The University of Milan has been carrying out cooperation activities with the developing countries through its teaching, technical and administrative staff as well as through its students for many years. This publication gathers in a rational way the records related to the ongoing or recently concluded cooperation interventions. It deals with more than one hundred projects developed in over 50 countries in collaboration with dozens of universities and research centers, with a great number of local institutions and NGOs and supported by a wide range of international and local financing bodies as well as by privates of our country and of other developed or developing countries. The many experiences conducted in different fields offer a clear witness of the approach that the University of Milan has adopted. “Anyway, the effort demonstrated even for the more practical interventions was that of never giving up to comply with its basic function as a University, namely to train young people, to promote their planning skills, to help them to assume responsibility in other words to build human capital as a fundamental means in order to set every country free from being dependent and to lay the grounds for an autonomous development and for building a solidarity awareness.”
THE ACTIVITIES
OF INTERNATIONAL COOPERATION
FOR DEVELOPMENT
OF THE UNIVERSITY OF MILAN

Edited by
Claudia Sorlini
Delegate to the International Cooperation for the Development
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Foreword

The gap between the developed countries of the world, the developing and emerging ones underlies conflicts, instability and division among the peoples. The Millennium goals, based on the implementation of the rights to food, health, education, equal opportunities, ecological sustainability, promoted by the UN in 2000 and endorsed by 191 countries, illustrate briefly what should be done, at least as a first step, in order to achieve a more equitable distribution of the resources and to make fade away the tensions, enabling all peoples to attain a decent standard of living in economic and social terms but also of human rights in particular.

In this framework, the universities can play a very important role that is however officially attributed to them even by the major international organizations (UN) and by the European Union, a role which consists in encouraging the dialogue among the peoples and the mutual understanding between the cultures, contributing to the development of the education in third countries, fostering mobility and exchanges and spread the ideals of democracy and respect for human rights. The University of Milan has been increasingly working on this line for years.

In fact, there are more and more groups of teachers that activate cooperation projects or participate in projects of other institutions. There are several methods and channels of action in part related to various cultural and scientific expertise present in the faculties which include, among other things: courses entirely or partly reserved for the international cooperation for development in order to raise awareness on this topic among the Italian students, training sessions for the foreign students conducted by our teaching staff in universities of other countries, training sessions for PhD students from developing countries on topics suitable for their origin countries; joint research activities; and lastly, management of and participation in cooperation projects managed by non-governmental organizations or by other bodies that have territorial impact on the social groups involved, through the transfer of appropriate technology and the elaboration of development plans for the sector. In this case the University gives its contribution to guaranty the appropriateness of the scientific and technological choices. Many of these activities are carried out in collaboration with the local universities.

Moreover, some centers dedicated to the cooperation for development operate within the University of Milan: the Interuniversity Centre for Agrifood and Environmental Cooperation for Development (CICSAA) established together with the University of Pavia and the University of Brescia, the University Centre for the Promotion of Italian Language and Culture G. and C. Feltrinelli (CALCIF), the Contemporary Asia Research Centre (CARC) meant to develop the research on the economic and cultural reality of the Asian countries; the Confucius Institute to promote the study of the Chinese language and culture; additionally, an intensive course for the Chinese students is active within the framework of the Marco Polo programme. A Faculty of Pharmacy has been established within the “Nostra Signora del Buon Consiglio” in Tirana where students are awarded a double degree; training courses are occasionally organized in other countries (Chad; Egypt; Sierra Leone etc.). It should also be added that the University of Milan is part of the Network for the Coordination of University Cooperation for Development (CUCS Network).

The most widespread work is however carried out by groups of teachers of the various faculties, a fieldwork dedicated to the achievement of the projects throughout the territory. Altogether there are several hundreds of professors, students and administrative and technical staff involved in more than 100 projects in over 50 countries, with dozens of partners in the developing, the emerging and the developed countries and with a great number of small and major financing bodies. Anyway, the University doesn’t waive its training function aimed at a traditional teaching as well as and mostly at creating a culture of internationalization, of civil responsibility and of solidarity among the peoples.

The Rector
Prof. Enrico Decleva
Introduction

This brochure deals with the activities that the University of Studies of Milan undertakes in the international cooperation for development field.

In the uncertainty as to what criteria to adopt in choosing the countries to be considered for this paper, it was decided to follow those used by the Directorate General of International Cooperation for Development of the Ministry of Foreign Affairs namely: African and Middle East countries, Latin America and Caribbean countries, Asian and Pacific countries and for Europe some of the countries that most recently joined the Union.

Some of the countries within this wide range, which are defined as emerging, during the last years have experienced an accelerated development process with a strong GDP growth (in particular the BRIC countries Brazil, Russia, India and China), with which Italy, together with the European Union, keeps conducting cooperation activities on different topics, from the environment to the human rights, from the agriculture to the linguistics, also because the need for confrontation on these issues and for supporting the development of some areas of these countries still living in conditions of backwardness continues to be of common interest.

Besides these countries there are several others that show interesting development signs, even if not so important, while many others are still under serious difficulties and affected by migrations of large numbers of people in search of a country in which to work and live with dignity. In those countries life expectancy at birth doesn’t reach or barely goes over 40 years of age (according to data provided by the UN), the literacy rate barely reaches 40% of the population, and they are being devastated by endemic wars, many of which are caused by competition for water supplies and food resources. The result of these wars is the decimation of the younger generations, the devastation of the land and the destruction of agricultural resources and this only serves to worsen the economic situation of the area or of the country and to delay its social and economic growth. Some interesting studies, conducted by FAO and by researchers from different universities, have shown that the areas at greatest risk of military conflict are currently those where there is a higher level of poverty and hunger.

Many diseases, such as malaria, AIDS, tuberculosis, disappeared or reduced in the developed countries since long ago, still afflict the humanity of the developing countries. The poor sanitary conditions, confirmed by data on the lack of access to health services and sanitation for a huge share of world population, are behind the spread of gastrointestinal diseases that represent the...
leading cause of death in early childhood in many of these countries. On the other hand, also the inadequate schooling, the failure to overcome discrimination and the lack of respect for human rights, prevent the full deployment of the abilities of the individuals both in the personal and family dimension and in the social one. It should be added that in these countries the natural resources of invaluable ecological value are often destroyed on grounds of bare necessities or of internal or external speculation.

The strategies of the international organizations

The fight against poverty and hunger can not be separated from the achievement of other objectives for a real social growth. To this end, the 191 UN member states signed in 2000 the Declaration of the “Millennium Development Goals”, to be achieved by 2015: halve the number of people living in conditions of extreme poverty (with less than a dollar a day), undernourished and not having access to safe drinking water; make sure that in every place in the world boys and girls can complete at least a full course of primary schooling; promote gender equality and empower women, by eliminating gender inequalities in primary and secondary education and at all levels of education; reduce of 2/3 the rate of infant mortality for children under 5 years of age; improve maternal health by reducing of 2/3 the mortality of women giving birth to a child; fight AIDS, malaria and other diseases such as tuberculosis, reversing the current trend; ensure environmental sustainability by integrating the objectives of the sustainable development into the country policies and programs and by reducing the loss of environmental resources; halve the number of people lacking access to safe drinking water; develop a global partnership for sustainable development. The countries that have signed this agreement undertake to promote specific policies regarding the cooperation for development, to respect the principles of the international trade that takes into account the needs of the countries of the southern hemisphere, to reduce or cancel the debt of the poorest countries and to transfer appropriate technologies.

The Declaration of the “Millennium Development Goals” is an act of a great human as well as economic and strategic value, the implementation of which can lead to a real progress of the democracy, of the empowerment of the individuals and of the peoples and to the creation of conditions essential for peace.

Today, a few years ahead of the deadline established for 2015, the population in the world who suffers from hunger, even though it has decreased in percentage points (from 34% in 1970 to 29% in 2009), shows however a significant increase in absolute numbers, going from 830 million in 1979 to 925 million in 2011. Among the different causes (economic crisis, rising oil prices, speculation on the international market, excessive volatility in food commodity prices, energy production from biomass, which deprives the markets of food commodities, climate change) more recent phenomena such as “land grabbing” are also added. It is a practice implemented by actors of the rich, developed or emerging countries who buy wide areas of farmland in developing countries, which are withdrawn from agricultural production with imaginable consequences on the internal market.

As for the extreme poverty reduction, people living on less than $ 1.25 per day dropped from 46% in 1990 to 27% in 2005 and are expected to drop further on to 15% in 2015, but this is mainly due to the economic progress made by China.

From 1990 to 2008, the percentage of underweight children under 5 years old dropped from 31% to 26% and the 90 deaths out of one thousand children born alive in 1990 decreased to 65 in 2008. Half of these deaths occur in sub-Saharan countries, where one child out of 7 does not get to turn 5 years. Malnutrition contributes to at least one third of these deaths.

The maternal mortality decreased insufficiently; today there are still 500,000 women who die each year worldwide, especially in Sub-Saharan Africa and South Asia.

However, the perinatal care is increasing. With regard to HIV, despite the progress made, in 2008 there are still 33.4 million people living with this disease. As for malaria, the number of people who sleep under tents has increased, but still insufficiently.

In 2008, still 100 million children of school age, of whom 52% are girls, were out of school; 70 out of these 100 million live in 33 countries affected by armed conflict. In about two thirds of the countries gender parity in primary education was achieved. The situation in some sub-Saharan and South Asian countries is still critical.

Access to safe, high quality and in sufficient quantity drinking water has been recognized by the
UN as a universal and inalienable human right only on the 29th of July 2010. In 2008, the persons who did not benefit from this right were 884 million.

**The European policies of the Italian Government**

The issues on which the European Union has committed itself do not differ substantially from those of the UN and, even if with a different focus, from those supported and developed by the Italian Development Cooperation. The 8 “Millennium Development Goals” are only an intermediate step of a desirable process at the end of which every country should see the full implementation of the human rights, of the deliverance from the bondage of hunger, the achievement of equal opportunities, of the right to health and so on. This document had the merit of setting dates and quantifying clear objectives, even if much of the working plan is behind schedule.

An interesting aspect of the international and national cooperation policies of the last decade is represented by the innovations brought to the strategies.

First of all, the relationship between the Donating and the Beneficiary Country has been revised, in the sense that the idea of dependence of the second on the first one is outdated affirming instead a more equal relationship between the two countries of which the second is called “partner”. This means a full autonomy is recognized for every country to draw up its own development strategies by using different means. The donating country intervenes in support of these strategies, for activities which are carried out on the basis of shared objectives and responsibilities related to the implementation of the projects. In other terms the principle of “democratic ownership” is recognized which transforms the co-operation from a simple economic foreign aid into an interactive collaboration between the two countries (or groups of countries or other institutions). The new strategies agreed at the international level aim furthermore to allow interdisciplinary wide-ranging projects, especially those having a lasting impact on the partner country, and foresee the involvement of the civil society of both countries as key players for the economic growth. The partner country maintains control over the decision-making processes, the implementation and the evaluation of its own policies. The civil society, formed by the community that doesn’t identify itself neither with the State nor with the market, is represented by the associations of citizens, the foundations, the cultural groups, etc. and helps protecting human and environmental rights, guaranteeing the right of association, the freedom of the media, the information transparency, etc. The involvement of the civil society obviously does not exclude, but integrates and blends with the institutional one. This new direction of the cooperation also means that the assessment shouldn’t be based solely on the financial resources, but also on the procedures adopted for the results’ management (managing for development results).

