

## Rooting knowledge for feeding the planet

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# Part One

## Rooting Knowledge for feeding the planet

**Abstract.** Feeding Knowledge is a strategic initiative of Expo Milano 2015, the Universal Exhibition hosted by Italy from May through October 2015, whose claim was “Feeding the Planet. Energy for Life”. The Programme has been developed, co-funded and implemented between 2012 and 2015 by CIHEAM (Centre International de Hautes Etudes Agronomiques Méditerranéennes – Bari Institute) and Politecnico of Milano - METID (Metodi e Tecnologia Innovativa per la Didattica). The Programme, which contributed to building up Expo Milano legacy, dealt with the importance of cooperation on research and innovation for food security in the Mediterranean. “Feeding Knowledge” constitutes an interesting model for testing innovative knowledge sharing and co-creation methods through the involvement of all the stakeholders of the food security “innovation chain”, from farmers to extension services, to academia and decision makers. Thanks to the support of the on-line ecosystem [www.feedingknowledge.net](http://www.feedingknowledge.net), the Programme has developed a mechanism for sharing needs, problems, knowledge and best practices aimed at enabling research to provide concrete solutions to local problems. This paper presents “Feeding Knowledge” concept, philosophy and main results, which largely contributed to the creation of an effective knowledge system in the Mediterranean.

**Keywords.** Knowledge sharing – Food security – Research and innovation – Expo Milano 2015.

## Enraciner la connaissance pour nourrir la planète

**Résumé.** *Feeding Knowledge est une initiative stratégique lancée par Expo Milano 2015, l'exposition universelle qui s'est tenue à Milan, de mai à octobre 2015, autour du thème “ Nourrir la Planète. Energie pour la Vie ”. Le programme, mis au point, cofinancé et réalisé entre 2012 et 2015 par le CIHEAM (Centre International de Hautes Etudes Agronomiques Méditerranéennes – Institut de Bari) et le Politecnico di Milano - METID (Metodi e Tecnologia Innovativa per la Didattica), a contribué à jeter les bases de l'héritage permanent de l'exposition.*

*L'objectif était de démontrer l'importance de la coopération pour la recherche et l'innovation en matière de sécurité alimentaire dans la région méditerranéenne. Feeding Knowledge représente donc un modèle intéressant pour tester les méthodes de partage et co-crédation de la connaissance innovante et ce, à travers la participation de tous les acteurs de la “chaîne de l'innovation” de la sécurité alimentaire, depuis les exploitants aux services de vulgarisation, en passant par le milieu académique et les décideurs. Grâce au soutien de l'écosystème en ligne [www.feedingknowledge.net](http://www.feedingknowledge.net), le programme a développé un mécanisme de partage des besoins, des problèmes, de la connaissance et des meilleures pratiques pour permettre à la recherche d'identifier des solutions concrètes aux problèmes locaux. Dans cet article, nous allons parcourir le concept, la philosophie et les résultats les plus importants de Feeding Knowledge qui ont largement contribué à la création d'un système de connaissances efficace au niveau de la région méditerranéenne.*

**Mots-clés.** *Partage de la connaissance – Sécurité alimentaire – Recherche et innovation – Expo Milano 2015.*



# Rooting Knowledge for feeding the planet

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MILANO 1863  
MEDIT

## I – Feeding Knowledge Programme

**Feeding Knowledge** is the strategic programme on food security promoted by Expo Milano 2015 which is part of the legacy of the Universal Exposition. This initiative, launched in 2012, is attuned to Expo's theme "*Feeding the Planet. Energy for Life*" which is a claim for sustainable development to the whole world.

### WHY FOOD SECURITY

*Choosing food security as the main theme of the "Feeding Knowledge" Programme is motivated by several reasons many of which are linked to the efforts made by the international community to fight hunger. Despite the commitments of the last decade, these efforts have not allowed to guarantee food security, which is one of the main priorities for the international cooperation notably in the light of the projected increase in the world population.*

*According to the latest FAO estimates, some 795 million people are undernourished in the world that is one in nine people on earth. The majority of these people live in developing countries where 12.9% of the population is undernourished. These facts are not encouraging especially if account is given to the goal set on the occasion of the World Food Summit in 1996 (400 million undernourished people in 2015).*

*Moreover, the Final Declaration of the World Food Summit on Food Security in 2009 pledged the importance and the central role of food security within international cooperation. The Declaration identified some goals and principles for food security, some of them in tune with the "Feeding Knowledge" Programme:*

- *Investments in development plans elaborated by developing countries.*
- *Role of research and access to knowledge at national, regional and international level to guarantee food security for all.*
- *Produce statistics, studies and forecasts on food security whose results serve as robust bases for national agricultural policies and food strategies.*
- *Assign a strong role to the multilateral system that shall operate through greater efficiency, promptness, coordination and efficacy of global institutions.*
- *Ensure a substantial commitment by the States in order to increase investments in agriculture, food security and nutrition, allocating resources for multiannual plans.*

Feeding Knowledge Programme was worked out, co-funded and run by **CIHEAM Bari** (Centre International de Hautes Etudes Agronomiques Méditerranéennes – Mediterranean Agronomic Institute of Bari) and by Politecnico di Milano - **METID** (Metodi e Tecnologie Innovative per la Didattica). Its task is to disseminate data and information that may help combat hunger in the world, to share the best practices which have had a positive impact on food security, to create networks and promote collaboration at international level across the main players of the knowledge chain (policy makers, scientists, businesses, civil society, etc.). The main aim is to share and develop knowledge based on the needs of territories avoiding the “waste of knowledge”, to communicate using innovative methodologies and technologies, to build the capacity of human resources and reduce food insecurity in the world.

