

SUSTAINABLE FOOD PRODUCTION AND CONSUMPTION IN A RESTRICTED AREA WITHIN MAJELLA NATIONAL PARK

1. Introduction.

Food availability, access and utilization, as well as the roles of different stakeholders involved, including the consumer, contribute in the dynamics of food system changes in relation societal, environmental or distributional goals. Focusing on nutritional outcomes for different consumers by age, gender and wealth with different dietary preferences, on multiple delivery pathways of food including home production, open markets purchase, supply by retail and supermarkets, on out of home consumption from restaurants and food services and to evaluate the effects on dietary intake and possible impacts on nutritional imbalances (Ruben R et al 2019) could explained the linkage between food system dynamics and human nutrition. According to FAO (2012), *sustainable diets* definition recognizes the interdependencies between food production and consumption, nutrients needs and dietary guidelines in addition to the links between human wellbeing and ecosystem change. Reynolds et al. (2014) reviewed that several studies, but not all, achieved environmental benefits by reducing consumption of animal-based foods and increased consumption of fruit and vegetables, probably due to the similar levels of environmental impacts in reducing land, water, and resources. Otherwise, Vieux et al. (2012) found that when meat were isocalorically replaced by plant-based products there was a null effect, or even increased environmental impact because of the amount of vegetable substitutes to replace animal proteins and calories. As suggested by Lairon (2010), an ecological healthy diet should be included *more nutrient-dense and plant food-based, with plenty of fruit, vegetables, nuts, whole grains and some fish*. Virtually, this agree with a dietary pattern not far from Italian Mediterranean eating habits that respects both the environmental impact and the significant social and economic role in the development of rural areas and in the context of biodiversity conservation. Many rural areas of Italian agricultural system are strongly characterized by local small production grown with techniques based on the historical and cultural tradition of that specific territory and occurring only in that place (Azzini et al., 2012). The aim of the present study is to examine the sustainability of Mediterranean Diet on a sample population living in a restricted area within Majella National Park.

2. Methods

By cross-referencing territorial statistical data and socio-economic characteristics of areas proposed by National Strategy Plan for Rural Development (PSN) (Art.11, EU Reg.1698/2005) a restricted area within Majella National Park has been selected. The study has been carried out in five municipalities (Montenerodomo, Pizzoferrato, Gamberale, Lama dei Peligni e Pennapiedimonte) located at province of Chieti in the Abruzzo region. The socio-economic analysis has been organized in two lines of activity. The first regarding a document analysis aimed to understand the importance of local products in the diet of subjects living in the analysed areas, traditionally very linked to agriculture and to local

productions, reconstructing the production system, verifying the dynamics of conservation/abandonment of consumption in favour of other products. The second was carried out by two surveys aimed at defining the relationships existing between the production sector and local trade and the composition of consumer demand. A nutritional survey evaluated diet and lifestyle in a population group living in the five municipalities selected for the socio-economic survey (198 volunteers, 61 males and 137 females, aged 18-86 years). Data were collected by questionnaires to gather information on the health status, lifestyle and physical activity, food consumption and eating habits. Adherence to the Mediterranean food pattern was evaluated by a semi-quantitative food frequency, using the Mediterranean Dietary Serving Score (MDSS). The Mediterranean Dietary Serving Score (MDSS) is based on the latest update of the Mediterranean Diet Pyramid (Monteagudo et al., 2015). A higher or lower contribution to the recommendations is assigned a score of 0 with a total score ranging from 0 to 24. Statistical analyses has been performed with StatSoft® STATISTICA 8 for Windows (StatSoft, Italia Srl).

3. Results

Socio-economic assessment within selected municipalities highlighted two clearly distinct areas. A first one, including Montenerodomo, Pizzoferrato and Gamberale, with higher presence of agricultural activities, there is a supply farming system that replaces the retail businesses, giving an important contribution to fresh products distribution (meat, eggs, cured meats, vegetables). In the second area, including Lama dei Peligni and Pennapiedimonte, the link with the agricultural activities has progressively lost over time and globalized production is more present as well as greater similarity in food demand and eating habits like “urban” municipalities. In the first area has been observed that 98.4% of volunteers consume local products with a 64,9% and 50,9% of consumers’ preferences, respectively for authenticity and organoleptic characteristics for local food products from their perceived quality; in the second area, 84.6% of volunteers choose eating local food, with the 61,5%, 41,5% of preferences for local food authenticity and organoleptic characteristics respectively. The nutritional assessment highlighted a mean diet quality by MDSS out of a total of 24 points of $15,1 \pm 3,5$ for Montenerodomo, Pizzoferrato and Gamberale area significantly higher ($P < 0.001$) than Lama dei Peligni and Pennapiedimonte one, where the adherence to the Mediterranean food pattern was a mean MDSS of $12,1 \pm 3,9$.

4. Discussions and Conclusions

The main goal of this study has been to harmonize the different methodological frameworks proposed for assessing the influence of the dynamics of local trade and consumption on the maintenance of agro-food production systems, on the agricultural biodiversity and on the Mediterranean eating habits of a population living in specific rural territory, the Majella National Park. This multidisciplinary approach allow to define an area with a reasonable maintenance of local agricultural biodiversity as well as the agricultural techniques and production practices. Our data underlined the close relation between local productive sector,

lifestyle and food consumption of local communities, markets and local supply chains. From the perspective of consumption behaviour analysis eating local is mainly determined by the knowledge of local products that ensures the purchase of an authentic product, with better organoleptic properties. a. Furthermore our finding underlined the role of local foods in improving diet quality and their direct relation to Mediterranean dietary pattern. As suggested by EAT-Lancet Commission (Willet et al, 2019) *achieving healthy diets from sustainable food systems for everyone will require substantial shifts towards healthy dietary patterns, large reductions in food losses and waste, and major improvements in food production practices*. Our research seems to support this statement

5. References

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