Another innovative aspect is the commitment to coordinate the various levels of cooperation, in particular those managed by the Local Authorities and by the Regions, which developed a lot during the last decade. Whilst on one hand these initiatives demonstrate a growing interest and an increased awareness on the issues in question, on the other hand, in the absence of a common strategy, they are likely to be scattered. The Italian Government has moved with the aim of carrying out the projects supported by the Regions and by the Local Authorities, within the strategies and the priorities set at a national and international level by enhancing them at the same time. Today the so-called decentralized cooperation, managed by the Regions and the Local Authorities (REL) is conducted in agreement with the General Direction for Development Cooperation of the Ministry of Foreign Affairs. Even the activities of the non-governmental organizations (NGOs) play now a greater role by operating according to the institutional decisions, including the international ones. They are also now represented in the governmental delegations to the United Nations.

A special attention is paid to the University by the EU, in particular through the Erasmus Mundus initiatives, aimed to: “… promote understanding among peoples, contribute to the sustainable development of the education in the third countries, while preventing the brain drain, and support vulnerable groups of people …”; “fight against social exclusion in all its forms, including racism and xenophobia … and promote dialogue and understanding between cultures …”, support “the teaching and learning of the foreign languages and of the linguistic varieties” and foster the mobility and the exchanges” by taking into consideration the social dimension of the higher education as well as that of the ideals of democracy and respect for human rights “(Decision No. 1298/2008/EC of the European Parliament and of the Council).

As for the Italian Government, the geographical priorities are focused on sub-Saharan Africa, on the countries in which important political commitments were made (Afghanistan, Lebanon), on the areas in which our country has deep roots (Latin America, Middle East and the Mediterranean); the thematic priorities are: the environment, the common assets, with special attention to the rural development, the agriculture in general, the organic and conventional farming in particular, the research for alternative and renewable energy sources, the policies for gender equality and in particular women empowerment, plus the traditional themes such as the health and the education. The attention is also focused on the policies not directly aimed at the development, but with a significant impact on the growth of the country (human rights, education etc.). Among the different partnerships, the Ministry identifies 4 pillars within the country - the enterprises, the NGOs and the charity work sector, the universities and the research centers as well as the regional and local authorities (REL) - with which it considers essential to intensify its collaboration.

It is officially acknowledged that the universities have the irreplaceable task to disseminate the values of the solidarity and of the international cooperation by teaching to the new generations the social responsibility and the awareness of the international issues, as well as the task of promoting the relations between the higher education and research institutions that should be serving the peace and the development.

That’s exactly the framework within which the collaboration between the Rectors’ Conference of the Italian Universities (CRUI) and the Ministry of Foreign Affairs - Directorate General for Development Cooperation - is operating. Such collaboration “aims to identify a renewed academic model of cooperation for development and for peace, able to enhance the social mission and the role of the University in training the human resources”. 
The University of Studies of Milan and the international cooperation for development

Several university and interdepartmental centers as well as some groups of professors who conduct co-operation activities in the fields of medicine, agriculture, zootechnics and husbandry, nutrition, drugs, environmental protection, recovery and valorization of cultural heritage, human rights, linguistic mediation, etc. are operating within the University of Milan (UNIMI).

The University of Milan, together with the University of Brescia and with the University of Pavia, is a founding member of the Interuniversity Centre for Agrifood and Environmental Cooperation for Development (CICSAA). The centre manages several projects both as a coordinator and as a partner especially to support the activities of the NGOs.

The University of Milan has also established the University Centre for the Promotion of Italian Language and Culture G. and C. Feltrinelli (CALCIF), which has received over the past years about 1000 students from more than 70 countries around the world (from Angola to Cameroon, from Sudan to Egypt etc...), and the Contemporary Asia Research Centre (CARC) with the aim of promoting and developing research on the socio-economic and cultural reality in the countries of the Far East.

As part of the Marco Polo program, every year an intensive Italian language course is organized for around 200 Chinese students who wish to undertake studies in one of the Italian universities. The Confucius Institute is also active and it was established with the aim of promoting the study of the Chinese language and culture.

A large part of the cooperation work is performed outside the research centers by groups of teachers of different faculties who establish relations with a large number of universities and research centers in the developing and emerging countries; the teaching staff of our university is engaged in courses, seminars and joint research activities at the universities of these countries. Trainees, who aim at acquiring cultural, scientific and technical tools which respond to the needs of their countries of origin, are hosted in Milan. Many teachers are also engaged in providing scientific validation and support for the implementation of projects managed by the NGOs, an activity that recently intensified through the activation of new projects as well as through the involvement of new groups of teachers, PhD students, technical staff, students, and that is often beyond the official census of the University.

That’s why the records that describe the projects in progress or completed during the last years probably represent only part of the co-operation activities of the University of Milan. However, the projects that have escaped this census will still be included in the electronic version of this brochure on the UNIMI website. The format of the record is the one drawn up by the Ministry of Foreign Affairs in collaboration with the Politecnico of Milan for the census of the cooperation activities of the universities (Database of University Cooperation, DaBaCU).

A total of more than 100 records of projects underway or recently completed in over 55 emerging and developing countries, which are involving hundreds of teachers of UNIMI (66 of which are only the project coordinators) have been collected.

UNIMI is part of the CUCS Network of the northern universities, created under the patronage of the Ministry of Foreign Affairs and coordinated by the Politecnico di Milano, which carries out several activities such as information, coordination of joint initiatives, conferences, promotion of a culture of cooperation among the young people.

The strategies of UNIMI

The University of Milan is pursuing its cooperation activity in various fields in accordance to its connotation of “generalist” university, or, to put it better, of a university having expertise spread over a wide range of cultural areas. Keeping with its mission of public education and research institution, and in accordance with the role attributed to the university system by the European Union and the Ministry of Foreign Affairs - DGDC, it has developed several channels through which to conduct its cooperation for development activity:

1. Training activities at various levels for the Italian students with the aim to raise their awareness with respect to the international cooperation issues, to promote the culture of solidarity and the concept of social responsibility. Several courses are fully or partially dedicated to issues within the institutional educational offer of the various faculties.
2. Training activities for students from third countries both at the University of Milan and at universities in other countries, such as the establishment of the Faculty of Pharmacy at the University of Tirana, Albania, where the teachers of the University of Milan have held courses for many years and the students, who during the 5th year have a double enrollment at the University of Milan and at that of Tirana, graduate with the release of a double degree; or the first level master course on agriculture in arid areas held at the University of Ain Shams in Cairo according to the model of the first level Italian Masters; or even the undergraduate degree course in Medicine held in Chad and aimed at training specialists in the treatment of HIV, or the intensive course on advanced techniques of electronic microscopy held for PhD students and researchers from different Iranian research centers and universities.

3. Training activities through the PhD courses. Thanks to the grants reserved for non-EU students, some doctoral schools have managed to transform the function taken for granted of training individually a young man into a support for development projects in the home countries. The students who use these grants have the opportunity to acquire advanced skills essential for their countries in the fields of technology, medicine, economics and international law, the preservation of cultural heritage, nutrition etc. The PhD grant in these cases becomes the means through which the agreements are concluded with the sending University of the student, who can therefore develop research, studies and projects in accordance to the needs of his country. This system on one hand decreases the risk that the young man no longer goes back to his country after completing the cycle of studies and on the other hand makes easier his reintegration in his home country by providing a training in accordance to his needs; finally, it creates a relation between the two universities that extends beyond the duration of the doctorate. The institutions of the developing countries are very interested in training young people with skills in economics and international law. Too often the very poor countries in terms of economic development, but very rich in natural resources are not able to properly manage the contracts with the large corporations which are ready to bring technologies and exploit the country's resources mostly to their own benefit.

4. There are many and varied basic and applied research activities performed with the emerging and the developing countries, ranging from the scientific disciplines, medicine, economics and international law, the preservation of cultural heritage, nutrition etc. The PhD grant in these cases becomes the means through which the agreements are concluded with the sending University of the student, who can therefore develop research, studies and projects in accordance to the needs of his country. This system on one hand decreases the risk that the young man no longer goes back to his country after completing the cycle of studies and on the other hand makes easier his reintegration in his home country by providing a training in accordance to his needs; finally, it creates a relation between the two universities that extends beyond the duration of the doctorate. The institutions of the developing countries are very interested in training young people with skills in economics and international law. Too often the very poor countries in terms of economic development, but very rich in natural resources are not able to properly manage the contracts with the large corporations which are ready to bring technologies and exploit the country's resources mostly to their own benefit.

5. A particular field in which the University of Milan has carried out its activity has been that of providing scientific and technological support to the projects of the NGOs. The role of the NGOs is invaluable, given their long-lasting commitment in the country and place of intervention. However, more and more both the NGOs themselves and the donors request the involvement of the Universities (Italian and local) in order to guarantee the scientific correctness of the intervention and to provide support for the technological choices. It is of vital importance, in fact, that these choices are environmentally and economically sustainable and tailored to the management possibility of the staff in the country of intervention. In this case, the involvement of the University (and that of the research centers) is a guarantee in terms of technical and scientific compliance, and therefore identifies a very specific role of the universities, a role that does not overlap with that of the Italian/European or local NGOs, but that integrates and enhances it. A good example of the success of this methodological proposal of intervention in support of the NGOs is the work carried out in Lebanon (see article by G. Salì).

6. Using the tools of the information and distance communication technology (ICT). The University of Milan committed itself to develop the use of the information and communication technology not only in the field of distance education in the developing and emerging countries, but also in that of providing support for the technological and operational choices made by the local social groups involved in the cooperation projects. Particularly in a time when the economic crisis has a negative impact including on the cooperation activities by reducing the number of the financed projects, the ICT is very useful in order to follow up the implementation of the interrupted cooperation projects. The role of the universities in this case is to provide consultancy through its researchers and experts in order to support the choices of the social groups involved locally in the projects. In addition to telemedicine for the care of human beings, plants telemedicine and televeterinary are also emerging.

The many experiences conducted in different fields offer a bear witness of the approach that the various areas of the University of Milan have enacted. Anyway, the effort demonstrated even for the more practical interventions was that of never giving up to comply with its basic function as a University, namely to train young people, to promote their planning skills, to help them take responsibility in accordance with the human rights, in other words to build human capital as a fundamental means in order to set every country free from being dependent and to lay the grounds for an autonomous development and for building a solidarity awareness.
The Interuniversity Centre for Agrifood and Environmental Cooperation for Development (CICSAA) was created in 2006 by the University of Studies of Milan, the University of Brescia and the University of Pavia, with the following purposes:

a. promote the research on topics related to the development cooperation with regards to the social economic and technological aspects with a special focus on the agribusiness and environmental system;
b. conduct research activities related to the development in collaboration with or on behalf of international, national and regional bodies and institutions as well as associations or NGOs;
c. conduct advisory activities for the evaluation of the projects carried out in the developing countries;
d. conduct monitoring and results control activities for the interventions performed in the developing countries;
e. establish awards and research grants for the achievement of the Centre's purposes, in compliance with the regulations in force, provided that the funding is specifically assigned to this same purpose by the financing body;
f. conduct documentation activities on the methods of intervention, on the projects and on the research related to the agribusiness system issues in the developing countries;
g. collaborate with the education and training institutions of the developing countries on the research topics of the centre;
h. foster the youth exchanges and the technology transfer among the academies, the universities and the institutions of higher education;

The purposes of the CICSAA are, therefore, of various kinds: on one hand coordinate the activities that have been carried out, in some cases for several years, by the single professors and researchers of the three universities or by small groups and promote the sharing of experiences and of methods acquired; on the other hand, the possibility to support new projects in the developing countries through interdisciplinary approaches and in close connection with the local universities and NGOs that act as project managers.

Currently more than 40 professors and researchers of the three universities have joined CICSAA and a further enlargement to other higher education institutions is foreseen. CICSAA also takes part to the activities of the Coordination of University Cooperation for Development (CUCS) coordinated by the Politecnico di Milano.