The philosophy of Feeding Knowledge is based on the setting up of a virtuous knowledge chain that takes into account the needs of areas and communities, identifies effective research solutions and provides innovative methods to be transferred to the final beneficiaries.

The activities of Feeding Knowledge cover **five research thematic priorities**:

- Sustainable management of natural resources
- Qualitative and quantitative enhancement of crop products
- Socio-economic dynamics and global markets
- Sustainable development of small rural communities in marginal areas
- Food consumption patterns: diet, environment, society, economy and health.

The **target area** of the Programme includes **10 Mediterranean Countries**: Italy, Albania, Algeria, Palestinian Authority, Jordan, Lebanon, Macedonia, Morocco, Tunisia, and Turkey.



**Countries involved in the Feeding Knowledge Programme**

The choice of this geographical area is not only linked to “food priority” but also to political and scientific considerations since the Mediterranean area hosts about 37 million undernourished people:

- a) The priority interest of the EU policies in the area and the relevant investment programmes;
- b) The high socio-economic vulnerability of the area, as shown by the sudden rise in the price of food commodities between 2007 and 2010;
- c) Availability of a qualified research system and awareness of competent political institutions;
- d) A consolidated network of institutional relations and the strong will of countries towards international collaboration and cooperation with the EU supported by the European Neighbourhood Policy;
- e) A community of high-level young researchers who may participate in international research networks and mobility programmes.

During its three years of activities, the project has pursued the following results:

- Setting up of the **Feeding Knowledge Network** with more than **3000** members among researchers, experts, research organizations and bodies, which share the results of their own research and experience with special attention to innovation and transfer of technologies.
- Setting up of an **International Technological Platform** ([www.feedingknowledge.net](http://www.feedingknowledge.net)) in support of all the activities of the Programme and Network with an open and collaborative database of about **1000** research works and with more than **900** sources on food security.
- Scientific coordination and scheduling of **two cycles of on-line seminars** delivered by international experts to the benefit of the Network members.
- Participatory elaboration of **5 White Papers** which provide the state of the art of research and innovation in the field of food security in the Mediterranean area and recommendations on future research avenues.
- Identification of 10 national **“Local Points”** at the Ministries of Agriculture of the countries involved; their role is to back up the Programme activities at local level, to collect the needs of the local operators and identify methods and strategies for the transfer of knowledge, in collaboration with Agricultural Extension Services.
- Organization of **training and knowledge-sharing** activities to train facilitators at the service of Local Points and to strengthen Extension Services in Agriculture through innovative methods and tools.
- Support to Expo Milano 2015 International Call on **Best Sustainable Development Practices for Food Security** and collection of **786 applications**, available in the “Best Practices” section of the Platform.
- Drawing up of a **Policy Paper** on the creation of a knowledge system for food security in the Mediterranean area, through a participatory path of more than two years with the involvement of experts and representatives of more than 30 institutions working in the field of cooperation, research and food security.

## II – Methodology and philosophy of the Programme

The success of Feeding Knowledge results from a methodological model developed by CIHEAM and Politecnico–METID, elaborated and optimized based on the feedback from all the users.

The methodological model is grounded onto three pillars, which have allowed to achieve the objectives of Feeding Knowledge: the **“principles”** which inspired all actions; the **“channels”**,

that is the pathways along which the project itself was carried out; the “**activities**” carried out in the four years of the Programme.

The principles upon which Feeding Knowledge activities are based describe its “philosophy”:

### 1. LOCAL NEEDS DRIVEN



The needs of specific geographical areas were the starting point for further thinking and planning: they are the engine of scientific research that must provide answers to needs, and of the interaction among the network's stakeholders who look for applicable solutions. Problems may be solved by investigating their root causes: an in-depth survey of the farmers 'need scan not result from superficial interactions but rather from the identification of the ample range of needs of agricultural areas.

