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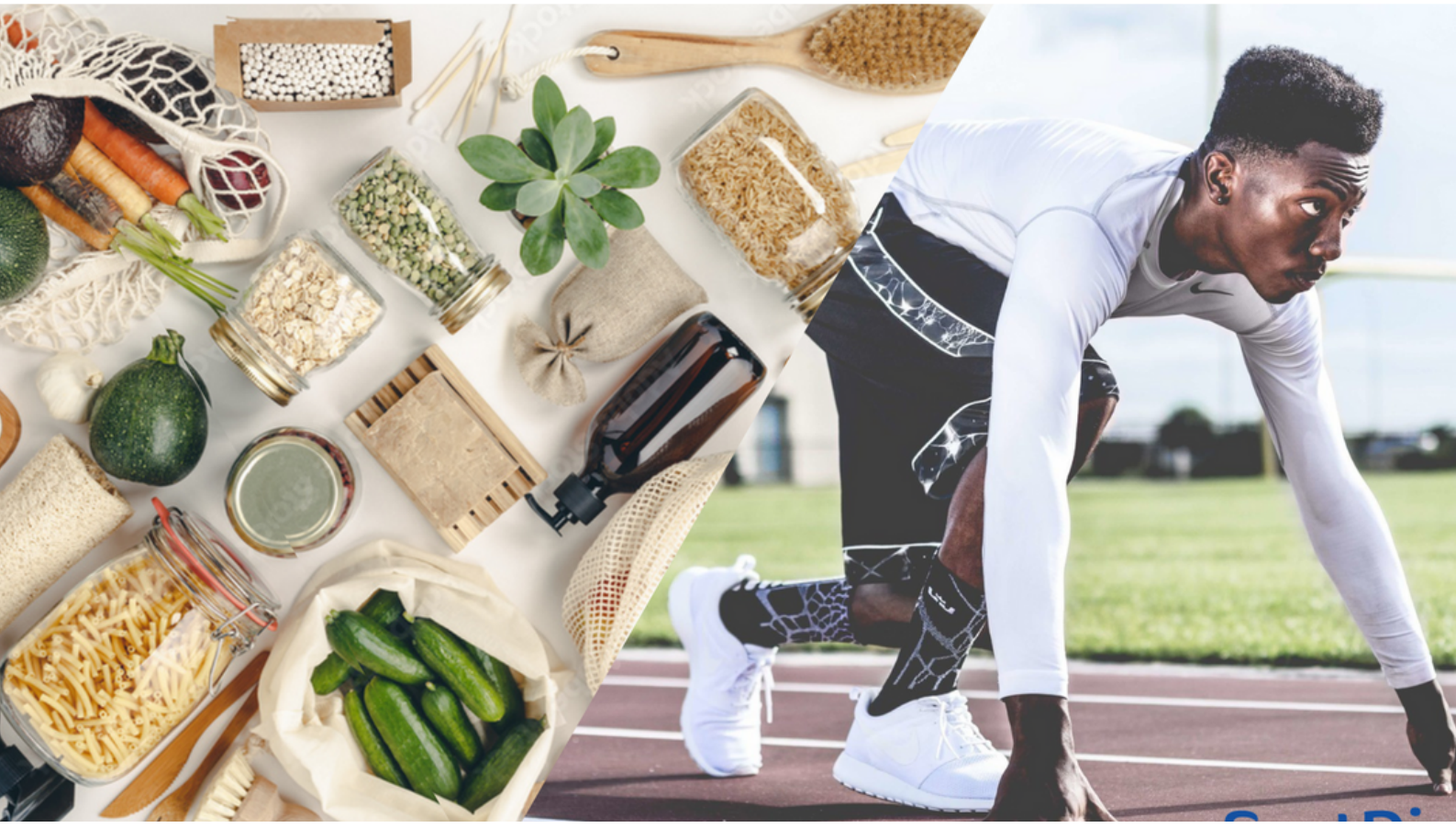
INTEGRATING SUSTAINABILITY IN ATHLETES' DIETARY CHOICES

SUSTDIET NATIONAL REPORT



KMGNE ANCE MEHFA Sport Evolution Alliance Mathaino Diatrofi Defoin

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SUMMARY

1. SUMMARY

This National Report is 1 out of 6 reports created under the EU-funded project "Integrating Sustainability in Athletes Dietary Choices", which is a KA2 ERASMUS+ Sport project, that aims to promote sustainable food consumption and to facilitate he shift to healthy, sustainable diets, in particular by supporting the integration of sustainability in sport nutrition in Germany, Greece, Malta, Portugal, Spain and Turkey.

