



PARLIAMENTARY ASSEMBLY OF THE MEDITERRANEAN  
ASSEMBLEE PARLEMENTAIRE DE LA MEDITERRANEE  
الجمعية البرلمانية للبحر الأبيض المتوسط

**PAM 2<sup>nd</sup> Standing Committee on  
Economic, Social and Environmental cooperation**

**SCIENCE, TECHNOLOGY AND ENVIRONMENT:  
WASTE MANAGEMENT AND FOOD SECURITY**

and

**VISIT TO THE EXPO 2015**

*Milan, Italy, 11-12 June 2015*

**REPORT**





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**SUMMARY REPORT**

On 11 June 2015 the Parliamentary Assembly of the Mediterranean held the Conference “Science, technology and environment: waste management and food security” as part of the annual calendar of activities of its 2<sup>nd</sup> Standing Committee. The event was co-organized by PAM, the Neorurale and the Italian Order of Engineers. On 12 June, participants visited the EXPO 2015, the Universal Exhibition hosted by the city of Milan and dedicated to “Feed the Planet, Energy for Life”.

**Structure of the event**

After the opening session, during which local authorities and PAM Vice President took the floor, delegates visited the Neorural experimental farm of Cassinazza, where biodiversity is functional to agricultural production.

Following the visit to the project site, two working sessions were held.

Session 1 was dedicated to “Organic waste as a resource for Mediterranean Soil”.

Session 2 focused on the “Use of organic waste for Food Security and Environment”.

Each session was introduced by a PAM MP. Then, a keynote speaker took the floor in order to provide “food for thought” and to stimulate the discussion among members of parliaments who participated at the meeting. The key-note speakers were Prof. Fabrizio Adani, from the University of Milan, for session 1, and Eng. Leonardo Palumbo, from the General Division on Environment of the Regional government of Emilia-Romagna, for session 2.

**Conclusions**

The first day concluded with a “wrap-up and conclusions” session, animated by Prof. Raffaello Cossu, from the University of Padua, Italy. He underlined the most relevant issues raised during the sessions, notably:

- a) Soil is not renewable, and the Soil Organic Matter (SOM) is the key factor in order to maintain soil fertility. Therefore, a decrease in SOM implicates an increase of fertilizers, which account for 25% of the final production cost;
- b) SOM contributes in controlling global climate change, because it generates carbon sinks;
- c) Organic waste has been always a major concern in Waste management policies, but nowadays it is seen as part of the solution because it allows to recycle nutrients for the soil;
- d) Organic waste is a “zero kilometer source”: transport would make the process not economical;
- e) European legislation needs to be urgently updated to reflect recent technological progress.

**On 12 June**, participants visited the EXPO 2015, where a Memorandum of Understanding was signed between PAM and the Inter-Academic Group for Development (GID). In the second part of the day, participants were free to visit the Universal Exhibition autonomously.





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**EXECUTIVE REPORT**

**11 JUNE: PAM 2<sup>ND</sup> STANDING COMMITTEE MEETING ON “SCIENCE, TECHNOLOGY AND ENVIRONMENT: WASTE MANAGEMENT AND FOOD SECURITY”**

**OPENING SESSION**

**Sen. Emma Fattorini**, President of the 2<sup>nd</sup> PAM Standing Committee, opened the meeting by thanking the Natta family for the invitation addressed to PAM to hold a meeting of its 2<sup>nd</sup> Standing Committee at its project site in Cassinazza, Pavia, Italy. The PAM Vice President also thanked the Italian Order of Engineers for having contributed in the organization of the event. She underlined that the active involvement of PAM on waste management started in 2014, with the Caserta meeting, and the Milan event was the continuation of the efforts of the Assembly on this delicate issue. Sen. Fattorini gave an overview of the programme of the meeting and, after mentioning the activities of PAM on environment-related issues, gave the floor to the Italian national and local authorities present at the event.

**Hon. Enzo Lavarra**, Adviser for the Mediterranean to the Italian Minister of Agriculture, welcomed the participants and expressed his appreciation to the Natta family for the project aimed at uniting people and nature through agriculture. He stressed that such a site was made possible by a strategic vision based on investments in research, and by a new mindset which transforms the conception of waste into a resource. He concluded his intervention by stating that food security is fundamental in terms of food quality and also in terms of security of supply.

**Sen. Daniele Bosone**, President of the Province of Pavia, stated that the territory of Pavia is an example of sustainability dedicated to agriculture, with 80,000 hectares of rice fields and 35,000 hectares dedicated to wine. He then recalled the theme of EXPO 2015, saying that, in order to feed the planet, we need to merge technology and agriculture, which is what is made at Cassinazza. To do this, the province of Pavia built very strong relations with the local University in order to reduce the energy required in agriculture.