### 2. OPENNESS



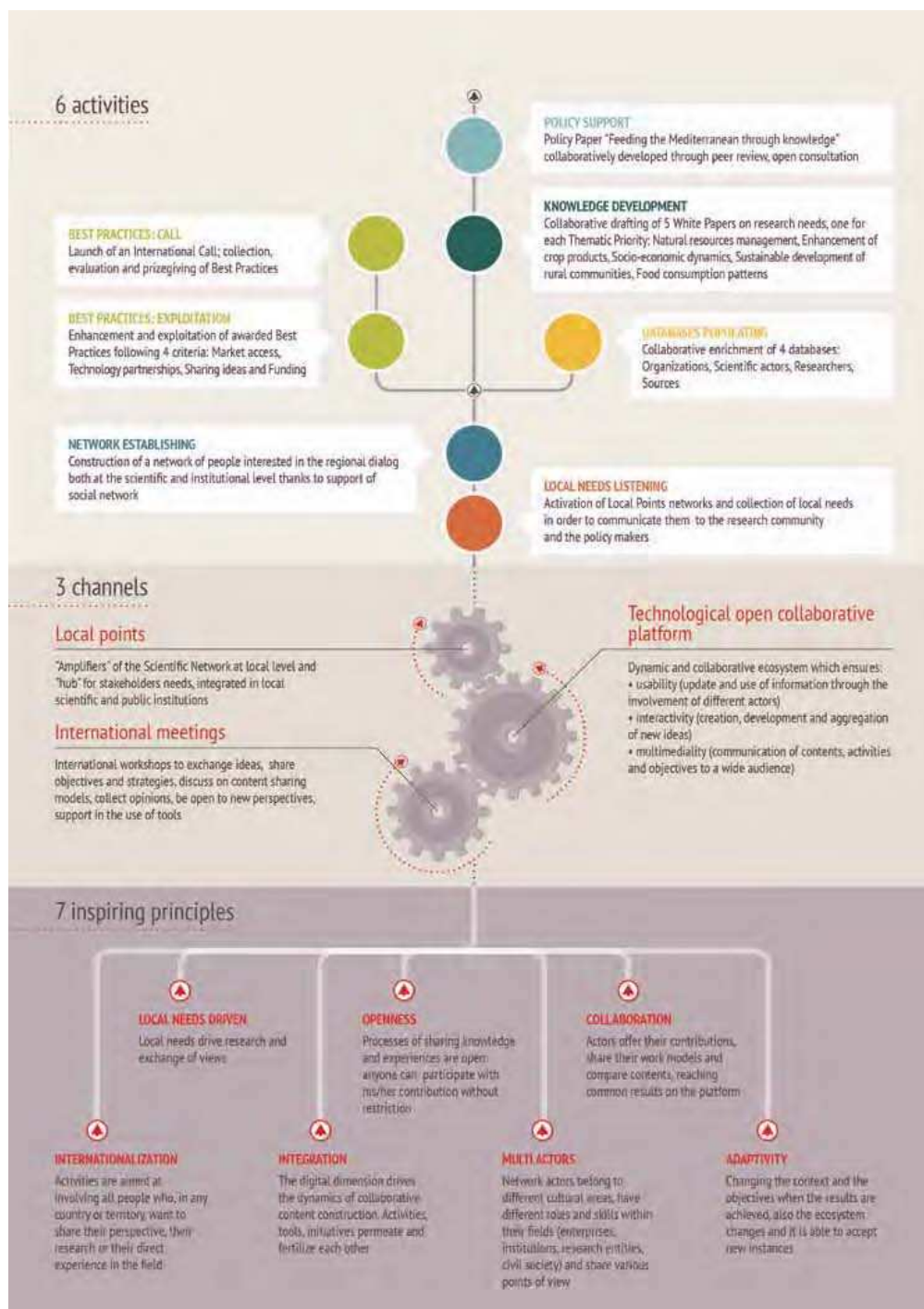
There are no limits to participation: anyone can register in the [feedingknowledge.net](http://feedingknowledge.net) platform, participate in the periodical *open consultation*, and share the experience through communication tools. Databases are open along with the sharing of knowledge and experience: anyone is free to participate and contribute without any access restriction to all that is published by others and discussed in the forums. The technical board controls only the thematic relevance of the users inputs before they are made available. *Openness* guarantees the sustainability of *knowledge sharing* processes and of represented approaches so that the knowledge made available by Feeding knowledge might ignite the development of new knowledge.

### 3. COLLABORATION



Key results have been achieved thanks to the collaboration of participants through the three channels offered by the project (Technological Ecosystem, Local Points, and Meeting). Collaboration has been one of the most crucial levers to motivate and involve network's members; they have been more aware of their role and contribution and more active towards mediation and thinking. The users of the system offer their contribution in terms of scientific publications, report critical situations, share their direct experience and discuss working arrangements, compare contents and achieve results all together.





## Feeding Knowledge model



#### 4. INTERNATIONALIZATION

In the organization of all the processes and activities, special attention is paid to the involvement of representatives from the target countries and to the international context; this allows to guarantee a constant exchange and the development of networks that may recognize and enhance the capacities in each context.

#### 5. INTEGRATION

The three channels of participation offered by the programme (Technological Ecosystem, Local Points, and Meetings) have not been developed separately but constantly integrated and enhanced. The technological ecosystem is the core of activities of collection, creation and dissemination of knowledge; it has been propelled by the dynamics of knowledge creation activated by the Local Points and developed on the occasion of international meetings promoted by the programme.



#### 6. MULTI ACTORS

The stakeholders involved in the Programme's activities belong to different cultural areas, have different roles in their relevant company, institution, research body or society and provide for different skills and viewpoints.

The Policy Paper is the result of recommendations suggested by international organizations and by Europe; they have been compared with those provided by the international scientific community, the text has been submitted for review to the whole Feeding Knowledge network through an *open consultation*. Several stakeholders, of different origin, culture, language and skills have contributed to the creation of the Policy Paper.



#### 7. ADAPTIVITY

The ecosystem is modified in order to respond to the changing needs of the socio-political scenario. It thus enables to respond to the new requirements, optimize crucial processes and support the achievement of new goals.

Interaction channels, through which activities have been carried out, are both virtual and physical. The technological ecosystems, the network of the ten Local Points and the international meetings have constantly been integrated. The three channels have backed up and made the actions of the Programme possible through their successful integration.

*The open and collaborative technological ecosystem* (made up of the dedicated platform and of its social media) is the technological component of the programme that has climbed up over time thanks to the development of its numerous sections; it has prompted the participation of users belonging to different areas, institutions and cultures.



**Map of Local Points**

*The Mediterranean institutional network made up of ten national Local Points*, integrated into the local institutions such as Ministries of Agriculture, National Research Councils, universities, has provided support to the Programme's activities at local level, listened to the needs of local operators and identified methods and strategies for the transfer of knowledge in collaboration with Extension Services.

*International Workshops and conferences*, with the participation of international experts, representatives of Mediterranean countries, have provided opportunities of effective debate, design and planning, sharing of ideas and collaboration.