The National Reports aim to present the results of a number of interviews taken to elucidate the situation surrounding athletes' dietary choices in each national context, as a step towards achieving the objectives presented above. The interviews involved a number of different target groups, namely athletes, coaches, and sport nutritionists/dieticians, who were inquired on eating habits, knowledge on healthy and sustainable diets, as well as on their willingness to change towards more sustainable options, and perceived barriers. All results are presented disaggregated by country, and by professional status (athletes, coaches, sport nutritionists/dieticians). This report refers to Greece and is structured as follows:

First, the report demonstrates the current dietary intake of the Greek athletes interviewed. It presents their real and perceived knowledge about sustainability and illustrates their willingness to change nutritional habits in favor of more sustainable ones. Moving on, it exhibits how sport nutritionist and coaches perceive their own role in implementing changes in their athletes' diets, including the main barriers athletes face regarding diet sustainability.

To note that, interviews were taken using a 5 point Likert Scale, ranging from "strongly agree" to "strongly disagree" options. Detailed percentages for most answers are given in parenthesis, where SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree.

2. INTRODUCTION

In recent years, sustainable diets have been put on the spotlight, as one of the solutions towards winning the fight against climate change. According to FAO, a sustainable diet is a diet with low environmental impact, which contributes to food and nutrition security and to a healthy lifestyle, for present and future generations. These diets are respectful of biodiversity and protect ecosystems, they are culturally acceptable, accessible, affordable, nutritionally adequate, safe, and healthy.

The Mediterranean diet, which was traditionally preferred in Greece, is thought of as a highly sustainable and healthy diet with a low environmental impact. Current generations have, however, moved away from the Mediterranean culinary paradigm and are preferring other, less sustainable options, which are characterized by higher meat, dairy, and alcohol consumption rates as opposed to the traditionally preferred vegetables, legumes, and fruits (Martimianaki et al., 2022).

At the same time, not much literature is available on the food preferences of Greek athletes, in particular, and on whether they are too moving away from traditional and sustainable consumption patterns, in light also of their elevated nutritional needs compared to the general population. The following interview findings aim to address this need and initiate a discussion on athlete diet sustainability in the Greek context.

3. ATHLETES' DIETARY INTAKE

3.1. Dietary Intake

Contrary to initial expectations, Greek athletes did not report an exceptionally high meat consumption rate overall. **Red meat** was consumed the most frequently, for which 80% reported a consumption rate of at least once per week, and 20% reported a 2-4 times per week rate. 1/10 of respondents reported a red-meat driven diet, where it is consumed on a daily basis, and another 20% reported never consuming any red meat. Consumption of **chicken and other poultry** was moderate. 60% of the interviewees reported at least a once per week consumption pattern, out of which only 30% consumed it more often (20% 2-4x week, 10% 5-6x week). **Fish** consumption was underwhelming. In fact, only 10% of respondents reported a consumption rate higher than once per week, whereas 30% did not ever consumed any kind of fish, 40% never consumed oily fish, and 50% never consumed shellfish, such as crab, prawns, or mussels. Consumption of processed meat was low, but perhaps higher than expected given the negative repercussions it may have on health and athletic performance. In detail, 20% of athletes consumed some type of processed meat 2-4 times per week, 20% weekly, and 40% between 1 and 3 times per month. Only respondents who followed a vegan or vegetarian diet never consumed any kind of processed meat (20%).

Dairy product consumption was relatively high among Greek athletes, with eggs, and cheese being consumed the most often. Cheese was consumed at least 2-4 times per week by 50% of the respondents, while eggs were eaten even more frequently, with 30% of respondents consuming them daily. On the other hand, Greek yogurt was consumed in moderation, between 1 and 4 times per week by 70% of respondents, either as a full fat or a low-fat product.

As expected, the preferred fat of Greeks was **olive oil**, with only 20% of respondents opting for an alternative (butter). **Fruits and vegetables** were consumed in a daily basis by most, and lentils were eaten between 1 and 4 times per month by 70% of athletes (30% weekly). Plant-based protein alternatives such as tofu and soya were not popular among athletes, with only 10% stating they preferred them more than 1 to 3 times per month, and 60% saying that they never consumed this food group.

