuous education and knowledge traffic. The current farming practices should be inspected by the raw milk buyers; furthermore, as prescribed by law, all stakeholders working in the sector must be systematically inspected by the Ministry of Agriculture. The survey was carried out on commercial facilities supplying raw material to the dairy industry that were chosen on the basis of their suitability to the purpose of the study. The paper adds to the body of knowledge on dairy farmers and their attitudes to food safety and suggests the implementation of various practices which could improve results.

Keywords: Dairy farm, Dairy Sector, Food Safety, Turkey, Food Regulation

Résumé

L'objectif de cette étude est de révéler les niveaux de connaissance, l'attitude et la mentalité des exploitants laitiers de la Province d'Izmir vis-à-vis de la sécurité alimentaire. En total, 103 enquêtes ont été menées dans cinq régions et 20 villages localisés dans ces régions. Pour mesurer les niveaux de connaissance et déterminer les pratiques mises en œuvre par les exploitants, l'échelle de Likert à 5 points a été utilisée où « un » correspond à « très bas » et « cinq » correspond à « très élevé ». D'après les résultats obtenus, le niveau de connaissance des exploitants auprès des structures étudiées s'est avéré très pauvre. Par conséquent, l'objectif prioritaire à court terme devrait être la formation des exploitants en matière de sécurité alimentaire. Les activités de vulgarisation devraient commencer pour garantir le transfert des savoir-faire et l'éducation. Aujourd'hui, les pratiques agricoles devraient être contrôlées par les acheteurs de lait cru; de surcroît, d'après la loi, toutes les parties prenantes doivent être sous le contrôle systématique du Ministère de l'Agriculture. L'enquête a été menée chez les structures commerciales qui fournissent les matières premières à l'industrie laitière. Ces fournisseurs ont été choisis sur la base des objectifs de l'étude. Cet article nous a permis d'améliorer les connaissances sur les exploitants laitiers et sur leurs attitudes vis-à-vis de la sécurité alimentaire ; il suggère la mise en œuvre de nombreuses pratiques qui pourraient améliorer les résultats obtenus dans le secteur.

Mots clés: Exploitation laitière, Secteur laitier, Sécurité alimentaire, Turquie, Réglementation alimentaire.

▪ **Sorghum economics under different irrigation methods and water doses**

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Jel classification: Q130, Q150

Abstract

In this study, an attempt has been made to evaluate the biomass production and the economic results of sorghum growing in Greece under surface and subsurface drip irrigation and with three different amounts of irrigating water: 100%, 70% and 50% of the daily evapotranspiration. Thus, a field experiment comprising a completely randomized block design with six treatments and four replications was conducted at the Experimental Farm Station of the University of Thessaly in 2007. Water needs were satisfied by using full (100% ET) and partial (70% and 50% ET) amounts of irrigating water. Crop production was measured in terms of dry biomass, while gross revenue, production costs and gross margin were the economic parameters to be measured and examined. The comparative data analysis of the two irrigation methods showed that the subsurface drip irrigation method was performing significantly better than the surface one in biomass production and other economic results.

Keywords: Gross revenue, production cost, gross margin, surface, subsurface drip irrigation, fibre sorghum, biomass production.

Résumé

Dans cette étude, nous avons essayé d'estimer la production de biomasse et les résultants économiques de la culture de sorgho en Grèce en comparant deux différentes méthodes d'irrigation goutte à goutte, de surface et souterraine, et trois différentes doses d'arrosage: 100%, 70% et 50% de l'évapotranspiration journalière. En 2007, auprès de la Station Agricole Expérimentale de l'Université de Thessalie, nous avons mené un essai de terrain qui a été mis en blocs aléatoires complets à six thèses et quatre répétitions. Les besoins en eau ont été satisfaits en apportant de doses d'arrosage qui intégraient la quantité totale (100%) ou partielle (70% et 50%) de l'eau évapotranspirée. La production a été mesurée en termes de biomasse sèche produite, tandis que le revenu brut, les couts de production et la marge brute ont représenté les paramètres économiques à mesurer et examiner. L'analyse comparative des données sur les deux méthodes d'irrigation goutte à goutte considérées a montré que l'irrigation souterraine est plus performante que l'irrigation de surface en termes de production de biomasse et d'autres résultats économiques.

Mots clés: revenu brut, cout de production, marge brute, irrigation goutte à goutte de surface, irrigation goutte à goutte souterraine, sorgho fibre, production de biomasse.

- **La valorisation du patrimoine et nouvelles alternatives pour un développement local durable dans le Sud-est tunisien**

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Abstract

The enhancement of local heritage can pave the way to the economic, social and environmental development of land-locked regions. Such an option becomes an alternative for local development. The South-east is one of the less favoured and underprivileged areas of Tunisia, facing several difficulties to keep up with the current development trends, but characterized by a very rich local heritage. The innovation and promotion of this local heritage by the tourism industry, the multifunctionality of agriculture and the organisation of local players can provide a solution to support the development of this territory.

Keywords: Heritage, enhancement, sustainable development, tourism.

Résumé

La valorisation du patrimoine est un vecteur de développement local des territoires enclavés aussi bien sur le plan économique et social qu'environnemental. Cette mesure devient une alternative de développement. La région sud-est tunisienne est l'une des zones défavorisées de la Tunisie, confrontée à plusieurs difficultés pour suivre le mode de développement, mais caractérisée par une richesse locale très abondante. L'innovation et la valorisation touristique de cette richesse locale, la multifonctionnalité de l'agriculture locale et l'organisation des acteurs locaux sont une solution pour le développement de ce territoire.

Mots-clés : Patrimoine, valorisation, développement durable, tourisme.