The Programme's activities have been carried out through the three channels on the basis of the principles of Feeding Knowledge. They may be ascribed to six main types:

1. *Listening to the local needs:*

The starting point for each activity, based on the ability to listen to and understand problems, going beyond the mere transfer of solutions and top-down approaches. Stakeholders' needs have been collected by means of *an online survey* on the platform co-designed by the representatives of the Local Points.

2. *Creation of the Network:*

Setting up of a network of people sharing the same interest in the regional dialogue on research, innovation at scientific and institutional level, who have contributed to the identification of common and specific issues and shared their knowledge through the platform.

3. *Population of Databases:*

With the publication of research by their authors and the reporting of authoritative sources and organizations working in the field of food security. The 5 databases are loaded on the Feeding Knowledge platform by the users: each user may load his/her scientific research or refer to it if the *pdf* file may not be loaded for copyright reasons; his/her profile and that of his/her organization; report the most authoritative sources and participate in the International Call for Best Practices with his/her projects.

#### 4. *Knowledge development:*

Through a deeper learning about the 5 thematic priorities and writing of the 5 White Papers. Knowledge development has been based on a collaborative bottom-up approach through the identification of the real needs of target countries strengthened by the study of the requirements of the research and political system.

#### 5. *Collection and dissemination of the Best Practices:*

Of significant sustainable development initiatives carried out in the last 10 years. The steps of this two-year activity are reported here below:

- a) Writing of the Call
- b) Creation of the form
- c) Launch of the Call
- d) Support to users and collection of applications
- e) End of the call and evaluation of applications in three steps
- f) Enhancement of the winning Best Practices

#### 6. *Support to the Policy*

Through the writing of a paper reporting the recommendations of experts addressed to decision makers. The Policy Paper writing started in February 2014 when the representatives of Local Points, ministries, international institutions and organizations of Mediterranean countries met to discuss and share ideas about a preliminary draft based on the recommendations provided in the 5 White Papers by the scientific network of the programme and on the results of an online survey on the food security needs made involving 200 *stakeholders* across the Mediterranean region.

### III – Knowledge: co-creation and transfer

Starting from the philosophy and the model described above, which are at the basis of the Programme activities, Feeding Knowledge has tested the setting up of a chain based on the co-creation and transfer of knowledge.

To this end, an experts' Network was set up; its tasks are as follows:

- Identification of research priorities on food security and on key topics for which cooperation among researchers and knowledge sharing may contribute to reducing food insecurity in the world.
- Identification of the main institutional and scientific players at national, regional (Mediterranean) and international level who respond to the priorities on food security.
- Creation and development of an international network of experts, and availability of the necessary tools for remote collaboration and sharing of ideas, opinions and knowledge.
- Definition of technological and functional characteristics of the Technological Platform [www.feedingknowledge.net](http://www.feedingknowledge.net): *ahubof* meetings, collaboration, sharing and knowledge.
- Transfer of knowledge to the National Advisory Services and *stakeholders'* associations, in order to promote direct development and bring together the "*demand*" and "*supply*" of knowledge.

The five **White Papers** produced by the Network provide an overall view of the state of the art of specific issues. They also suggest interesting prospects for the development of research and identify innovative solutions to reduce food insecurity. The key messages of the papers are reported hereinafter:

#### PRIORITY 1: SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

- ✓ Improvement of land and water use efficiency in agriculture
- ✓ Development of new crops that may adapt to climate change and protect bio-diversity

#### PRIORITY 2: QUALITATIVE AND QUANTITATIVE ENHANCEMENT OF CROP PRODUCTION

- ✓ Attention paid to the efficiency of Integrated Pest Management and organic farming systems following an eco-functional approach
- ✓ Pre- and post-harvest control of mycotoxin contamination

#### PRIORITY 3: SOCIO-ECONOMIC DYNAMICS AND GLOBAL MARKETS

- ✓ Enhancement of the availability of quantitative and qualitative information as precondition for appropriate analysis policy
- ✓ Strengthen the capacity to analyse the impact of alternative policies at national level

#### PRIORITY 4: SUSTAINABLE DEVELOPMENT OF SMALL RURAL COMMUNITIES IN MARGINAL AREAS

- ✓ Research on the value chain and on the development of the “non-farm” sector with added value for the rural communities
- ✓ Research on systems and technologies of small land owners. Research is designed to provide guidance on the basis of the specific characteristics of small land owners, of their needs and opportunities through a long-term agro-ecological approach

#### PRIORITY 5: FOOD CONSUMPTION PATTERNS: DIET, ENVIRONMENT, SOCIETY, ECONOMY AND HEALTH

- ✓ Assessment of the sustainability of the current food patterns and diets from the environmental, economic, social, cultural and health point of view
- ✓ Discuss and tackle the causes, extent and economic and environmental impact of food waste in the Mediterranean region

After the elaboration of contents and the collaborative creation of knowledge, the Programme has focused its attention on the transfer of knowledge through National Extension Services, which play a pivotal role in the Euro-Mediterranean area by applying the solutions identified by research works.

The main activity allowed launching a dialogue among the extension services to focus on the working methods, problems and needs of operators. The extension officers of ten countries in the target area of the programme took part in a **workshop** in which **they** identified innovative models, methods and instruments of technological transfer. The Orientation Paper came up with some noteworthy recommendations such as the importance of promoting international cooperation initiatives in support of national extension services, the need to develop national extension strategies on food security, the potential offered by ICT to make the work of extension officers more efficient and to involve the youth in agriculture more actively.