3.2. Awareness on Sustainable Diets

All interviewed athletes stated that they understand what a healthy diet consists of (40% SA, 40% A), and 90% claimed they knew the impact their own diet exerts on their health (10% N).

Contrary to this, only 10% were certain about the constitution of a sustainable diet (10% SA), and another 40% answered positively, yet less strongly on the subject (40% A). It follows that 50% of respondents stayed neutral or that they stated they did not know what a sustainable diet consists of. Importantly, no interviewee was certain about the impact his or her diet has on the environment, and only 40% perceived themselves as having some kind of knowledge on the subject. 20% did not understand the environmental impact of their diet and another 40% adopted a neutral position. The above is in line with answers provided on the statement that "diet sustainability is a global issue", where only 40% answered positively, hinting at the fact that 60% did not understand the topic of diet sustainability altogether (40% A, 40% N, and 20% D). On a similar note, 30% of respondents reported being aware of the pollution that the food they consume generates (10% SA, 20% A). Finally, just 20% reported being considerate of the environmental impact of their food when they make consumer choices. On a positive light, an interpretation of this finding could be that only 10% of respondents are aware of the pollution their food generates but are still inconsiderate when they buy it.

Regarding aspects of diet sustainability that the respondents found important, animal rights and non-cruel animal treatment was valued the highest, being followed by labour rights and, lastly, by environmental considerations, which scored the lowest. In detail, 90% of respondents agreed that food production without animals being in pain is important, and 80% that food should be produced in an animal friendly way (10% N, 10% SD).
Moreover, 70% stated that food production should respect the rights of the animals (40% SA, 30% A), while 20% adopted a neutral position on this question. A similar number of participants was concerned with animals having sufficient space (30% SA, 50% A, 10% N, 10% SD), and 60% stated it is important that animals products are free-range (40% SA, 20% A, 20% N, 10% D, 10% SD). In conclusion, up to 90% of respondents, including those not following a vegan or vegetarian diet, seem to find important that animals are treated in a non-cruel way and their rights are well respected throughout the production process.

Moving on to the perceived importance of various aspects of food sustainability, respecting **labour rights** during production scored the highest. In fact, only 10% of respondents were inconsiderate of whether their food is produced through labour exploitation (50% SA, 30% A, 10% N, 10% D) and/ or unfair trade (50% SA, 20% A, 20% N, 10% D), while up to 20% remained neutral on the subject, which might mean they had not pondered on this before and lacked certainty. Perhaps due to being able to relate more with wage workers, respecting labour rights and not giving low wages had interviewees adopting a neutral position rather than disagreeing (50% SA, 20% A, 30% N). Child labour free production was seem as important by 90% of interviewed athletes, while, unexpectedly, 10% chose to stay neutral on the subject.

The perceived importance of respecting the environment during food production was clearly less pronounced. Only 10% strongly agreed that food should be produced in an environmentally friendly way. Another 40% agreed on this statement, 30% stayed neutral, and 10% disagreed. Similarly, 40% either agreed or strongly agreed (10%) that CO2 emissions should be minimal during production, 20% adopted a neutral position, and 20% either disagreed (10%) or strongly disagreed (10%) with this statement. Most athletes preferred food that is produced locally (60% SA, 10% A, 20% N, and 10% SD), and that is a seasonal product (40% SA, 20% A, 30%N, 10% SD). The majority of respondents chose to remain neutral on whether a product should have a fair-trade logo/ certification, while 30% stated that it is not important (10% SA, 10% A, 50% N, 30%D). Opinions on whether it is important for food to be produced organically were highly mixed (30% SA, 20% A, 30% N, 10% D, and 10% SA).

3.3. Barriers to Access

Almost all athletes perceived a lack of knowledge regarding food environmental impact as the primary barrier to accessing sustainable diets (30% SA, 60% A, 10% N). 40% of respondents thought that a lack of food quality in sustainable diets is another important barrier to access, whereas 30% disagreed with this statement and 30% adopted a neutral position. This result might plausibly mean that, approximately 70% of the athletes were concerned that a sustainable diet may lack some energy components (i.e., macronutrients), which they need for optimal performance. Importantly, 50% reported that sustainable food is not easily accessible in their community, and another 30% stayed neutral on this statement. This may mean that, in Greece, sustainable food is either too expensive, difficult to find, or inaccessible due to a lack of knowledge. On the other hand, 20% of respondents thought that sustainable food is easily accessible for them, which hints at them lacking some of the intrinsic (lack of knowledge, time) or extrinsic barriers (no access, high competition, resources) to access others may possess. In fact, up to 50% of respondents thought that extrinsic/ intrinsic barriers might limit them from making sustainable choices, as revealed in the related questions. However, another 50% of them either disagreed or strongly disagreed with this statement.