The members of the CICSAA pertain to seven Operational Units (OU):
Among the various projects to which some CICSAA groups or units have given their active contribution the following should be reminded:

1. The project «Consolidation des micro jardins pour l’amélioration de la sécurité alimentaire dans la municipalité de Dakar» (code GDCP/SEN/002/ITA) funded under the FAO Special Programme for Food Security (PSSA) and by the Municipality of Milan (decentralized cooperation FAO - the Italian Government and the 30 years old twinning Milan - Dakar).

The project is carried out by the Agricultural Engineering Unit under the supervision of Professor F. Sangiorgi with the collaboration of other professors that joined the centre and under a framework agreement with the NGOs ACRA and COOPI.

The project's aim is to help the fight against poverty by improving the food quality and by fostering the income increase through the implementation of the Microjardins (MJ). The MJs, that have been developed as a response to the unavailability of agricultural land in the urban environment, can become important tools for food safety as: improve access for the poorest families to horticultural products; contribute to the families' diet diversification; create a source of additional income.

2. The collaboration with the NGO AVSI for the project “Litani the cohabitation river” in Lebanon.

The cooperation project in the food farming field, performed in the areas near the Litani river, theater of war in 2006, is about the reconstruction and the improvement of the production and marketing conditions of the local agricultural products and foodstuff. The project involves also four Lebanese universities.

A qualifying element of the activity is the strong integration between the two action levels:

- The first one is the presence on the field and the complex local relations network set up by the NGOs; this allows taking the “pulse” of the issues and of the emergencies born within the local society;
- The second one is the scientific and methodological knowledge provided by the partner university that allows streamlining and focusing the issues as well as the approaches and the methods for searching solutions.

The university can therefore operate within the framework of its competence and mission enhancing and qualifying at the same time the cooperation action by giving it a solid methodological setting and by providing expertise, facilities and technologies.

This same action, together with the constant dialogue with the Italian and Lebanese public institutions, has resulted in a model of interaction between actors able to address the development issues according to pathways such as the partnership, the knowledge sharing and dissemination as well as the local rooting.

There are currently many projects to which CICSAA has provided its expertise:

- Emergency interventions in the Marjayoun plain, Lebanon - funded by the Ministry of Foreign Affairs
- Emergency interventions in West Bekaa, Lebanon - funded by the Ministry of Foreign Affairs
- Promoting sustainable agriculture in Lebanon - funded by the Lombardia Region
- Improvement of irrigation water management in Lebanon and Jordan - funded by the EU
- Interventions for the socio-economic and agro-environmental development in the Caza of Marjayoun and in West Bekaa - funded by the Ministry of Foreign Affairs
- Rehabilitation of the irrigated perimeter of Baalbeck, Lebanon - funded by the Ministry of Foreign Affairs
- Water source of cohabitation, phase I - funded by the Lombardia Region

The collaboration at the project, supervised by professor Guido Sali, involves four Units of our Centre and represents an interesting example of synergy between different disciplines and is described in detail in the project forms.

3. The collaboration with the NGO Reach Italia on the project “Recovery of the highly degraded lands for food safety in Sahel Burkinabé”. The project has been submitted to the Province of Milan within the call “Expo of the territories” and was awarded a prize by the ad hoc scientific advisory board. Later on it was co-financed by the Lombardia Region and by some private enterprises.

Currently the project is in progress and it involves two CICSAA units, both in the field of plant and animal production.

4. The project “New technologies (ICT) for an integrated and sustainable management of natural resources in Lebanon” funded by the Lebanese Ministry of Water and Energy and by the Italian Ministry of Foreign Affairs, has just been launched and has the following aims:
   a) develop an IT system for decision support in water management for agriculture and
   b) collecting and organizing data for climate monitoring.

5. There is a cooperation framework agreement with the NGO COSV for activities in support of the research according to needs that may arise during the development cooperation operations that fall under the mutual area of expertise. In particular, the scientific collaboration on the project: “Support to three local governments for the sustainable natural resources management and the enhancement of the biodiversity in the two provinces of Ecuador”.

6. CICSAA is a partner for the project “Strengthening of the micro-entrepreneurship network of the Piura province” under the five-year partnership agreement with the NGO ICU for the cooperation project “Support programme for the development and improvement of the micro-enterprises owned by young and adult Peruvians”.

The General Aim of the project is “Helping the socio-economic development of youth and adults
from Peru” whereas the Specific Purpose is “Helping adult micro-entrepreneurs and students develop their own enterprise in a professional and sustainable way”.

7. Recently, some CICSAA members have renewed the collaboration with the Faculty of Agriculture of the Catholic University Notre Dame of Haiti, through the direct participation to on-site training activities and the consultancy to the experimental farm adjoined to the Faculty and that has been set up in the late 90’s of the last century. Similar activities to support the training and the research are in progress with the University of Makeni (Sierra Leone).

The Centre, along the academic year, organizes several seminars within which the main results and the issues developed during the cooperation projects are presented. These activities are aimed both at students from participating universities and at the civil society and are an important moment for scientific debate, an occasion for disseminating the results and an opportunity to involve the students.

Every year, on the occasion of World Food Day (15th of October), the CICSAA organizes a conference as part of the events promoted by the Directorate-General for Development Cooperation of the Ministry of Foreign Affairs during which topics or projects of particular importance are discussed.
The academic activities in the field of development cooperation did not always have a fertile breeding ground.

The modern development co-operation was born somewhere between the late 60’s and 70’s when, on the wake of the decolonization process, the non-governmental cooperation phenomenon began to grow operating in addition to, and often even in contrast with, the cooperation performed through the institutional channels. It should be mentioned that the university wasn’t at that time a privileged partner of neither the public institutions, nor of the civil society. The first ones relied mainly on the business world thus fostering the success of the Italian industry abroad through large industrial and infrastructure projects. As for the non-governmental cooperation, it developed around models that differed from the governmental one in terms of approach, dimensions and aims. Basically there were actions grounded on models derived more from the Christian missionary tradition or from the elaboration of ideologies aimed at redeeming the oppressed populations in which the operational and relational side prevailed decisively over the needs for analysis and for a technical and scientific setup of the interventions.

Over the years, both of these approaches have shown their limits and flaws which there is no need to deepen. Just think about the rethinking process of the governmental cooperation that has been developing ever since the ’90s, both at a national and at European level, creating coordinated and integrated programs in which the research and the analysis phases merged, on one hand, and the intervention as well as the operational and joint partnership on the other hand. The non-governmental cooperation also has been through a process of growth such as to raise the awareness that only by placing their own programs on a multilevel and multidimensional cognitive framework it becomes possible to significantly improve not only the results of the interventions but also the impact on the social and economic context.

In this context, the intervention of the university in the development cooperation has acquired an increasingly important role along with the growing need to improve the efficiency and effectiveness of the interventions foreseen by the projects. Moreover, a mainspring has resulted from the need to also give a strong boost to the growth of human capital through training, students and teacher exchanges, establishing increasingly closer contacts between the universities on the research and teaching sides.

We can therefore say that the role of universities in the development cooperation has increased under the rebalancing process of the decision-making hub that moved from the donor country to the bilateral partnership. It’s a role grown also thanks to the turnover of the transfer process of...
technology, financial resources, expertise) to foster the endogenous growth and the knowledge sharing, until new and original cultural synthesis will be developed.

Within this framework in recent years a system has taken shape in which the institutions, the civil society and the universities have by now found a definite place and complementary roles in addressing the issues related to the development aid. The model born from the experience acquired over the years is going therefore through a new era of collaboration between the three parties that become just as many pillars that support the cooperation activities.

Among the actions that have allowed overcoming an old and justifiable mistrust, we should remember the initiative of the Ministry of Foreign Affairs that has established a dedicated channel of dialogue with the academic world, so that broad, concerted and multidisciplinary initiatives could be launched. In parallel it is by now a common practice of the non-governmental organizations to rely on the support of the universities for the analysis and the problem elaboration phases as well as for the ex ante and ex post evaluation of the projects that have been drawn up.

The pattern followed to approach the cooperation issues which is set on these three subjects closely interconnected, allows achieving several strategic goals. First of all, the world of the non-governmental cooperation, by now rooted in the countries where it operates, is able to perceive the needs coming from below, which are linked to the development problems of the local economy, to the health and education issues, to the quality of the life and of the environment, to the growth of the social capital. Furthermore, the NGOs are able not only to equip themselves with the structure needed in order to implement the interventions, but they have often established networks with other local and foreign organizations to collaborate for the development of the action programs. In this context, the actions mainly taken are related to the projects carried on in agriculture and handicraft, in the management of the natural resources and the energy, in the basic health care, in the education and raising public awareness, in the development of associations and of a more solid social network.

The involvement of the academic world in this area has been gradual, and only during the last few years it has been trying to become a “system” and abandon an approach based on the voluntary work of many teachers. These teachers, by keeping in touch with the world of the cooperation for idealistic reasons, have built along the years a wide network of technical and scientific cooperation, which, with some exceptions, only in recent years have became more visible and systematic in the institutional activities of the universities, and the present volume is a clear proof of this evolution. The academic involvement in local development projects has also allowed the development of methods of intervention based on “appropriate technologies”, a form of technology transfer which is not based on the efficiency criteria typical for the industrialized countries, but that is able to adapt to the system of structural constraints of the different realities in which they must be implemented. The university can therefore operate within the range of its powers and mission enhancing and qualifying at the same time the co-operation action by endowing it with a solid methodological approach, and by providing expertise, facilities and technologies.

On the governmental front, the missions of the donor countries and of the international institutions develop intervention strategies taking into consideration a wide range of decision parameters, among which stand out the needs expressed by the local institutions. In this case, the university is required to play a binding role between identifying the problem and programming strategies to address it. It is at this level that we can find the activities of academic cooperation in the field of the major healthcare facilities and of the programs for the fight against endemic diseases, in that of the agricultural conversion projects, of the protection and exploitation of the cultural resources (archaeological, architectural, ethnographic, etc.), including drawing up and implementing higher education and advanced training projects as well.

The two levels of intervention described above, a micro and a macro, inevitably tend to join and have some overlaps whereas, once the governmental institutions identify the problem, it can be crosschecked through the involvement of the university for the analytical and planning stages and through that of the non-governmental cooperation for the implementation phase of the interventions.

That’s how the three pillars link within an action framework that is now way far from producing all the potential benefits. The experiences lived recently bring out, in fact, the awareness that the three entities may develop worthwhile actions on several fronts and at different levels, as demonstrated by the setting of the main Community instruments for cooperation, ENPI (European Neighbourhood and Partnership Instrument), DCI (Development Cooperation Instrument) and IPA
(Pre-accession instrument). For instance the ENPI is organized on different intervention levels, from the bilateral cooperation to the regional and interregional one and up to cross border and thematic cooperation. The key role of the civil society, on one hand, and of the cultural and educational world, on the other, is asserted especially in the thematic cooperation with a special attention to the role that the universities can play both in the development of complex project proposals and in the creation of consortia between public and private bodies able to develop framework agreements, an useful instrument for bringing continuity to the actions that are being carried on and for training staff specialized on the cooperation for development issues.

It should also be noted that the model discussed so far needs a key player to bring a sense of completion to the system of interventions. We are referring to the business world, which represents an actor required to play an important role in implementing the cooperation policies at both national and European level. The European Union entrusts to the private sector a key role in the implementation of the Community programs for development aid, so that the previously mentioned policy instruments not only establish that the protagonists of the implementation are the public institutions (including universities), the enterprises and the non-governmental organizations, but also advise that the different actors should join their specificities and expertise in order to enhance the competitiveness of the project proposals.