The ten **Local Points** have played an outstanding role in the Network development and support to the National Extension Services. The **Local Points** are constituted by the local offices at the

Ministries of Agriculture of the countries involved in the Programme; two officers run them; they are the “brokers” of knowledge whose task is to involve all the players at national level namely farmers, civil society, scientific world and academia, national and local institutions. Local Points coordinate all the activities of public consultation with the local stakeholders on the local needs, which are then shared with the members of the scientific network so as to identify relevant research and innovation solutions.

Thanks to these activities, the Programme has initiated a **knowledge chain** on food security in the Euro-Mediterranean area dealing with the identification of local needs, dialogue among researchers, identification of solutions and tools for their application.

## IV – Technological Ecosystem

The technological dimension of Feeding Knowledge is represented by the environments which have contributed to the creation of an “ecosystem” made up of the platform and of the integrated tools. It links the key processes going from the identification of needs to their transformation into themes that might stimulate the world of research and institutions; from solutions to their enhancement; from knowledge sharing to the creation of new knowledge. This also explains the integration of the main social networks into the platform (Facebook, Twitter, and YouTube) that have amplified the project message and extended the primary target.

The platform, with new sections and instruments, has been the virtual place of exchange and comparison, a group work area and the tool to disseminate results.



### Sections of the Platform.

The platform is subdivided into **six sections**, which are the six cornerstones of the programme:

- **E-COLLABORATION** is the area of exchange and elaboration of contents through iterative processes between participants having different cultural backgrounds and objectives. E-Collaboration strategies have enabled to reach individuals independently of their geographical location: they have been crucial in the setting up of the network and in the publication of the five White Papers and of the Policy Paper.



## e-Collaboration Network

Feeding Knowledge Network activities are developed through five research and innovation Priorities. Each Priority is made up of a network of researchers working on five white papers through a cross revision process. The main outcomes of the papers, together with the needs of target countries' stakeholders for food security, have been collected and systematized in a programmatic Policy paper.



### POLICY PAPER

#### Feeding the Mediterranean through knowledge

"Feeding Knowledge" Programme is a voluntary initiative for the permanent legacy MEDAFRUM (EU-LEADER initiative) promoting the exchange of knowledge and information for effective knowledge sharing and for the development of the Mediterranean region. The Policy Paper has been drafted with a participatory approach in a 3 years knowledge process that has involved more than 100 stakeholders and institutions across the East-Mediterranean region. It is the first outcome of the Policy Paper in September 2015. Feeding Knowledge is willing to reach a broad and collaborative network of experts, which is a collaborative Policy.

ENGLISH / FRENCH / ITALIAN

### e-Collaboration.

- **DATABASES** are the archive of the shared knowledge. They include scientific paper, sources, food security organization and scientific players: they are online, open and collaborative.

### Database.

- The **BEST PRACTICES** section is designed to promote the International Call, the collection of applications through the online form, their assessment and enhancement in terms of market exploitation. Initiatives, brochures and information are available in this section.

**FEEDING KNOWLEDGE** [Create Account](#) [Sign In](#)

[Collaborations](#) [Summer](#) [Best Practices](#) [Events](#) [Local Policies](#)

[Best Practices](#)

## Best Practices

The International Call for Best Sustainable Practices on Food Security has been addressed to initiatives carried out in different parts of the world, focused on policies, technologies, know-how, services and products related to the theme of Expo Milano 2015 "Feeding the Planet, Energy for Life".

**VIEW ALL THE ADMITTED BEST PRACTICES**

### Best Practices Market Exploitation Support

The Best Practices Market Exploitation Support features a follow up project for selected market-oriented projects in view of the 2015 deadline. The project aims to provide market support, the evaluation will evaluate a range of best practices in order to identify the best 100 projects to be implemented which market-oriented projects will then be selected and funded to develop their business, during a 12-month period.

[CONSULT THE 2014-2015 MARKET EXPLOITATION SUPPORT](#)

### Awarded Best Practices Video

From 10th April to 10th June, the winners of the 2014-2015 Best Practices Video Competition were announced. The winners of the competition were announced in 2015. The winners of the competition were announced in 2015. The winners of the competition were announced in 2015.

[WATCH THE VIDEOS](#)

[Download the 2014-2015 Best Practices Video Competition](#) [Download the 2014-2015 Best Practices Video Competition](#) [Download the 2014-2015 Best Practices Video Competition](#)

### Movie winners

<a href="#">KATIPALA</a>	<a href="#">ITALY</a>	<a href="#">KEDHALLA</a>	<a href="#">WARR</a>	<a href="#">TANGHUA</a>

**Best Practices.**



- **EVENTS** section brings together the events promoted by the Programme, national and international organizations and partners in order to encourage exchange and meetings.

## Events

At the Conference Center of Expo Milano 2015, the week from the 7th to the 11th of July was dedicated to Best Sustainable Development Practices with more than 600 participants from all over the world: let's take part in this wonderful week and consult the presentations shown during the events.

**DISCOVER BSDPS WEEK**

### Next Events

**FROM FEB 19<sup>th</sup> TO MAR 3<sup>rd</sup>**  
**AGRORES 2016 - 5TH INTERNATIONAL SYMPOSIUM ON AGRICULTURAL SCIENCES**

Here you can see the event:

AGRORES 2016 - 5th International symposium on agricultural sciences The second notice of the 5th INTERNATIONAL SYMPOSIUM which will be held from 19 February to 03 March 2016 in Banja Luka, Republic of Srpska, Bosnia and Herzegovina.