3.4. Wilingness to Change

60% of athletes reported that the environment has changed negatively compared to when they were children, and only 10% disagreed with this statement (40% SA, 20% A, 30% N, and 10% D). Percentages were identical regarding how concerned athletes were about the consequences of their diets on the environment, where only 10% stated they were not concerned.

This may well reveal that, as long as athletes are aware of the deterioration of the environment and the grave consequences human action has on the planet, they tend to be concerned on their own contribution to the problem as well. Nevertheless, 40% of respondents stated they were not convinced enough to adopt changes towards sustainability themselves (20% SA, 20% A, 20% N, 20% D, 20% SD). Contrary to some expectations, though, 50% stated that they are willing to consume more plant-based foods for sustainability (30% SA, 20% A, 30% N, 10% D, 10% SD), and 60% that they were willing to reduce meat consumption for that end (20% SA, 40% A, 10% D, 30% SD). A similar number reported that they would be willing to make other sacrifices for sustainability as well, such as paying more, spending more time cooking, etc., (30% SA, 20% A, 10% N, 30% D, 10% SD). Further, most athletes stated that they would be willing to reduce their food waste, and only 20% stated they would not (10% SA, 50% A, 20% N, 20% D). Unfortunately, only 10% of them were aware of the food waste application available, and they were not using it in their daily lives. Despite the relatively high levels of perceived willingness to change, only 50% of respondents reported they should take action themselves for sustainability (20% SA, 30% A, 40% neutral, 10% D), and a lackluster 30% that they would set sustainability goals as soon as possible (10% SA, 20% A, 40% N, 30% D).

Finally, 30% of respondents stated that opting for sustainability is not viable for them because of being athletes, while another 20% answered neutrally on this point (20% SA, 10% A, 20% N, 40% D, and 10% SD). Finally, 50% of athletes claimed that policymakers should take action for sustainability, and, importantly, 60% reported that they would be willing to change even if other athletes did not. This last finding may reveal that, provided athletes are convinced of the viability and necessity of diet sustainability, they are willing to become change-agents despite others not following suite.

As far as the agents perceived to have the most important role in diet sustainability for athletes, policymakers were selected as the most important ones (50%), followed by athletes themselves (30%), and sport coaches (20%). No athlete interviewed perceived sport nutritionists/ dietitians as the most important agent for athletes' diet sustainability.

4. THE ROLE OF COACHES AND SPORT NUTRISTIONISTS/ DIETETICIANS

4.1 Coaches

All coaches reported knowing what a healthy diet consists of (40% SA, 60% A), and 80% stated that they understand the impact diets exert on health (60% SA, 20% A, 20% N).

Percentages were identical as regards knowledge of what a sustainable diet consists of; 60% strongly agreed with having this knowledge, 20% agreed, and another 20% remained neutral. Likewise, 80% of respondents believed that diet sustainability is a global issue, revealing at least a partial knowledge on the subject, while 20% adopted a neutral position, which is in line with the rates of previous responses.

As concerns awareness of the impact the diet may have on the environment, 40% of coaches strongly believed to be aware of the pollution the food they consume generates, another 40% answered positively but with less certainty (40% A), and 20% adopted a neutral position. At the same time, 4/5ths of coaches reported that they consider the environment when making consumer choices regarding food (80% A, 20% neutral), hinting at the reasonable conclusion that, when aware of the pollution their food generates, coaches tend to consider the environment while making consumer choices.

Regarding the respondents' perceptions on the role coaches have in the race to achieve sustainability and mitigate climate change, everyone believed that climate change is an important issue for sport coaches to consider (40% SA, 60% A), and that sport coaches should play a major role in climate change mitigation strategies (60% SA, 40% A). Finally, respondents answered a series of questions on their perceived level of alignment their own views have with sport nutritionists/ dieticians, as well as with the athletes themselves. In specific, most coaches believed that their professional expectations and views align with those of sport nutritionists, both in terms of what constitutes a healthy diet (60% SA, 40% A, 20% N), as well as in terms of diet sustainability (20% SA, 60% A, 20% N). Surprisingly, no coach strongly believed that, in terms of a healthy diet, their professional expectations and views align with those the athletes have; 40% reported they do align, and another 20% disagreed with this statement (0% SA, 40% A, 40% N, 20% D). Like athletes, the aspect of diet sustainability that coaches found the most important was respecting human and labour rights, avoiding exploitation and child labour (100% SA), and ensuring fair-trade (40% SA, 60% A).