There is no doubt therefore that the reorganization process that we are witnessing during these last years is profoundly modifying the intervention patterns of the cooperation and points that the development challenge is going through a new season, in which the action becomes a system for partnership and the approach becomes multidisciplinary and multilevel. The experiences gathered in this publication are a bear witness that the academic world, and the University of Milan in particular, is able to take up the challenge.
Over the last decades, the outbreak of the globalization phenomenon has helped extending to a global scale the shared responsibility as well as the concern about the problems affecting different countries from all over the World, namely hunger, wars and poverty. Nobody could be more involved in global challenges than young people. Those who are currently students are being trained in a context of profound changes which are weakening the idea of border. Young people are about to inherit a world full of problems and challenges. The international cooperation is an area that brings out their best qualities such as curiosity, sensitivity, open-mindedness, and awareness of the need to become those who bring about the change.

No wonder, therefore, that students appear to be greatly interested in the growing attention towards the international cooperation showed by the Faculty of Agriculture of the University of Milan. Ever since this topic started to gain importance, a few years ago, the students enthusiastically attended conferences, lectures and projects regarding agricultural systems in the Developing Countries. One good example is the successful course on Agro-zootechnical systems and international cooperation held by the professors S. Bocchi and G. M. Crovetto, which started two years ago.

Students are mostly interested in the possibility of writing a thesis or undertaking internships on an international cooperation topic. Some of them have already done it, and they have spent a training period in a Developing Country, thanks to funds allotted by the Faculty for the reimbursement of expenses incurred for this kind of study trips. Many people are aware that the development issue in the poor countries is not just an ethical fact, but also an area offering real career opportunities. Yet, the cooperation activities in our faculty are not enough to guarantee students’ easy access to cooperation projects. Finding proposals for a thesis argument in this area is still difficult due to the lack of offers and to the difficulty in accessing the existing ones. Some students complain that the bureaucratic time of establishing contacts and partnerships between Italy and the target countries is too long and not compatible with the deadlines established by the degree courses. A first step in overcoming this kind of obstacles might be the enhancement of advertising and dissemination related to the different international cooperation opportunities, which might help facilitating access to the projects for those already interested in this area, but might also help wide spreading the interest among the other students; Students’ participation could become wider if most natural and direct means of communication were used, for instance the official webpage of the faculty which is not working.

These critical issues are likely to be overcome by boosting the activity of the different units of the Faculty and of the University already active in the international cooperation area. The students are ready to work hard in the forefront in order to stimulate its growth. They hope that, by taking part in new initiatives like the present publication, they will help enhance the presence of our Faculty on the international scene and make it emerge as a leading promoter of the global development through research and knowledge dissemination.
The strategies and the international cooperation projects, meant for fighting poverty and hunger, should be primarily focused on the rural areas of the poorest countries for at least four reasons. 1) Most of the poor live exactly in those areas. 2) More and more severe environmental degradation dynamics are developing in these same areas. 3) There are active widespread and continuous conflicts. 4) The political strategies already tested in the past (e.g., the green revolution) centered on the agricultural field, now seem to be inadequate.

For a concise overview of the general context, it is useful to recall some of the major issues, bringing up some aspects that, in the international bibliography, are cited as paradoxes and traps.

1. The paradox of the starving countryside. Of the approximately 980 million undernourished people, 75% live in rural areas, where three out of four persons remain below the poverty threshold, thus constituting “the paradox of the starving countryside.” The difficulty of access to sufficient food cannot be, under any circumstances, attributed only to problems of insufficient agricultural production. It is attributable though primarily to the different political, financial, social and environmental causes that set conditions for an uneven distribution of the resources in the poorest countries, which generates poverty, the mother of famine. The study and response planning activities should not be exclusively or mainly focused on the techniques that allow increased unit production, but they should rather help identify solutions for a better redistribution of the resources management (land, economic, financial, scientific, and cultural resources) starting from the areas most in need.

2. The paradox of the “Immiscerizing growth”, the growth that impoverishes. Bhagwati defines this growth as one whereby a country increases its capacities by producing a good to be exported, but the worsening of the terms of trade leads to a situation of real welfare which is lower than the one preceding the growth. The farmers have often been induced to shift from a predominantly subsistence agriculture towards a cash crop national/international market agriculture. The two production purposes, which may, in theory, coexist for the benefit of the manufacturers and of the consumers, in practice come up against the hourglass structure of the market that often favors only those who are placed in the bottleneck of the same hourglass. The agro-food system is made up of millions of producers, on one hand, and millions of consumers on the other; between these two components there is the trading industry, numerically limited, but economically and politically powerful, which is often controlled by the multinational corporations, mainly U.S. and European. They can affect the entire chain of the main products through: a) integration processes before and after the production, b) interventions of training/assistance provided to the farms; c) the market...
of the inputs, d) the transformation and distribution phases. Compared to other agricultural commodities, the tropical products have registered even higher concentrations: oligopoly situations are known for products such as tea and cocoa (three companies hold 80% of the market share), sugar (four companies own 60%), bananas (five companies control 70%), cotton (three companies take 20% of the market). A recent study has revealed the existence of a group of Commodity Dependent Developing Countries (CDDCs), namely 50 countries in the world (sub-Saharan Africa, the Caribbean and Central America) whose exports are based on a very limited number of commodities. These are mainly less developed countries (LDCs), some of them landlocked or small islands, with very low incomes, food deficit (excluding Uganda), and a high percentage of undernourished people (eg 70% of Burundi), which have increased their production of export goods, but with negative results due to the frequent fluctuations of the international prices. Many of these countries seem to have fallen in that situation that is described as the paradox of the “Immis-erizing growth” that is the growth that impoverishes. The decrease in the export earnings has a negative impact on the ability to cope with the debt, on the importation capacity, on the credit opportunities, on the public revenues and on the basic services (education and health).

3. The traps that prevent the development. Some fast dynamics of the economic and financial world are leading to new situations of wealth and the gap between rich and poor is widening. Countries that were classified in the world rankings as developing, now hold positions of leadership in various production sectors. Some countries, such as Malawi, have always had the last places of the world rankings, while others such as Sierra Leone, were once less poor than India and China (!). We can distinguish nowadays between countries that have more concrete prospects for reduc- ing the poverty (Côte d’Ivoire, Ghana, Mauritania, Tanzania, Uganda), whereas others are likely to worsen their conditions (Burundi, Rwanda, Sierra Leone, Somalia, Sudan, Haiti). Today, therefore, a rich world, or that is getting rich, coexists with a huge ghetto of extreme poverty that seems to have fallen relentlessly in the so called “traps that prevent the development”: the conflict trap, the natural resources trap, the bad governance trap. These traps, interacting with each other, in the presence of cofactors related to the political geography structures (insecure borders; size of the country; lack of access to the sea; etc.) set the main obstacles that hinder the development. 73% of the population in poor countries has been recently or is still involved in a civil war (civil war: internal conflict in which at least 1000 people die during combat and in which each side suffers at least 5% of losses). Researchers from the Oxford University have clearly established that the conflicts (at least in Africa) are highly correlated with other factors such as the income level; the phases of stagnation or decline; the dependence on the natural resources, but the relations are so complex that a cause-effect analysis becomes impossible. Consider, for instance, that 95% of the hard drugs global production comes from countries in conflict. In the international economic analysis, the economic cost of a civil war, for the country involved and for the neighbors, was cyni- cally estimated at about 50 billion Euros; during the last decades, about 2 civil wars broke out a year at a total cost of 100 billion Euros, equal to twice the global aid budget for development. In these statistics, the issues related to individual and social life have not been brought up, nor has been counted the enormous social damage due to the interruption of the agronomic knowledge transmission chain between generations. The conflicts or the wars erase entire generations, leav- ing young people in the difficult and vulnerable situation of being forced to start all over from scratch. In this general picture frame, the energy crisis overlaps that of the food. The industrialized and post-industrial world are looking in the new crops and cropping systems for external solutions to their internal problems. Some countries implement policies based on the so-called land grabbing in order to ensure a higher level of outsourced autonomy for the food and especially the non-food for energy supply productions. In Ethiopia in 1984, while the famine was starving thousands of people, wide areas of fertile land were used for planting linseeds, cotton and rape seed to be exported to Europe as feed for livestock; it is estimated that 80% of the children suf- fering from hunger around the world, live in countries that produce food surpluses in the form of products meant to be used as animal feed. The last one is the trap of the silver bullet, which is metaphorically the technology on which you can count (driven on by the economic boost of par- ticular interests, the public opinion is forced to believe in the absolute utility of the silver-bullet) to solve major problems, with a single, precise and instantaneous action. The extremely reductionist approach of many policies, but also of the research and intervention projects, recalls this type of trap. The real risk is to find the same initial problems, frequently exacerbated, once you run out of metaphorical bullets of simplistic interventions, created in the lab and spread through vertical spillover dynamics (top down).

In order to avoid past mistakes made in the world of the research cooperation, in that of the asso- ciations and in the political and administrative one, some basic concepts, now referred to as planning pillars, to be taken into consideration each time an intervention is planned, have been identified and discussed in Paris (1999) and Accra (2008). The international cooperation interven- tions should: (1) aim to a strong empowerment of the local ownership, (2) comply with a substan- tial alignment (respect to the local strategic policies), and finally (3) formulate accountability schemes (to account for in an objective manner and make the process of implementation and evaluation of the interventions more transparent).

In a complex and dynamic setting, the strategic objectives for the poorest countries could primarily be: enhance the food security (production, access, availability of the food in a context of full and real food sovereignty); ensure the stability of the agricultural crops in order to eventually access the markets; preserve land, water, animal and plant biodiversity resources through a strong aware- ness and an agro-ecological official (schools, universities, local research centers) and traditional (passing on knowledge and crafts) education. This converts, more specifically, into: a) enhancing the subsistence commodities production in the rural areas, b) increasing access for the small-medium farmers to land, to natural resources (such as irrigation water, biodiversity, and seeds), to nonmaterial resources (such as agronomic exper- tise, intergenerational passing on of the skills and of the knowledge, training, information), to economic resources, to the opportunities offered by the local urban markets, to the exportation market, c) increasing the share of the added value of the final product due to the manufacturer by reducing that of the intermediation sector, d) enhancing and boosting the education, training, information and communication activities in the farming field.

The integration of the farmers’ knowledge with the external one requires new partnership forms (participatory research) between the farmers themselves, the researchers and all the other constit- uents of the system. The individual property rights issues (IPR intellectual property rights) and the related legal instruments must be dealt with. The change, with this aim, includes the development of new rules that clarify the values at stake starting from the farmers’ widespread knowledge in
the agricultural and natural biodiversity (healing herbs, local seed market, main and secondary crops, neglected crops, corporate agroforestry systems; local agronomic knowledge) and in the common practice of management, monitoring and protection of all environmental common assets (land, irrigation water, vegetation, landscape).

It is obvious that each of these aspects, in order to be developed, requires an integrated formulation and implementation of local, regional, national and international policies. It is in this general cooperation framework (co-operate = to work together) that each study and research area can contribute with its methods of analysis and technological development tool, but always with an interdisciplinary and global participatory action of the system’s constituents approach.
### PROJECT TITLE
Project CITY OF LIGHT

### THEMATIC AREA
Horticultural production project

### REFERENCE PERSON
Walter Albisetti
Associate Professor

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**Faculty:** Medicine and Surgery

**Old Dept.:** Dept. Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. Biomedical, Surgical and Dental Sciences

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### TYPE OF ACTION
- Education
- Technology Transfer
- Community service

### TARGET COUNTRIES
Amoutchou, Togo

### BENEFICIARIES
Local population

### EXPECTED RESULTS
Improvement of living conditions by creating sources of income through horticultural activities for the members of the association and by creating jobs for the young people.