[Download](#)

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**FROM FEB 19<sup>th</sup> TO MAR 3<sup>rd</sup>**  
**THE CONSUMER GOODS FORUM - GLOBAL FOOD SAFETY CONFERENCE**

### Latest events

**FROM FEB 15<sup>th</sup> TO FEB 17<sup>th</sup>**  
**UN FOOD AND AGRICULTURE ORGANIZATION (FAO) INTERNATIONAL SYMPOSIUM: "THE ROLE OF AGRICULTURAL BIOTECHNOLOGIES IN SUSTAINABLE FOOD SYSTEMS AND NUTRITION"**



#### Events .

- **LOCAL POINTS** refer to the activities of local development in the Programme. For these activities, e-Collaboration tools have been used at various levels: from the old forum to the latest tools to design and manage questionnaires online, to surveys within the social networks.

## Local points

Local Points play a key role in Feeding Knowledge Program, acting as "amplifiers" of the scientific Network at the local level and as a "hub" for stakeholders needs; each local point employs 2 facilitators (young scientific experts).

ACCESS LOCAL POINT  
AREA



Supporting the enlargement of the Euro-Mediterranean scientific network at the local level through the identification and invitation of researchers, experts and organizations



Keeping contacts with National Extension Services/research institutions and stakeholders at the local level



Identifying technical/scientific contents, data and information to be uploaded on Feeding Knowledge Platform database



Promoting the debate on white papers, stimulating contributions from local researchers and experts (in-line "discussion forum" on the web Platform)



Mapping main countries' issues and problems related to the 5 priorities on food security on the basis of the collection of scientists/experts and stakeholders inputs



Supporting the activities related to the call for Best Sustainable Development Practices on food security

### Local Points.

The integration of **Social Networks** (in particular Facebook, Twitter and You Tube) has boosted the communication potential, enabling to carry essential contents and the most important concepts with an informal language and to set up new links between stakeholders and the project.

The communication strategy is based on weekly editorial plans, which have kept the interest of users high: 60% of contents regard the programme (live events, news, video, and info graphs, contents from the Policy Paper or the White Papers, Best Practices). Other publications report news and events on food security promoted by other organizations. Although these themes are highly specialized and target experts, many users have been involved: 1000 followers on Twitter, 2000 fans on Facebook. Twitter followers are mainly institutions.

The analysis of data on the use of the portal by the users provided interesting results. The number of users active on the platform increased with the activity of collaborative writing of the five White Papers (March 2013) and with the organization of the webinars on the priorities of research for food security (January – July 2013). The year 2014 was characterized by the promotion of the call for the Best Practices and collection of applications: the highest numbers of users were achieved during the closing of the call (October 2014) and of the publication of results. June and July 2015

were characterized by events on the Best Practices; during the last phase, users were involved in the activities of Market Exploitation and in the open consultation on the Policy Paper.

The platform has been consulted everywhere in the world. As regards the number of accesses, the first 25 countries after Italy are:

- |                  |                   |
|------------------|-------------------|
| • United States  | • Jordan          |
| • France         | • Spain           |
| • Tunisia        | • Egypt           |
| • Morocco        | • Mexico          |
| • Turkey         | • Brazil          |
| • Algeria        | • Switzerland     |
| • United Kingdom | • Palestine       |
| • Germany        | • Albania         |
| • India          | • Portugal        |
| • Belgium        | • The Netherlands |
| • Lebanon        | • Japan           |
| • Russia         | • Canada          |

## V – Best practices

In the framework of the Programme, a very important activity was developed for the Universal Exposition of Milan: the launch, collection, evaluation and enhancement of the “*Best Sustainable Development Practices on Food Security*” in the **International Call of Expo Milano 2015**.

The Call was launched in November 2013 until October 2014. It was designed to identify projects, policies, technologies, processes, products and know-how on food security which could provide improvements in this field following the five thematic areas of the programme: sustainable management of natural resources; qualitative and quantitative enhancement of crop production; socio-economic dynamics and global markets; sustainable development of the small rural communities in the marginal areas; food consumption patterns: diet, environment, society, economy and health.

The response to the call was surprising: 786 applications concerning initiatives carried out all over the world were submitted through an innovative on-line form available in the Platform. The initiative was narrated including texts, photos, videos and links. The form becomes a story of ideas, people and experiences in 10 steps: the story is a simple and effective tool to share experiences, concepts and ethical values and to fill cultural gaps.

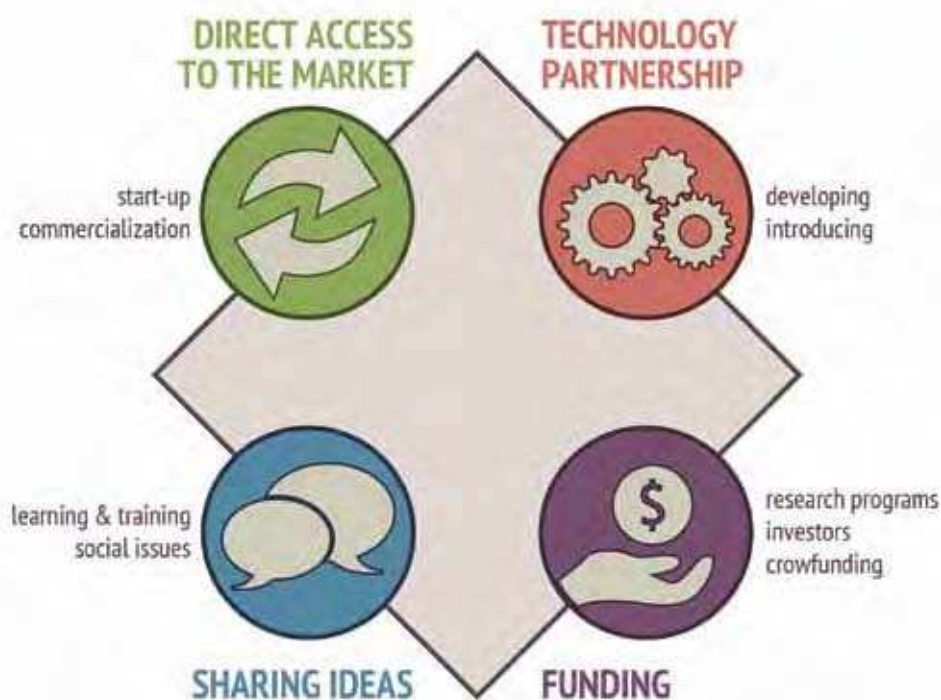
The online form was designed to include the general data of the candidate project (title, abstract, area of execution, budget, and partnership) in the first part and the project description in the second part with special reference to items such as sustainability, environmental and social impact, human resources and their interaction with the beneficiaries of the project.