The perceived importance of animal welfare and environmental protection was highly similar in degree. Almost all respondents believed that food being produced in an animal friendly way is important (40% SA, 40% A, 20% N), and that meat should be a free-range product (80% SA, 20% A). Everyone reported that food should be prepared, produced and packaged in an environmentally friendly way (60% SA, 40% A), and with minimal CO2 emissions (80% SA, 20% A). Finally, 100% of coaches valued the product being local or regional (20% SA, 80% A), and seasonal (40% SA, 60% A), while almost everyone believed that it is better if products are produced organically (20% SA, 60% A, 20% N). As for food waste, 40% reported being aware of the food application available, and 60% that they use/ would be willing to use it in their daily lives. However, 40% stated that they would never consider using this or an equivalent application (40% SA).

Coaches viewed intrinsic barriers in their athletes, such as habits, time, and knowledge, as the most limiting factors concerning diet sustainability. In fact, 80% believed that these types of barriers limit their athletes from making sustainable choices (60% SA, 20% A, 20% N). Extrinsic barriers (culture, resources, high competition, dietary patterns imposed by the team, etc.) were viewed as limiting by all coaches, yet with somewhat less intensity (40% SA, 60% A)

Opinions regarding the accessibility of sustainable diet options were highly mixed. 40% agreed that sustainable food is easily accessible in their community, 40% disagreed, and 20% remained neutral on the subject. The same percentages were reached as regards the product quality of sustainable food, where 40% believed that there is indeed a lack of quality in sustainable food options, 40% disagreed with this statement, and another 20% adopted a neutral position. Nevertheless, few were the coaches (20% A) that viewed sustainable diets as lacking some of the energy components that athletes need (i.e., macronutrients), while almost half either adopted a neutral position (40% N), or viewed sustainable diets as adequate in terms of energy provided (40% D). The lack of knowledge regarding food impact was perceived as a barrier to sustainability by 100% of respondents. In fact, more than half (60% SA) of them strongly agreed with this statement. Defying expectations, perhaps, 100% of coaches supported the change of their athletes' diet into a more sustainable one (40%, 60%). All coaches reported being aware that they environment has changed negatively compared to when they were children, and 4/5th were very concerned about the environmental impact of their athletes' food choices (20% SA, 60% A, 20% N).

While few coaches perceived their athletes as conscious towards diet sustainability (40% N, 40% D, 20% SA), 80% believed they should take action towards sustainability themselves (80% A, 20% N), and were willing to change their athletes' dietary habits to contribute to sustainability, while 20% adopted a neutral position on this point.

Regarding their athletes' diet, most coaches stated that they were willing to push their athletes to reduce the amount of food they waste (20% SA, 60% A, 20% N) and that they are willing to push their athletes to consume more plant-based foods for sustainability (40% SA, 40% A). Interestingly, 20% of coaches strongly disagreed with this statement. Moreover, most coaches said they would limit the meat consumption of their athletes for sustainability (80% A, 20% N), and that they would be willing to change their athletes diets into more sustainable ones even if other athletes did not do the same (20% SA, 60% A, 20% N).

In a somewhat contradictory manner, 40% of coaches stated that they were not convinced enough to change the dietary habits of their athletes in terms of sustainability (40% A, 40% D, 20% SD) and that sustainable eating was not viable for their athletes current conditions (40% A, 40% N, 20% D). Perhaps in line with the above inconsistencies in the provided answers, which may reveal some degree of uncertainty of the interviewees themselves, only 20% stated that they were going to set new goals regarding the sustainability of their athletes' diets, whereas 80% remained neutral. Finally, 40% of respondents adopted a neutral position when asked whether they will willing to make some self-sacrifice for sustainability themselves, in terms of paying more, spending more time preparing food, etc.(60% A, 40% N).

4.2 Sport Nutritionists/ Dietitians

As expected, all nutritionists/ dietitians understood what a healthy diet is and its impact on health (100% SA). They also seem to know what a sustainable diet consists of (80% A., 20% SA), but are less certain of the impact that the diet has on the environment (60% A., 40% SA). 60% agreed that sustainable diets are a global issue and there was a 40% that disagreed with the above statement.