### PROMOTING ORGANIZATION
Prof. Walter Albisetti

### MAIN PARTNERS
Italian and International:
1. Waves World Association of Volunteers for Emergencies and Solidarity - NGO, Italy;
2. Foundation Pro.sa NGO, Italy;
3. Andegardo Farm in Cernusco Lombardone, Italy.

**Local:**
Association Cité de la Lumière, de Amoutchou,

### OBJECTIVES
1. Create sources of income through horticultural activities for the members of the association;
2. Create jobs for the young people;
3. Train young people in the horticultural field;
4. Fight against child trafficking.

### MAIN ACTIVITIES
Providing material (land rent, tools for the cultivation, seeds, fuel) and human resources (activities coordinator, training supervisor and agricultural advisor).

### FUNDING SOURCE
Private

### DURATION
From: 2011 - To: 2012

### POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

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### PROJECT TITLE
AQUAPLUS - Water, Energy for Life

### THEMATIC AREA
Water management and exploitation of local crops

### REFERENCE PERSON
Daniele Bassi
Full Professor

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**Faculty:** Agriculture

**Old Dept.:** Dept. of Plant Production;
**New Dept.:** Dept. of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

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### TYPE OF ACTION
- Education
- Technology Transfer
- Community service

### TARGET COUNTRIES
Haiti

### BENEFICIARIES
1. Farmers
2. Students
3. Women and children

### EXPECTED RESULTS
1. Sustainable results thanks to the application of innovative and integrated models;
2. Application of best practices in managing water for agriculture and civil use;
3. Setting up pilot factories for processing local crops to enhance their best use as food;
4. Education of mothers and pregnant women for best nutritional practices;
5. Models that can be applied to different contexts.

### MAIN ACTIVITIES
- Development of medical and nutritional centres devoted mainly to child and maternal health.
- Renovation/extension of the current picking-up system by the local community; 4. Agricultural and livestock training with disclosure of the inherent techniques;
- Management, maintenance of hydrological system by the local community; 4. Agricultural and livestock training with disclosure of the inherent techniques;
- Development of local crops to enhance their best use as food;
- Construction of pilot factories to enhance the use of the local crops;
- Application of replicability models to different contexts.

### PROMOTING ORGANIZATION
- Daniele Bassi

### MAIN PARTNERS
Italian and International:
1. Rotary
2. Expo 2015

**Local:**
Université UNDH, Port au Prince

### DURATION
4/5 years

**From:** to be decided / **To:**

### POSSIBILITY OF RENEWAL/FOLLOW UP
Not negotiated yet
**PROJECT TITLE**
Integrated fight against the *Phytoplasma* of the stone fruit in Lebanon

**THEMATIC AREA**
Agriculture, economic and fitopathology project

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**REFERENCE PERSON**
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Faculty of Agriculture  
Old Dept.: Dept. of Plant Production;  
New Dept.: Dept. of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

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**OBJECTIVES**
Overall: Fight the disease caused by the *Candidatus Phytoplasma phoenicium*.
Specific: Development of the research on the disease caused by the *Candidatus Phytoplasma phoenicium* in Lebanon.

**MAIN ACTIVITIES**
1. Survey on the diffusion of the disease;  
2. Monitoring of the orchards (almonds, peaches) and installation of traps for insects;  
3. Questionnaires submitted to farmers on the diffusion of the disease and the damages it can cause. Creation of a database to catalogue all the information collected by these questionnaires;  
4. Seminars and training courses for the Ministry of Agriculture, Municipalities and farmers to explain all information and strategies about the diffusion of the disease;  
5. Quarterly organisation of a scientific table to share all information in order to reach some results as soon as possible;  
6. Dissemination of brochures to farmers about the symptoms of the disease;  
7. Send insects to the University of Turin to make a first classification;  
8. Study on the cycle of insects;  
9. Technical and scientific training to recognize and classify insects;  
10. Study on the economic losses caused by the disease.

**FUNDING SOURCE**  
MAE  
**DURATION**  
From: September 2009 - To: September 2010  
**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Possibility of renewal but with other funding sources.
**PROJECT TITLE**

GRAS - Sahel: Characterization of grasslands primary production in Senegal and study of climate-induced food crisis in the Sahelian CISS (Comité permanent Inter-États de Lutte contre la Sécheresse dans le Sahel) Countries through Remote Sensing techniques.

**THEMATIC AREA**

Agriculture, Grasslands, Climate Variability and Change, Remote Sensing.

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**REFERENCE PERSON**

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Faculty of Agriculture of Milan  
Old Dept.: Dep. of Plant Production; New Dept.: Dep. of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

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**MAIN PARTNERS**

Italian and International:  
1. National Council for Research - Institute for the Electromagnetic Environment Survey (CNR-IREA)  
2. European Union Joint Research Centre (JRC)  
Local:  
1. Centre de Suivi Ecologique, Senegal  
2. Aghymet, Niger

**OBJECTIVES**

Overall: Support food security in Sahelian countries through the identification of appropriate remote sensing techniques and tools for the prevention of food crisis.  
Specific:  
1. Identify a smart model to describe grasslands primary production dynamics through RS tools;  
2. Identify sound indicators for climate-induced food crises in the Sahelian region.

**MAIN ACTIVITIES**

1. Creation of a geo-database with remote sensing derived indices describing vegetation and rainfall;  
2. Creation of a Geographic Information System integrating the above information with ancillary data on food crisis, livelihoods, land cover and use, soils, etc.;  
3. Geo-statistical study of the relationships between primary production and food crisis data, on one side, and RS indices, on the other one, developing an empirical model.

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**PROJECT TITLE**

Agrobiodiversity for seed and food security

**THEMATIC AREA**

Agriculture, Environment, food.

**REFERENCE PERSON**

Stefano Bocchi  
Full Professor Agronomy  
Old dept.: Dept. of Plant Production; New dept.: Dept. of Agricultural and Environmental Sciences

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**TYPE OF ACTION**

• Education and Research  
• Innovation Systems for agrobiodiversity

**TARGET COUNTRIES**

1. Central South America Countries  
2. Ecuador and Peru

**BENEFICIARIES**

1. Beneficiaries of their UE-funded assistance to CILSS Countries.  
2. Creation of a Geographic Information System  
3. Technological transfer of their Research Results  
4. Preparing EXPO 2015 “feeding the Planet” relating to the issue of agrobiodiversity in some States of Central-South America particularly important as centres of domestication of some species popular at global scale.

**FUNDING SOURCE**

Municipality of Milan

**DURATION**

From: November 2011 - To: November 2015

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**POSSIBILITY OF RENEWAL/FOLLOW UP**

A follow-up will be proposed and developed with CNR-IREA and JRC partners within the framework of their UE-funded assistance to CISSS Countries.
2. To obtain these results, CIDETER is promoting
2. Increase in the national and international
1. Improvement of the levels of quality,
3. Normalización en el campo de la maquinaria agrícola - CIDETER, Las Parejas,
1. Agricultural machinery & relative components
• Communication
5. FACTORS
1. Tractor testing has been carried out in Brazil
2. Discussion with Brazilian tractor manufacturing
3. Convince Brazilian tractor manufacturing
industry to adopt OECD Official Testing of
Agricultural and Forestry Tractors.

2. Study of Automation and Engineering Centre
suicability to the OECD testing scheme;
2. Advice modifications and new testing devices;
3. Convince Brazilian tractor manufacturing
industry to adopt OECD Official Testing of
Agricultural and Forestry Tractors.

1. Visit of Automation and Engineering Centre;
2. Discussion with Brazilian tractor manufacturing
managers;
Brazil is one of the biggest agricultural countries,
main world producer of coffee, sugar (& alcohol),
fruit juices. It is the highest tractor producer of
Latin America (40,000-50,000 units/year), of
which the majority is exported; testing of safety
devices has to be accomplished in other countries.
Tractor testing has been carried out in Brazil
(University of Campinas) since 1949. In the past
it was compulsory, while now it is optional. The
Joint Proposal of the Automation and Engineering
Centre and the tractor manufacturers is to
establish the Automation and Engineering Centre
as the OECD Tractor Testing Centre of Brazil.

1. Tractor manufacturing industry
2. Agricultural machinery testing institutions
3. Dept. of Agricultural Engineering

Realization of a suitability study of the possibility
of the Automation and Engineering Centre
(Jundiaí, São Paulo) to enter into the OECD
scheme for the Official Testing of Agricultural
and Forestry Tractors. OECD (Organization for
Economic Cooperation and Development) has
published different Standard Codes for the
Official Testing of Agricultural and Forestry
Tractors. These tests are recognized all over the
world by governments, institutions, farmers. All
the major tractor manufacturing countries are
members of this scheme. Brazil is one of the few
exceptions.

PROMOTING ORGANIZATION
OECD

MAIN PARTNERS
International:
OECD, Division for the Official Testing of Agricul-
tural and Forestry Tractors
Local:
Automation and Engineering Centre (Jundiaí,
São Paulo), part of IAC (Instituto Agronómico de
Campinas)

EXPECTED RESULTS

1. Conference/discussion on EU standards;
2. Conference/discussion on EU agricultural
machinery and components manufacturing;
3. Conference/discussion on EU agricultural
machinery and components markets.

MAIN ACTIVITIES
1. Conferences;
2. Visits;
3. Discussions on personal experiences.
Conferences:
1. Tendencias y oportunidad de los principales
mercados europeos de maquinaria agrícola -
Seminario CITIA 2005 - Buenos Aires, 19-22
maggio 2005;
2. Estado de la producción de maquinaria y
equipamiento agrícola en la Unión Europea.–
Bolsa de Comercio, Rosario (Argentina), 28
Nov. 2006;
3. Normalización en el campo de la maquinaria
agricola - jornada Técnica sobre "Tendencias
internacionales en normalización y
mecanización agraria" - CIDETER, Las Parejas,
Argentina, 24 Septiembre 2007;
4. Perspectivas del sector de la maquinaria agrícola
a corto y a mediano plazo - X Congreso
Argentino de Ingeniería Rural y II del Mercosur

FUNDING SOURCE
CIDETER, University of Milan

DURATION
Different short visits in 2005, 2006, 2007 and
2009

POSSIBILITY OF RENEWAL/FOLLOW UP -

TYPE OF ACTION
• Education
• Research
• Technology Transfer
• Communication

TARGET COUNTRIES
Argentina, Provinces of Santa Fé & Córdoba

BENEFICIARIES
1. Agricultural machinery & relative components
manufacturers
2. Agricultural machinery institutions
3. Dpt. of Agricultural Machinery

EXPECTED RESULTS
1. Improvement of the levels of quality,
competiton and profitability of the local
agricultural machinery and relative components
industry, through:
• increase of export, with the promotion
of industrial cooperation and quality and
innovation development;
• promotion of investment conditions;
• promotion of technological innovation
of products and of their manufacturing
methods;
• promotion of production chain integration;
2. Increase in the national and international
competitiveness;
3. To obtain these results, CIDETER is promoting
the contacts of the regional agricultural
machinery industry with international experts
(mainly from Italy and Spain), through
discussions, conferences, visits to the
manufacturers.