**Dr. Francesco Natta**, CEO of Acqua&Sole, started his presentation by underlining the importance of agriculture to our life. He then focused on the Cassinazza project and underlined that, in the last 15

years, the biodiversity of the site grew remarkably: for example, the number of bird species grew from 80 to over 200. He underlined the decision not to use insecticide, as well as to significantly reduce the use of fungicides. This also led to a natural reduction of the mosquito season. Dr. Natta illustrated the functioning of the center for the recovery and the reuse of nutrients. The center was designed to avoid the rice straws to be absorbed by the soil, and so doing generating CH<sub>4</sub> (Methane) emissions, which are 21 times stronger than CO<sub>2</sub> emissions. In Cassinazza, the rice straws are processed in a bioreactor, which transforms them into gas and organic nutrients for the soil. The center has the capacity to receive 120,000 tons of waste and wastewater per year, which can be converted into approximately 190,000 tons of organic fertilizer completely sanitized and deodorized, and 4,000 tons of ammonium sulphate (inorganic fertilizer). In addition, Dr. Natta explained that the center produces an annual surplus of energy of more than 12,000 MWh. Benefits will not only be environmental: the replacement of mineral fertilizers by fertilizers produced in the center results in an annual economic benefit of EUR 2 million.

### **VISIT OF THE NEORURALE PROJECT SITE**

Participants visited the site of the Neorurale, guided by Dr. Francesco Natta. Delegates were shown the rural area where agricultural production is added to that of other services, using the relevant farmlands and buildings, with the aim of increasing the quality of the landscape, biodiversity and overall production. The area of Cassinazza was renovated without increasing the built up area, which was made more compatible with the historic agricultural landscape.

Delegates had the opportunity to see the cultivation of land that has been progressively implemented since 1996, creating more than 107 hectares of wetland, 78 hectares of woods, 65 hectares of reforestation and 50 hectares of meadows. Dr. Natta explained that, every year, 4,000 tons of paddy rice, 9,000 tons of silage maize and 300 tons of soy are produced.

### **SESSION 1: ORGANIC WASTE AS A RESOURCE FOR MEDITERRANEAN SOIL**

**Hon. Nevena Stojanovic (Serbia)** opened the first session of the meeting and thanked Dr. Natta for inviting PAM to hold a meeting at Cassinazza. She stressed the main PAM objective to raise awareness, promote the best practises and facilitate the exchange between the Mediterranean parliaments. Hon. Stojanovic mentioned the commitment of PAM MPs on Environment, underlining that 2015 must be the year of a major change for climate change, with the COP21 to be held in Paris expected to reach a collective, shared and legally binding agreement on emissions reduction. Hon. Stojanovic then gave the floor to Eng. Luigi Vinci, President of the Order of the Italian Engineers and President of the Superior School for Professional Training of the Italian Association of Engineers.

**Eng. Luigi Vinci** gave a brief presentation of the Order of Italian Engineers and then stressed the role of the newly established Superior School for Professional Training of the Italian Association of Engineers to increase the cooperation at the international level and facilitate cultural and educational activities, such as internships in international companies, both private and public. He focused on the importance of education, particularly in the field of Environment, which requires major informative campaigns in order to raise awareness among the civil society.

**Prof. Fabrizio Adani**, Professor of Agricultural and Environmental Science at the University of Milan, started his intervention by saying that there is the need to feed a constantly increasing population, by using the available soil. He underlined the importance of maintaining the soil conditions in a good state in order to ensure soil fertility. If the soil loses fertility, you need fertilizers, and therefore

money, to keep its fertility at an appropriate level. He also stated that the Mediterranean soil is not in a good condition: in Italy, for example, soil fertility decreased by 50% compared to 15 years ago. In addition, Prof. Adani stated that renewable fertilizers are more complete than mineral fertilizers, because they have more nutrients and they also contribute to the reduction of the environmental impact in terms of emissions. He concluded by expressing the concept of circular economy, in which organic waste is used to provide essential nutrients for the soil, thereby increasing its fertility.

In the **debate** that followed, **Sen. Marwan Alhmoud (Jordan)** thanked the organizers for the hospitality and asked how the model of the Neorurale could be transferred to other countries. **Dr. Natta** answered that transferring this model is possible, underlining that there is a strong need for legislation. Such a project needs clear regulations to be put in place, and in many countries there is a lack of precise legislation in this sector. He also added that, in some other countries, rules are present but not implemented, which results in discouraging companies, operators and investors. Dr. Natta added that waste is not a problem, provided that you deal with it locally, and through technology and simple mechanisms such as joint ventures.