Out of all the applications, 749 were eligible for evaluation. They were divided in the five thematic areas as follows: 203 (27%) for the first priority, 164 (22%) for the second, 47 (6%) for the third, 172 (23%) for the fourth, 164 (22%) for the fifth.

During the phase of evaluation, carried out by an *International Selection Committee* chaired by H.S.H. Prince Albert II of Monaco, nine criteria were taken into account to select initiatives of higher impact and with a high potential of sustainability: innovation, social impact, environmental impact, concreteness, transferability and replicability, openness, attractiveness.

Eighteen initiatives were selected. The prize awarded by Expo Milano 2015 and the Feeding Knowledge Programme was not money but visibility and support to future development. As regards visibility, dedicated events were organized for the winning initiatives during the period of the exposition: the prize-awarding ceremony in the *Padiglione Italia* on 6 July 2015, with the participation of Italian and foreign representatives of institutions; thematic workshops organized inside the site of the exposition and two exhibitions of photo and video stories – one at Pavilion 0 for the whole duration of the universal exhibition and one at the Urban Centre in Galleria Emanuele II of Milan in the month of June.

As to the enhancement of the 18 winning Best Practices, Feeding Knowledge developed “**Market Exploitation Support**”, activities designed to identify possibilities of improvement, stabilization, evolution of the initiatives in accordance with four “pillars”: access to the market, models of technological transfer, fund raising, sharing if ideas.



The four pillars of the Market Exploitation Support model.

The first pillar, “**access to market**”, includes actions that guarantee an income to small landowners. This is achieved through the marketing of the local products via an integrated international supply chain, which ensures the compliance with given standards. The marketing is channelled through an association that organizes production or guarantees an equitable income.

The **transfer of technologies** can occur following a vertical model when companies offer technological tools to farmers or through a cross integration within a partnership.

**Funding** may be obtained through several strategies and instruments: ethical credit institutions, non-traditional lenders (i.e. a supplier), crowd funding.

**Sharing of ideas** is the last pillar of the model. It implies the transfer of knowledge, setting up of networks with the institutions, promotion of sustainable tourism.

The activities in the programme pertaining to the Best Practices went beyond. Since the applications submitted represent a valuable resource of knowledge and experience and may contribute to the fight against food insecurity, a dedicated section was developed on the Feeding Knowledge platform. Furthermore, a digital catalogue was also produced; it contains the candidate Best Practices (749) and the data sheets for each initiative alongside the analysis of the context of origin and of the innovative solutions developed and applied in the field.

The Programme's team carried out a "**cluster analysis**" identifying seven sectors in which the 749 initiatives have been subdivided according to the characteristics of the context, the activities carried out or the processes and products developed and the achievements:

1. Networking, Cooperation & Institutional aspects
2. Natural resources management
3. Economy & Market
4. Sustainable Development
5. Food Chain
6. Research, Development, Knowledge & Awareness
7. Climate & Environment

The cluster "Research, Development, Knowledge & Awareness", including not only research and development but also training activities, development and sharing of knowledge, is one of the most recurrent in the analysis (24%), followed by "Sustainable Development" (19%), "Food Chain" (18%), "Natural resources management" (16%), "Networking, Cooperation and Institutional Aspects" (11%), "Economy and Market" (7%), and "Climate and Environment" (5%).

The result of this analysis shows how the activities, technologies and know-how linked with knowledge and research are the key to solving problems of food security, in line with the philosophy of Feeding Knowledge.

The Best Practices carried out in the Euro-Mediterranean region were also analysed. Thanks to the effort made by the experts in the scientific network and the contribution of the Local Points in disseminating the Call and supporting the applicants, the Best Practices in the Mediterranean countries were 478 (61%). An excellent result made possible also by the active involvement of the Italian **Ministry of Foreign Affairs and International Cooperation** (MAECI) and of the Italian **Ministry of Agriculture, Food and Forestry Policies** (MiPAAF).

Also for the Best Practices coming from the Mediterranean region, a "**cluster analysis**" was conducted using the same thematic clusters. Once again, the cluster "Research, Development, Knowledge & Awareness" is the most recurrent (26%), followed by "Food Chain" (19%), "Natural resources management" (18%), "Sustainable Development" (15%), "Networking, Cooperation and Institutional Aspects" (10%), "Economy and Market" (7%) and "Climate and Environment" (5%). It shall be underlined that from the qualitative analysis of the Mediterranean Best Practices, the solutions pertaining to the cluster "Research, Development, Knowledge & Awareness" had

been applied even when the main problem of the context of origin regarded another of the seven clusters identified.