PROMOTING ORGANIZATION
CIDETER (www.cideter.com.ar - Investigation and
Terriortial Development Centre)

MAIN PARTNERS
Italian and International:
1. University of Milan
2. Universidad Complutense (Madrid, Spain)
Local:
1. CIDETER
2. CAPMA (Argentinean Chamber of Agrimachin-
ery Manufacturers)
### PROJECT TITLE
Biotechnology from desert microbial extremophiles for supporting agriculture research potential in Tunisia and Southern Europe

### THEMATIC AREA
Biotechnology

### REFERENCE PERSON
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Old Dept.: Dept. of Food Science and Microbiology
New Dept.: Dept. of Food, Environmental and Nutritional Sciences

### TYPE OF ACTION
- Education
- Research

### TARGET COUNTRIES
1. Tunisia
2. Italy
3. Greece

### BENEFICIARIES
1. University laboratories
2. Scientists of Tunisia and North Africa
3. University students in Tunisia
4. Biotechnology industry in Tunisia

### EXPECTED RESULTS
1. Recruitment of three experienced researchers that will set up in the laboratory of the Tunisian partner a Microarray system, a Real Time-PCR and an Automated Phenotype Array System and will develop the most recent analytical techniques based on these advanced tools. The three researchers will benefit of training periods in two European laboratories (in Italy and Greece) that already use these technologies;
2. Transfer of know how to the Tunisian partner that will be able to improve the research potential in the microbial biotechnology of arid ecosystem;
3. Planning of a careful dissemination strategy in the field of BIODESERT to spread the improved knowledge in the scientific environment and the society of Tunisia and other North African countries, by promoting the application of Microbial Resource Management to improve agriculture sustainability in arid ecosystems.

### PROMOTING ORGANIZATION
- MAIN PARTNERS
  Italian and International:
    1. University of Milan (Project Coordinator)
    2. University of Ioannina
    3. Greece

### PROJECT TITLE
Cereal Systems Initiative for South Asia (CSISA)

### THEMATIC AREA
Plant Biotechnology

### TYPE OF ACTION
- Research
- Technology Transfer
- Education

### TARGET COUNTRIES
South Asia

### BENEFICIARIES
1. Farmers
2. Consumers

### EXPECTED RESULTS
Identification of genes involved in heat-stress tolerance in rice.

### PROMOTING ORGANIZATION
- MAIN PARTNERS
  Italian and International:
    1. Martin Kater, University of Milan
    2. Paolo Pesaresi, University of Milan
    3. Martin Kater, University of Milan
    4. Paolo Pesaresi, University of Milan

### OBJECTIVES
Overall: Development of heat-stress tolerant rice cultivars to maintain rice production yields under changing climatic conditions.
Specific: Study of the expression of candidate genes in rice varieties developed by IRRI. The expression of these genes is tested under different environmental conditions.

### MAIN ACTIVITIES
1. Molecular Genetic Research
2. Training

### FUNDING SOURCE
IRRI - International Rice Research Institute

### DURATION
From: May 2009 - To: December 2011

### POSSIBILITY OF RENEWAL/FOLLOW UP
Information not available
1.11

PROJECT TITLE
Reforestation in Dajabon

THEMATIC AREA
Forestry

REFERENCE PERSON
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Old Dept.: Dept. of Plant Production;
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TYPE OF ACTION
• Education
• Research

TARGET COUNTRIES
Dominican Republic (Dajabon)

BENEFICIARIES
1. Students
2. Teachers
3. Borders communities

EXPECTED RESULTS
1. Creation of specialized curricula for students thanks to the in vitro lab;
2. Transformation of the school into a regional reference centre for the supply of plants both endangered and to be used in a severely deforested area.

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
1. Municipality of Milan
2. Faculty of Agriculture, University of Milan
3. Faculty of Medicine, University of Milan
4. UNDP

Local:
Technology Institute San Ignacio de Loyola

OBJECTIVES
Specific:
1. Reforestation;
2. Collaboration with scientific committee of Expo 2015 for the future development of the project.

MAIN ACTIVITIES
1. Verify the feasibility that ITESIL in Dajabon can undertake the construction of an in vitro plant laboratory mainly relying on cooperation and synergies belonging to private and public local structures;
2. Planning an in vitro plant laboratory at ITESIL

FUNDING SOURCE
Municipality of Milan, FAO, University of Milan

DURATION
From: month 2009 - To: month/year

POSSIBILITY OF RENEWAL/FOLLOW UP
- 

1.12

PROJECT TITLE
WATER SOURCE OF COHABITATION: urgent and established answers for a possible cohabitation in Marjayoun and in Markaba

THEMATIC AREA
Agriculture, water management and socio-economic project

REFERENCE PERSON
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Associate Professor
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Old Dept.: Department of Agricultural, Food and Environmental Economics and Policy;
New Dept.: Department of Economics, Management and Quantitative Methods

TYPE OF ACTION
• Education
• Research
• Technology Transfer

TARGET COUNTRIES
Lebanon (South Lebanon, source Dardara)

BENEFICIARIES
1. Farmers
2. Agriculture family
3. Students

EXPECTED RESULTS
1. Rehabilitation of the channel of irrigation in the Plain of Marjayoun;
2. Reinforcement of the cooperative of the source of Dardara (WUA);
3. Study of the socio-economic impact of the intervention;
4. Publication of the newspaper school;
5. Training of students on the issue of water;
6. Study about the drainage, irrigation and the conversion in arable land;
7. Study about more profitable crops;
8. Construction of little water basins to improve water use.

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
1. ONG Avsi
2. ONG Africa 70
3. Faculty of Agriculture, University of Milan
4. Associate office MPM

Local:
1. Local Municipalities
2. Schools

OBJECTIVES
Specific:
1. Development of the socio-economic conditions of the Caza of Marjayoun intervening in the fields of water, agriculture and education;
2. Promotion of the possibilities of cohabitation in the Region between Muslim and Christian communities.

MAIN ACTIVITIES
1. Socio-economic analysis of the agriculture sector;
2. Studies of the local water network of the source of Dardara;
3. Rehabilitation of the third channel of the source of Dardara;
4. Topographical study to maximize the distribution of the water;
5. Support to the WUA (Water User Association), mainly on the management of water;
6. Supply of tensiometers to better understand the real need of crops;
7. Analysis of water and of soil;
8. Socio-economic study on the impact of the rehabilitation of the channels of irrigation.

FUNDING SOURCE
MAE - ONG AVSI

DURATION
From: June 2009 - To: June 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
No possibility of renewal
PROJECT TITLE
Urban micro gardens consolidation in order to improve food security

THEMATIC AREA
Food security and urban agriculture

PROJECT TITLE
Agriculture in waterless zones

THEMATIC AREA
Agriculture in extreme environment

REFERENCE PERSON
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REFERENCE PERSON
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TYPE OF ACTION
• Education
• Research
• Technology Transfer

TARGET COUNTRIES
Senegal (Dakar)

BENEFICIARIES
1. Unemployed people;
2. Women;
3. Grassroots organisations

EXPECTED RESULTS
1. 5000 families involved in the production of vegetables for personal consumption and direct selling;
2. Creation of eight micro-garden training and demonstration centres (CFD) and of the management structure for the coordination of the implemented projects;
3. Teaching material tailored for the local context;
4. A tested organizational model for the sale of the items offered within the local market;
5. Data on the behaviour of the horticultural cultivars in the Senegalese micro-gardens recorded in the Hortivar database;
6. Assessment of the intervention program;
7. Improvement of the urban agriculture institutional knowledge in Dakar and Milan;
8. Training the population on the opportunities offered by the urban agriculture and on the constraints that prevent its development.

Benefits that can be obtained from the micro-horticulture:
• Improvement of food security and safety
• Diversification of the diet
• Increase of family income
• Increase of workplaces
• Recycle of waste materials
• Reduction of water consumption for irrigation

PROMOTING ORGANIZATION
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MAIN PARTNERS
Italian and International:
1. Municipality of Milan; 2. University of Milan; 3. COOPI NGO; 4. ACRA NGO; 5. FAO; 6. The Ministry of Foreign Affairs; Local: Mairie de Dakar/Municipality of Dakar

OBJECTIVES
Overall: Help improving food security by integrating the diet and creating income-generating activities for the beneficiaries
Specific: 1. Support the establishment and the development of the Training and Demonstrations Centres CFD by helping the local population in the management of the micro-gardens; 2. Significant increase of the number of beneficiaries in order to increase the variety of products suitable for the market and development of a sustainable marketing strategy

MAIN ACTIVITIES
1. Identify and establish eight CFD; 2. Select a pilot CFD; 3. Define the eligibility criteria of the beneficiaries; 4. Create a distribution system of production inputs at household level; 5. Create a product distribution channel; 6. Create a GIS for data collection throughout the territory; 7. Elaborate an organizational model for the CFDs; 8. Schedule the cultivation for personal consumption and sale; 9. Define suitable marketing strategies; 10. Organize a results presentation workshop and publish information booklets.

FUNDING SOURCE
Municipality of Milan, FAO (IFDCP)

DURATION
From: October 2006 - To: December 2007

POSSIBILITY OF RENEWAL/FOLLOW UP
The phase 2 of the project is ongoing

TYPE OF ACTION
• Research
• Education

TARGET COUNTRIES
Egypt (Cairo)

BENEFICIARIES
1. Universities
2. Centres of research
3. Farmers

EXPECTED RESULTS
1. Understanding of physiological mechanisms of resistance to water stress;
2. Advanced knowledge on genes of resistance;
3. Selection of plants resistant to water stress;
4. Selection of PGPR;
5. Adjustment of appropriate irrigation systems.

PROMOTING ORGANIZATION
-

MAIN PARTNERS
Italian and International:
1. University of Milan, 2. University of Catania; 3. Parco Tecnologico Padano (Science Park Foundation) - CERSA (Research Centre for Agri-food Studies) 4. Italian Consortium for Agricultural Research - Agrital di Maccarese; Local: University of Ain Shams

OBJECTIVES
Overall: Looking for measures able to challenge water stress and increment the productivity.
Specific:
Advanced knowledge in:
1. Plant physiology
2. Genetics
3. Microbiology
4. Cultural systems

MAIN ACTIVITIES
1. Research on genetics and physiology;
2. Research on molecular biology of microorganisms;
3. Research on cultural systems.

FUNDING SOURCE
MIUR (Ministry for Education, University and Research. FIRB - Fund for the Investment of Basic Research)

DURATION
From: 2007 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
-
**PROJECT TITLE**  
Establishment of a Faculty of Agriculture within the University of Makeni through the setting up of the 4 years degree in Agricultural and Food Science and Technologies

**THEMATIC AREA**  
Agri-food higher level training

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**REFERENCE PERSON**  
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Faculty of Agriculture  
Old Dept.: Dept. of Food Science and Microbiology; New Dept.: Dept. of Food, Environmental and Nutritional Sciences

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**OBJECTIVES**  
Specific:  
1. Training human capital  
2. Encourage the establishment of small and medium enterprises in the agri-food industry  
3. Fight against unemployment and improve the nutritional conditions of the population

**MAIN ACTIVITIES**  
1. Set up entrepreneurial activities in the field  
2. Developing food processing and food preservation systems  
3. Improving the agriculture through the usage of appropriate procedures and technologies  
4. Developing food processing and food preservation systems  
5. Set up entrepreneurial activities in the field  
6. Young people and the women.