**Amb. Sergio Piazzi**, PAM Secretary General, asked whether something is already in place at the EU/EC level, in order for PAM to proactively contact other institutions in order to join forces and work together on this issue. In his answer, **Prof. Adani** said that the role of politics is essential. First and foremost, it is fundamental to raise awareness: citizens need to be informed and aware that each of them, play a vital role to maintain soil fertility. In Cassinazza, rice is grown, while just 100 km from Cassinazza you can farm animals with similar projects. He insisted that we have the technology, and that we just need to implement projects of this kind. At the EU level, some legislation is in place. Thanks to this, in all EU countries there is an obligation to recycle waste. He then referred to the Horizon2020 initiative, the objective of which is the creation of a circular economy. He concluded reiterating that the technical part is present, and we are now in the stage for policies and education campaigns to be implemented.

**Hon. Joseph Sammut (Malta)** remarked that what is being put forward goes diametrically opposed to the present situation, underlining that many farmers had to give up their live stock and close down their farms because of problems related to the building of pits for the manure. The reason behind this requisite was specifically that of ascertaining that no nitrates seep into the water table. What is now being proposed is that of giving back to nature what has been taken from it. That is, animal manure and all other organic waste to be processed and returned to nature. In his reply, **Prof. Adani** mentioned that the EU legislation dates back to 1991. He added that nowadays, technology allows to minimize the negative impacts and therefore allows substantial benefits in using manure as nutrient for the soil. After underlining the relevance of the contamination of the water table and the high level of nitrates, he affirmed that European legislation needs to be urgently updated to reflect the technological progress made since 1991. Prof. Adani concluded by saying that there is a new proposal for reform on the table, but it lacks political support.

## **SESSION 2: USE OF ORGANIC WASTE FOR FOOD SECURITY AND ENVIRONMENT**

**Hon. Mounia Rhoulam (Morocco)** chaired the second session of the meeting. In her introduction, she underlined that the Mediterranean region is particularly sensitive in terms of food security and environment, due to its particular characteristics. She also stressed that food shortages might stress existing societal tensions. Therefore, she said that we need to use all possible resources to ensure food security in the region, and using organic waste for this purpose is a great tool. Hon. Rhoulam then gave the floor to Eng. Leonardo Palumbo, from the General Division on Environment of the Regional Government of Emilia-Romagna.

**Eng. Leonardo Palumbo** started his intervention by recalling the European Waste framework Directive 2008/98/EC, which set the basic concepts on waste management. According to the Directive, the process starts by trying to minimize waste; then, citizens should reuse, recycle and, if possible, also use it to produce energy. The minimal residual part will be, eventually, disposed. Eng. Palumbo noted that one of the main ways to promote waste recycling is the agricultural reuse of organic waste after being properly treated, i.e. through anaerobic digestion or composting. This practice in agriculture would also represent a viable solution to the problem of progressive soil depletion.

Eng. Palumbo underlined that, while in the past, at a farm level, the nutrients cycle was a closed cycle (they were produced and consumed on the spot), the heavy urbanization and industrialization modified that cycle, which became open, due to the massive production of solid waste and the creation of Wastewater Treatment Plants (WWTP), which have a consistent impact on environment. Eng. Palumbo added that, in order to close again the natural nutrients cycle, clear rules need to be defined, in order to encourage projects and virtuous practices and to safeguard public health and prevent pollution. He concluded his intervention by saying that a comprehensive regulatory framework including all organic waste, and not only sewage sludge, is needed. From this point of view, he encouraged the EC to quickly approve the End of Waste criteria for biodegradable waste, which foresees: 1) the recovery of biodegradable waste by composting and/or anaerobic digestion; 2) free circulation on the market of compost that meets defined standards; 3) use on soil without subsequent control.

Following the presentation, the **debate** was opened. **Hon. Mohamed Laid Bibi (Algeria)** mentioned that in Algeria there is no regulation on this sector, and asked whether it would be feasible for Algeria and the other countries of the southern shore of the Mediterranean to sell their organic waste to entities such as Neorurale. **Eng. Palumbo** answered that this process would be complicated and anti-economical. Complicated because for example, in Italy, there are laws which forbid waste transfer from a region to another, and therefore importing waste was not an option. Anti-economical because the cost of transport would make the total cost of the process significantly increase. In addition, the nature of the organic waste makes it necessary for it to be processed in a very short time.