The answers on the question "do you consider the environmental impact when buying food" and on their awareness regarding the pollution that food may generate, were split. Only 20% strongly agreed with the above statements. The rest of the responses were either neutral or disagreed. The nutritionists'/ dietitians' views on whether sport dietitians should play a major role in climate change mitigation strategies were split as well (20% SA, 20% A., 40% N, and 20% D). Additionally, the answers were also split when asked if they believe that climate change is an important practice issue for sport nutritionists.

When buying food, most nutritionists/ dietitians agreed that the food should be seasonal, local/regional and organic. Being produced in an animal friendly way, free-range, without exploitation nor child labour and being traded in a fair way is also a concern for the majority of this group. Further, the majority agreed that it is important for products to be traded in a fair way, produced with minimal CO2, prepared in an environmental friendly way and having a fair trade logo/certification. Only 1/5 was aware of the food waste applications that are currently available. In fact, this group was using or had used these applications in their day-to-day life. Finally, nutritionists/ dietitians were either neutral or disagreed with the statement that it is easy it is to access sustainable food in their community.

Sport nutritionists/ dietitians in Greece were split in their willingness to change their athletes' diet into a more sustainable one. **Up to 80% were unwilling to drive their athletes to change their dietary habits**, especially when other athletes don't. Most of them reported the fact that they are not convinced enough in order to change their athlete's diets. Also, the majority believes that a sustainable diet is not viable for their athletes. All of the dietitians agreed or strongly agreed that there is **lack of knowledge regarding sustainable diets**.

There is no clear position between the nutritionist on whether they believe that the environment has changed negatively when compared to when they were younger, or a clear trend on whether they are concerned about the consequences of what athletes eat in terms of sustainability. 3/5 are neutral in acting towards sustainability and none of them showed a willingness in driving their athletes to a more plant based diet. Furthermore, most sport nutritionists/ dietitians believe that their professional expectations/views are at least partially aligned with coaches and athletes when it comes to healthy diet, but not with sustainability. Finally, 80% of the dietitians believe the athletes themselves play the most important role in the sustainability of athlete's diets.

5. CONCLUSION

Not surprisingly, the majority of respondents were well aware of the impact that diet has on health, irrespective of the group they belonged. At the same time, there seemed to be a widespread lack of knowledge regarding the environmental impact of food choices cutting across all groups targeted. Few were aware of what a sustainable diet consists of; a trend that was most pronounced among athletes themselves, but clearly visible in coaches and sport nutritionists as well.

Nevertheless, athletes viewed all aspects of diet sustainability as very important when asked on them separately (i.e., avoiding animal cruelty, respecting labor rights, and protecting the environment), and reported that they are very concerned about the environmental impact of their diets. Most stated that a lack of knowledge surrounding the environmental impact of food was the most important barrier to opting for diet sustainability, rather than food quality or concerns about sport performance.

Coaches were the most conscious when it comes to the environmental impact their food choices exert on the planet. Most stated they do make ethical consumer choices and are highly concerned for the environment. They agreed with athletes in that a lack of knowledge is the most important barrier to change and to accessing sustainable food alternatives. Moreover, they supported their athletes' changing into more sustainable dietary habits, and most were willing to drive them to change themselves.

On the other hand, there was no clear position between sport nutritionists on whether they believe that the environment has changed negatively compared to when they were younger, or a clear trend on whether they are concerned about the consequences of what athletes eat in terms of sustainability. In line with that, sport nutritionists were not willing to influence their athletes' dietary choices and thought that athletes themselves were responsible for making ethical choices, a finding that may reflect the different nature of their work compared to coaches, who generally are expected to guide athletes more closely and are used to exerting influence on their athletes' lifestyles.

In conclusion, however, opting for sustainability and making ethical food choices seems to strongly correlate with the level of one's awareness of the environmental impact that the diet exerts on the planet, as well as with their perceptions surrounding climate change, rather than with their professional status (athletes, coaches, nutritionists). The more someone believes that the climate is deteriorating and the more knowledge he or she has on sustainability, the more likely he or she is to prefer eating sustainably. This finding hints at the need to raise awareness among everyone concerned on the realities of climate change and the importance of making informed and ethical choices at the individual level. As long as people are aware of the deterioration of the environment and the grave consequences human action has on the planet, they tend to be concerned on their own contribution to the problem as well, including athletes and despite any other concerns they may have, for example, regarding food quality or sport performance.