**EXPECTED RESULTS**  
1. Training human capital  
2. Encourage the establishment of small and medium enterprises in the agri-food industry  
3. Fight against unemployment and improve the nutritional conditions of the population

**PROMOTING ORGANIZATION**  
-  
**MAIN PARTNERS**  
Italian and International:  
1. The University of Studies of Milan, Faculty of Agriculture  
2. Saint Lawrence Foundation

**FUNDING SOURCE**  
Saint Lawrence Foundation

**DURATION**  
From: July 2009 - To: July 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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**PROJECT TITLE**  
Inside the City of the Dead, International Workshop  
**THEMATIC AREA**  
Urban Agriculture  
**REFERENCE PERSON**  
Tommaso Sposito  
PhD researcher

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**TYPE OF ACTION**  
- Education  
- Technology Transfer

**TARGET COUNTRIES**  
Sierra Leone  
**BENEFICIARIES**  
1. Students,  
2. Farmers  
3. Local population

**EXPECTED RESULTS**  
1. Set a study programme together with the representatives in Makeni  
2. Equip the classrooms, the computer lab, the teaching labs  
3. Set up a teaching farm on the field  
4. Start up the preliminary teaching activities through a refresher course for the students  
5. Select the students for the next enrolment session for the faculty  
6. Recruiting teaching staff in Italy, in other developed countries and in Western Africa for all the 4 years  
7. Build the rooms for the labs and equip them

**MAIN ACTIVITIES**  
1. Donation of furniture and books  
2. Donation of furniture and books  
3. Donation of furniture and books  
4. Donation of furniture and books  
5. Donation of furniture and books  
6. Donation of furniture and books  
7. Donation of furniture and books

**FUNDING SOURCE**  
NGO Live in Slums

**DURATION**  
From: 28 October 2010 - To: 6 November 2010

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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**TYPE OF ACTION**  
- Education  
- Technology Transfer  
- Community Service

**TARGET COUNTRIES**  
Egypt

**BENEFICIARIES**  
6 families living in Cairo’s City of the Dead

**EXPECTED RESULTS**  
1. International workshop participants and local beneficiaries get familiar with micro-garden technique;  
2. Workshop participants and beneficiary families search for recyclable materials for micro-gardens construction;  
3. Selected families build some micro-gardening container and start vegetable cultivation;  
4. Families are aware of major vegetable pathogens and they have some notions on pest management;  
5. A tree boulevard is planned and installed in some area of the City of the Dead.

**MAIN ACTIVITIES**  
1. Provide the beneficiaries with micro-gardening inputs;  
2. Supply the beneficiaries with production inputs;  
3. Guarantee the follow up of beneficiaries’ training;

**FUNDING SOURCE**  
Saint Lawrence Foundation

**DURATION**  
From: July 2009 - To: July 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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**TYPE OF ACTION**  
- Education  
- Technology Transfer  
- Community Service

**TARGET COUNTRIES**  
Egypt

**BENEFICIARIES**  
6 families living in Cairo’s City of the Dead

**EXPECTED RESULTS**  
1. International workshop participants and local beneficiaries get familiar with micro-garden technique;  
2. Workshop participants and beneficiary families search for recyclable materials for micro-gardens construction;  
3. Selected families build some micro-gardening container and start vegetable cultivation;  
4. Families are aware of major vegetable pathogens and they have some notions on pest management;  
5. A tree boulevard is planned and installed in some area of the City of the Dead.

**MAIN ACTIVITIES**  
1. Donations of furniture and books;  
2. Installation of the tree boulevard;  
3. Construction of cultivation containers and starting-up of micro-garden activities;  
4. Planning of a tree boulevard;  
5. Donation of furniture and books

**FUNDING SOURCE**  
Saint Lawrence Foundation

**DURATION**  
From: July 2009 - To: July 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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**TYPE OF ACTION**  
- Education  
- Technology Transfer

**TARGET COUNTRIES**  
Egypt

**BENEFICIARIES**  
6 families living in Cairo’s City of the Dead

**EXPECTED RESULTS**  
1. International workshop participants and local beneficiaries get familiar with micro-garden technique;  
2. Workshop participants and beneficiary families search for recyclable materials for micro-gardens construction;  
3. Selected families build some micro-gardening container and start vegetable cultivation;  
4. Families are aware of major vegetable pathogens and they have some notions on pest management;  
5. A tree boulevard is planned and installed in some area of the City of the Dead.

**MAIN ACTIVITIES**  
1. Donations of furniture and books;  
2. Installation of the tree boulevard;  
3. Donation of furniture and books

**FUNDING SOURCE**  
St. Lawrence Foundation

**DURATION**  
From: July 2009 - To: July 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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**TYPE OF ACTION**  
- Education  
- Technology Transfer

**TARGET COUNTRIES**  
Egypt

**BENEFICIARIES**  
6 families living in Cairo’s City of the Dead

**EXPECTED RESULTS**  
1. International workshop participants and local beneficiaries get familiar with micro-garden technique;  
2. Workshop participants and beneficiary families search for recyclable materials for micro-gardens construction;  
3. Selected families build some micro-gardening container and start vegetable cultivation;  
4. Families are aware of major vegetable pathogens and they have some notions on pest management;  
5. A tree boulevard is planned and installed in some area of the City of the Dead.

**MAIN ACTIVITIES**  
1. Donations of furniture and books;  
2. Installation of the tree boulevard;  
3. Donation of furniture and books

**FUNDING SOURCE**  
St. Lawrence Foundation

**DURATION**  
From: July 2009 - To: July 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes
**PROJECT TITLE**
Geographical information System (GIS)

**THEMATIC AREA**
Agriculture technology

**TYPE OF ACTION**
- Technology Transfer

**TARGET COUNTRIES**
India (Madurai)

**BENEFICIARIES**
1. Researchers
2. Students

**EXPECTED RESULTS**
Improved knowledge in both universities on agriculture and informatics systems as GIS.

**OBJECTIVES**

**OVERALL**
Cooperation and technology transfer among the University of Milan and the Madurai Kamaraj University

**SPECIFIC**
1. Improvement in GIS technology;
2. Transfer of landscape planning methods;
3. Greenway planning.

**MAIN ACTIVITIES**
1. Research;
2. Training on GIS;
3. Use of GIS in landscape planning

**FUNDING SOURCE**
From each university

**DURATION**
From: 2000 - To: 2010

**POSSIBILITY OF RENEWAL/FOLLOW UP**

**REFERENCES**

**PROJECT PERSON**
Alessandro Toccolini
Full Professor

e-mail: alessandro.toccolini@unimi.it
phone: 02 503 16854

Faculty of Agriculture
Old Dept.: Dept. Agricultural Engineering;
New Dept.: Dept of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

**MAIN PARTNERS**

**ITALIAN AND INTERNATIONAL**
Dept. of Agricultural Engineering, University of Milan

**LOCAL**
Prof. A. Sundaram, School of Energy Environment and Natural Resources
Department of Futures Studies, Madurai Kamaraj University
Since 1997, the University of Milan - Faculty of Agriculture has been collaborating with the University Notre Dame of Haiti (UNDH) in the higher education and agriculture dissemination areas. Particularly, from 1999 to 2004, a cooperation project has been carried out having as beneficiary the Faculté d’Agronomie of the UNDH and as donors the Italian Bishops’ Conference (the ‘8 per mille Committee, one of the main sponsors of this operation) and the AVSI Foundation (Milan), which funded as well as actively coordinated this complex operation keeping permanently on-site at least two of its agronomists, everything under the scientific responsibility of the Faculty of Agriculture in Milan.

The project’s aim and result has been establishing an educational-experimental farm to assist the newborn at that time Faculté d’Agronomie of the UNDH, based in Les Cayes, in the South-Western part of the country. The project didn’t just start up and make functional an educational farm of more than 30 ha by equipping it with all the technical equipment suitable for its proper functioning (not to mention those for the students’ practical activity: rice for seed, vegetables, maize and forage cultivation; a cattle stable with diary cows and home-made processing of dairy products; farmyard animals breeding; setting up an orchard and an arboretum, etc), but it also operated at a teaching level through ten or so Italian teaching staff missions (from the Bologna and Milan universities) to Haiti and the student exchanges between the two universities.

Later on, several graduates of the Les Cayes Faculty have found employment in different projects (agriculture, forestation and food and nutrition education) that AVSI has been running uninterruptedly ever since in that same area. The disseminating activity addressed to the local farmers, through training seminars and practical activities (selected seeds distribution, setting up community vegetable gardens, etc) was of great importance as well.

The framework in which the new collaboration phase fits in is the ‘AQUALUS’ (Water, power source for life) project, sponsored by the Rotary Club of Milan and logistically supported by AVSI and by MLFM (Movement for the Fight against Hunger, Lodi), within the EXPO 2015 initiatives. This same project aims to improve the living conditions of the rural population of the Torbeck municipality (where the Faculté d’Agronomie is based), starting from an appropriate use of the water resources and dealing in an integrated way with all the aspects related to the proper water resource management such as the agriculture, the environment, the education, the health and the fight against malnutrition. A key factor for the sustainability of the project is the involvement of the local authorities and population through a training and educational process.

A very prominent role in this project has been given to the renewal of the collaboration between UNIMI and UNDH which foresees sending teaching staff from Italy to provide seminars and intensive courses; student exchanges and refresher courses for the Haitian professors.

Prof. Daniele Bassi
Old Dept.: Department of Plant Production
New Dept.: Department of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

Cooperation Unimi-Haiti: agriculture education and development
Course on Agro-zootechnical systems and International Cooperation (6 Credits, Faculty of Agricultural Sciences, University of Milan. Prof. Stefano Bocchi, Cropping systems and Matteo Crovetto, Breeding Systems)

The course aims at providing tools for analyzing the agro-food systems of the Countries of the South of the World for those who wish to work in the International Cooperation sector.

After analyzing the structure of the agri-food system, both for the cropping and the livestock breeding sectors, of different geographical, agro-ecological areas, and of several Countries located in different climatic conditions, some fundamentals related to Food security and sovereignty are discussed, referring to the dynamics of the international and local markets.

According to a systemic approach, some important food chains are analyzed, with particular attention to the sustainable use of the productive factors and to the organization of the agricultural systems for crop and livestock production.

The current issues related to food and environmental crisis, to North/South imbalances, to the main tools for international cooperation are discussed and deeply analyzed with the contribution of external experts.

Prof. Stefano Bocchi
Old Dept.: Department of Plant Production; New Dept.: Department of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

Club of Bologna: a world task-force on the strategies for the development of agricultural mechanization

The Club of Bologna is a free association, founded on the initiative of UNACOMA (National Union of Manufacturers of Agricultural Machinery) in close collaboration with FAO and UNIDO, with the goal to convene at least once a year the world’s most qualified experts in different fields of machinery and agricultural mechanization in order to discuss topics of primary interest for the development of the sector. Final Conclusions and Recommendations are submitted to the various national governments and international organizations, as well as to the research and agricultural area representatives and manufacturers in order to define appropriate development strategies for the mechanization in the different areas of the world.

Ever since it was set up, one of the Club of Bologna’s distinguishing feature is the broad representativeness of its global composition that brings together over 140 members from 49 different countries representing all major geographic areas, allowing the creation of a network for exchanging ideas and opinions as wide comprehensive and thorough as possible.

In this context, the issue of agricultural mechanization in developing countries has been the subject of numerous meetings and has been treated in a comprehensive and structured way on the basis of several points of view gathered from various realities that are representative of the different regions of the world.

In particular, periodic technical reports were made of the level and specific characteristics of single countries or regions that are moving rapidly towards the development of the mechanization (Latin America, South-east Asia, Eastern Europe) as well as of areas, such as those of African countries, where agriculture is less developed in terms of technology and characterized by very specific situations and needs. This allowed us to emphasize the need for close cooperation between industry and research institutions in order to develop machines suitable for the different operating environments and, more generally, the strategies to be adopted in order to combine the export of machines with the appropriate technology transfer upon which the development of a local manufacturing industry, as well as a network of technical services and training interventions should be based.

The guidelines on the role of mechanization in agricultural development were discussed and defined, emphasizing the need for the private sector to play its part, taking into account the needs of farmers, retailers, manufacturers and importers.