**Hon. Christos Dimas (Greece)** asked the keynote speaker some indications on what can be done at the local and national level. He also asked how to deal with the skepticism of civil society in connection with waste. **Eng. Palumbo**, in his answer, stated that there are EU rules to be respected at the national level. Regarding the local level, he mentioned that the Emilia-Romagna region is industrializing the re-use of waste and is also planning to establish a centre dedicated to plastic waste. With regards to civil society, he said that it can be involved in the process, by setting up frameworks which include representatives of the civil society, in order to inform them (raise awareness) and to involve them in the decision-making process on how to tackle the issue, particularly at local level.

#### **WRAP-UP AND CONCLUDING REMARKS**

Hon. Rhoulam closed the debate and gave the floor to **Prof. Raffaello Cossu**, Professor at the University of Padua, for the wrap-up considerations. Prof. Cossu listed the most important topics that were raised during the day:

1. **Soil is not renewable**, and therefore we need to take good care of it, in order to keep its fertility at a level that satisfies the demands of a constantly growing population;
2. Each stage of production generates emissions, therefore **it is fundamental to put in place mechanisms to reduce emissions and to minimize the waste**, such as recycling, re-use of products etc;



3. Waste in general, and **organic waste** in particular, **is to be considered a “zero km” resource**. It can be an added value if processed and used in the same place where it is collected. Therefore, the role of local authorities is crucial in this process;
4. **Soil organic matter (SOM) is a key factor for soil fertility**. When SOM decreases, also the productivity decreases. Therefore, the use of the organic waste to provide nutrients to the soil is a perfect solution to maintain the fertility of the soil;
5. **Organic fertilizers are better than chemicals fertilizers** because they are more complete in terms of nutrients and contribute in controlling global climate change, by generating carbon sinks. In addition, the cost of chemical fertilizers accounts for 25% of the final cost of the goods;
6. **We need to reduce as much as possible the waste that ends up in landfills**. The impacts of landfills are not sustainable, and most of their impacts (odors, emissions, noise, as well as air, soil and water pollution) are related to organic waste;
7. **Legislative action is needed urgently**. EU regulations need to be adapted to the current scenario, national laws need to be harmonized and simplified in order to allow the local administrations to handle waste management in the most suitable way. In connection with EU policies, the approval of the “End of Waste criteria” for biodegradable waste would represent a major step ahead in this sector;
8. In order to control emissions, **it is necessary to minimise raw material extraction and indiscriminate use of soil and to maximize recovery**, recycling and reuse of secondary raw materials.

**Amb. Piazzi** thanked the keynote speakers for their presentations, and for having stimulated the debate among MPs. He informed the participants that the Parliamentary Assembly of the Mediterranean will continue its work on this crucial topic, and will work closely with all relevant institutions in order to ensure a harmonised approach and to reach a comprehensive legislative framework that allows all the stakeholders to contribute to the process. This activity will be implemented through the PAM Panel on Trade and Investments in the Mediterranean (Sustainable Development Group) and also through the PAM Academic Platform, due to the great contribution that the academic sector could and should give in addressing the challenge of waste management. He then referred to the forthcoming activities of the 2<sup>nd</sup> PAM Standing Committee, and mentioned a meeting on Tourism, to be held tentatively in November 2015 in Malta, as well as the participation of the Parliamentary Assembly of the Mediterranean to the World Climate Change Conference (COP21/CMP11) to be held in Paris in December 2015.

**The meeting was officially closed.**

After the working sessions, **delegates visited the Certosa of Pavia**, a monastery that was once located on the border of a large park belonging to the Visconti family of Milan, of which today only scattered parts remain. It is one of the largest monasteries in Italy.

### **12 JUNE: VISIT TO THE EXPO 2015**

The visit to the EXPO 2015 was hosted and organized by CNH Industrial and included a visit to the New Holland Agriculture’s ‘Sustainable Farm Pavilion’.

In the morning, a **Memorandum of Understanding was signed between PAM and the Inter Academic Group for Development (GID)**, whereby the two organisations will step up their collaboration on regional development issues through joint initiatives and the exchange of academic experts and parliamentarians in order to create greater synergies among the stakeholders and the

beneficiaries of better standards of living in the Mediterranean region. The agreement was signed by Amb. Sergio Piazzi, PAM Secretary General, and Prof. Francois Guinot, President of the GID.

Following the signing of the MoU with the GID, H.E. Alberto Leoncini Bartoli, Ambassador of the Sovereign Order of Malta (S.O.M.) to the Holy See, bestowed on Sen. Francesco Maria Amoroso, PAM Honorary President, the Decoration of the Order pro Merito Melitensi of the S.O.M.

The official programme of the event finished at 1.30 pm. The rest of the afternoon was designated for each delegation to visit the EXPO and their national pavillions.