These elements show that a virtuous system of knowledge in the Mediterranean might provide appropriate solutions to reduce food insecurity.

## VI – Future prospects

Feeding Knowledge ended in October 2015. On the background of its achievements in five years of activity, the Programme has become part of Expo Milano 2015 legacy and has contributed to the Milan Charter, a global commitment on the right to food which is the intangible heritage of the universal exposition. Feeding Knowledge was not only a programme; it is the start of a process, the bench test of a true “knowledge ecosystem” in a laboratory – the Mediterranean – which enshrines many of the peculiarities of other regions of the world. For this reason, the promoting and implementing agencies of the programme intend to carry on the work so far carried out in order to apply the main strategic approach of Feeding Knowledge: sharing and co-creation of knowledge to meet real needs with special reference to food security. The idea is to create an open and collaborative technological Ecosystem, an environment for the sharing of knowledge based on networking and access to useful information to satisfy the needs of the innovation chain stakeholders for a sustainable agriculture and rural development. Through an interactive approach, the Ecosystem can help create virtuous channels of communication and exchange of needs, knowledge and solutions among players: institutions, civil society, researchers, operators, private sector. They would contribute to innovation for food security in a pro-active, collaborative and sustainable manner.

## VII – Human resources

Feeding Knowledge results from a five-year collaboration between **CIHEAM** (Centre International de Hautes Etudes Agronomiques Méditerranéennes – Bari Institute) and **Politecnico di Milano - METID** (Metodi e Tecnologie Innovative per la Didattica) with **Expo S.p.A.** interested in the project for its innovative approach.

**Expo S.p.A.** is the company entrusted by *Bureau International des Exposition* to organize and manage the international exposition in Milan on “*Feeding the Planet. Energy for Life*”.

**CIHEAM** (Centre International de Hautes Etudes Agronomiques Méditerranéennes) is an **intergovernmental organization** founded in 1962 and including 13 Euro-Mediterranean countries. It is a centre for **post-graduate training, applied scientific research and design/implementation of international cooperation projects**. The Mediterranean Agronomic Institute of Bari (**CIHEAM Bari**) works in four thematic areas: “Land and water resources management”, “Integrated protection of Mediterranean fruit and vegetable crops”, “Mediterranean organic agriculture” and “Sustainable agriculture, food and rural development”. CIHEAM Bari capitalizes on the synergy between training/education, applied scientific research and cooperation **to provide tangible solutions to current issues such as food security and quality of agriculture**. Thanks to constant attention paid to the dialogue among institutions in the Mediterranean basin, CIHEAM Bari is involved in numerous activities ranging from international, European and national strategic programmes to local initiatives. Actions are carried out in the respect of natural resources and biodiversity for the promotion of sustainable agriculture and to meet the challenges of globalization. Its **national and international networks** make CIHEAM a platform for institutions and organizations which wish to cooperate in the Mediterranean basin and in other regions of the world.

As to the “Feeding Knowledge” Programme, CIHEAM has dealt with the technical scientific aspects linked to the design of the platform, the drawing up of the five White Papers and of the Policy Paper, a support to the National Extension Services, a survey on the needs linked to food security, the call for the Best Sustainable Development Practices of Expo Milano 2015, promotion of the successful Best Practices. Furthermore, thanks to the institutional networks to which it belongs, CIHEAM could facilitate the creation of 10 Local Points of the Programme and identify and train local facilitators.

Fifteen members of CIHEAM staff were involved in the implementation of “Feeding Knowledge” Programme: project managers, scientific experts and researchers, communication manager, project secretary.

**POLITECNICO DI MILANO** is one of the top universities in Europe in the field of science and technology. It trains engineers, architects and industrial designers. The University has always focused on the quality and innovation of its teaching and research, developing a fruitful relationship with business and productive world by means of experimental research and technological transfer. Research has always been linked to education and is a priority commitment which has allowed Politecnico di Milano to achieve high quality results at international level as to join the university to the business world. Politecnico takes part in several research and training projects collaborating with the most qualified European universities. Politecnico's contribution is increasingly being extended to other countries: from North America to Southeast Asia to Eastern Europe. Today the drive to internationalization sees Politecnico di Milano take part in the European and world network of leading technical universities and offers several exchange and double-degree programmes beside many programmes which are entirely taught in English.

**METID** is the Politecnico's body which deals with **e-Collaboration, e-Learning, Social Media for research**; it designs and tests strategies, instruments and methodologies for an innovative and efficient use of the Network in **national and international** contexts.

Within the framework of Feeding Knowledge, the **Managing Director of METID** was also responsible for its coordination suggesting development avenues, defining roles and objectives and ensuring public relations. The **Process manager** was the coordinator of production and implementation activities. The **project managers** were in charge of the project management. The **Administration** was in charge of the management of contracts, expenditure and reporting. The Process staff implemented the activities dealing with:

- **Analysis and monitoring** of the innovative uses of the network in the field of communication, collaboration and learning.
- Development of a **feasibility study**.
- Implementation of prototypes.
- **Design** of e-collaboration activities.
- **Implementation and customization** open source and web 2.0 systems.
- **Multimedia editing**.
- **Visual design**: interaction design, video editing and photography, development of graphic interfaces, digital and editorial graphic.
- **Development of communication strategies**.
- **Implementation of community**.
- **Technical and methodological training**.
- **Technical help** and support to users.



## For CIHEAM

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CIHEAM team.

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**The Politecnico team.**