The main objective is to determine: the most appropriate forms of mechanization according to: each specific organizational and economic situation, the possible forms of credit, the role of contractors or groups of users of agricultural machinery, the level of technical services and the existence of local support organizations.

Luigi Bodria
Old Dept.: Department of Agricultural Engineering; New Dept.: Department of Agricultural and Environmental Sciences - Production, Land use, Agroenergy
The Information and Communication Technology, (whose acronym is ICT) is a set of methods, technologies or to be more precise the systems of transmission, reception and processing of information. It is about combining in a single large field computing and telecommunications in order to store, process or transform and represent the information with the aid of the computer and of the technologies related to it.

The ICT can also be considered as a vital resource that allows handling quickly, effectively and efficiently the increasing volume of information. Precisely for this reason, the ICT must be considered as a strategic weapon able to provide qualitatively better data and information.

Transmitting information between network connected computers is a matter of great practical and conceptual importance that allows achieving the progressive convergence and integration of IT and telecommunications. The subsequent spreading of mobile phones and the progressive digitalization of the telephone: networks is leading to the integration and globalization of all the networks and to multimedia, namely computer-based communication according to the three basic ways of expressing and communicating knowledge: text, sound and image.

Applying ICT in the development processes allows exporting knowledge, providing training and services at low cost in remote places and the developing countries can avail themselves of this opportunity with more benefits. The applications can be very different from medicine to agriculture, education and services, thus giving innovative responses to basic human needs, and promoting more effective and affordable actions than the traditional development policies, which did not lead to significant results in many parts of the world. If we do not want 2015, the date specified by the United Nations for the achievement of the Millennium Development Goals, to be just another missed opportunity to foster a real and sustainable development of the poorest countries, it is through the new technologies that we can and should make a quantum leap.

It is precisely in this context that, thanks to the collaboration with the Observatory for Cultural and Audiovisual Communication (OCCAM), an agency that promotes the Infopoverty programme on behalf of the United Nations, a system of digital services to be implemented in the agricultural sector in support of the developing countries has been designed. It is about establishing “digital” relations with remote centers, through ICT, aimed at fostering knowledge, expertise and possibly at providing services necessary for enhancing the productivity of the agricultural sector, the quality and preservability of foodstuffs which is to guarantee food safety and health as an instrument to ensure and improve the quality of life of the needy populations.

One of the first pilot projects in this field concerns the e-Phytopathology and Parasitology, born from the collaboration between OCCAM and the Department of Agribusiness and Urban Systems Protection and Enhancement of Biodiversity of the University of Milan, which allows, through the digital instruments, to export qualified knowledge in the plants and food protection field to remote and needy communities of the developing countries in order to limit production losses by applying sustainable protection systems. A first application, currently in progress, was made under the project Food Security in Mahobong, financed by the Municipality of Milan. The small community of Mahobong, in Lesotho, will benefit both from the e-Phytopathology, the Parasitology and from the telemedicine, through a digital ultrasound service aimed at improving the pre-and post-natal mortality as well as maternal health.

Prof. Paolo Cortesi
Old Dept.: Department of Agri-Food and Urban System Protection and Biodiversity Enhancement
New Dept.: Department of Food, Environmental and Nutritional Sciences
Food represents, through a multitude of aspects, the necessary energy source for the activation of the biological processes: in the wild, every living creature becomes food for other beings, starting an energetic cycle between the single species. The evolutionary process leading from hominids to the modern man condition is characterized by a diversification in behavioral, morphological and functional adaptations linked to the primary need to find food (Terzani, 2005). The environment itself, with the available resources that it is able to provide, has a predominant impact on the life styles and strategies adopted by mankind all along the history: animal rearing and vegetable cultivation play a key role in mankind evolution by making possible the direct control of the food stocks. Agriculture and domestication, at first, and animal production, later on, have been created to satisfy one of the primary human needs: adequate and sufficient nutrition, not only for survival, but also for being able to carry out social activities within the community of origin. Every agricultural and animal production activity is primarily oriented to food production. Following a domestication phase and the creation of the group animal breeding, totally or partially depending on the man for nutrition, with the progressive control of the reproductive processes, mankind selected step by step the domestic species. At the same time, human social organization evolved from tribe to modern state leading to the ability of constantly and satisfactorily producing food so as to sustain the social structure (Dyamond, 1998). The actual challenge that animal production should face is the ability to supply food for a growing world population that will reach, over this century, a population of more than 8 billion inhabitants.

According to reliable forecasts on the subject, production of animal products should be increased by 63%. The increasing demand will mainly concern the emerging countries considering the constant when not decreasing trend food demand in the industrialized countries. Furthermore, in these countries, 90% of animal origin products will be needed to secure the minimum survival level. Thus the problem solution redirecting the excess of the Northern countries to the Southern countries turns out to be wrong as it requires a large investment on behalf of the developed countries in order to sustain the excess redistribution. On the contrary, these resources should properly be oriented to financially support the agricultural development in the emerging countries. By doing so, the well known risk of food colonization and economical dependence on the industrialized countries could be avoided.

A basic step to defeat malnutrition and nutritional insecurity in the emerging countries is to foster their own production of products of animal origin which supply proteins, lipids, minerals and vitamins, all very important for the human nutrition.

2.0 Zootechnics - Husbandry

ANIMAL PRODUCTION AS A DEVELOPMENT FACTOR

Prof. Miro Crimella and Dr Anna F.A. Cantàfora
Old dept.: Department of Animal Sciences
New dept.: Department of Veterinary Sciences and Public Health
The role of the scientific research

The scientific research should take into consideration a fundamental concept in order to respect the sustainability criterion: the technological transfer from the developed countries to the emerging ones should be organized by involving and exploiting the existing setting. The gap between the research and the reality in the emerging countries can be filled only through training and knowledge dissemination that arise from sharing, from a joint work, from the respect for the experience and for the history and not from a hierarchical imposition. The agricultural tradition of every people or community, in its broad sense, represents an important heritage, a starting point not to be destroyed by the imposition of a new model. It is important to remember what was said on the 5th -6th -7th of October 2004 in the Conference Hall of the Ministry for Foreign Affairs during the first Conference with the Italian academic world chaired by the General Director for Development Cooperation (GDDC): «[…] if it is true that the new challenges of the XXI century are the peace and the international security, it is even more urgent to understand that only through the respect for the human being and the protection of his inviolable rights, in the first place that to live, a future will be built where every citizen will be able to actively and freely participate to the development of his own Country. This commitment acquires a profound cultural meaning, where the education of the next generations becomes a clear priority. First of all, we believe that the University, while remaining committed to its traditional task to develop the scientific research and the teaching, is a meeting point where people that love knowledge learn to respect and consult each other, to communicate, to use their experiences to help the others […]. There is a growing awareness of the fact that the University is supposed to make a concrete contribution through the cooperation to the stabilization processes of the countries with a recently developed democracy, by encouraging, in time, the transition from the emergency to the collaboration, the civil integration and the development […]. We ask the University to be present, together with the Italian Cooperation, where the parties have difficulties in coming to an understanding in order to find a way to peace and dialogue aiming at drawing up concrete and fair agreements abiding the dignity of the human person. Getting the most out of the role of the University together with the cooperation in serving the society with the aim of solving the most urgent problems of the international community, is an expression of this new type of university cooperation programs which must certainly deserve a greater political and financial support! […] The university is expected to respond with new instruments to the new responsibilities held within the international community. In order to limit the fragmentation of the different experiences and the dispersion of the results, the official involvement of the whole academic structure has been required: by doing so, besides improving the effectiveness and the coordination of the actions, the effects of a cultural return are also enhanced, the cultural heritage being shared by the whole academic world and not only by the single actors. It is thus necessary, under a practical point of view, to identify and to coordinate in a coherent way the three “natural skills” involved in the university cooperation:

- the scientific and academic dimension;
- the management and organizational skills;
- the motivational drive, typical of the university’s willingness to serve the civil society and the international community.

It is necessary to distinguish between the traditional “academic collaboration” motivated mainly by scientific aims, and the “university cooperation for peace and development” that focuses on reaching the peace and the development of the society in which it is performed» (Min. G. Deodato, 2004).

Furthermore, the need to create a dialogue between the university and the NGOs within the broader demand for training specialized professionals already during university as well as the development of the internationalization process of the research becomes even more evident.

So, it is important to remind that in 2001 the paper “Dialogue and collaboration between the University and the NGOs in the Global Education field” already underlined «[…] the need that the university and the involved NGOs apply common training strategies aimed at the mutual exchange of theoretical, practical and methodological skills. An increasing involvement of the non-governmental field experts in post graduation courses would be desirable as well as a greater contribution of the university to the updating process of the knowledge useful for the further professional growth of those who operate in the non-profit programs. […] The underlying condition for the establishment of a dialogue between the university and the non-profit sector for a very strict integration of the two areas, is the gradual opening of the university when confronted with the local and international training requirements on cooperation and human rights» (Corradetti, 2001).
## 2.1

### PROJECT TITLE
Fight against poverty through the promotion of a sustainable development program based on biological agriculture and breeding in Misiones - Argentina

### THEMATIC AREA
Organic farming

### OBJECTIVES
- Overall: Improve food security and food safety in the province of Misiones.

### MAIN ACTIVITIES
1. Training courses for farmers on management, animal health and animal nutrition in organic pig farming.
2. Development of a farming system on pasture in association with the plantation of yerba mate.

### FUNDING SOURCE
Italian Ministry of Foreign Affairs MAE

### DURATION
From: February 2004 - To: January 2007

### POSSIBILITY OF RENEWAL/FOLLOW UP
1. Organization of training courses of farmers on sustainable management in pig farming.
2. Promotion of a favourable economical system

### TARGET COUNTRIES
Argentina (Province of Misiones)

### BENEFICIARIES
Organic farmers

### EXPECTED RESULTS
1. More than 100 farmers trained on management, animal health and animal nutrition in organic pig farming.
2. Conversion of 5 organic pig farms into extensive and integrated systems in Misiones Province.

### PROMOTING ORGANIZATION
NGO ICEI (Institute of International Economic Cooperation)

### MAIN PARTNERS
- Italian and International: University of Milan, Dept. of Animal Sciences
  - Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health
  - Faculty of Veterinary Medicine; Dept. of Animal Pathology; Veterinary Public Health and Hygiene; New Dept.: Dept. of Veterinary Sciences and Public Health

### CONTACT PERSON
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### REFERENCE PERSON
Casimiro Crimella Full Professor

## 2.2

### PROJECT TITLE
Improvement of productive activities in the agricultural and livestock field in Mouda, Extreme North Region (Cameroon) in collaboration with "Bethléem Foundation"

### THEMATIC AREA
Livestock breeding

### OBJECTIVES
- Overall: Nutritional self-sufficiency for a shelter for orphans and disabled people (Bethléem Foundation).

### MAIN ACTIVITIES
1. Training of 5 technicians on management, animal health and animal nutrition; specific: Support small farmers through organic pig farming.
2. Improvement of the structures and the productive and reproductive performances; specific: Improve the animal sector of a farm held by Bethléem Foundation.
3. Improvement of housing system used in the farm; specific: defined a check list for productive and reproductive performance; improvement of housing system used in the farm.

### FUNDING SOURCE
Smile ONLUS

### DURATION
From: July 2007 - To: June 2010

### POSSIBILITY OF RENEWAL/FOLLOW UP
1. Training 5 technicians on management, animal health and animal nutrition; local: Bethléem Foundation
2. Improvement of animal sector through sustainable housing system.
PROJECT TITLE
Support and structuring of the milk chain in the urban and periurban area of Maroua

THEMATIC AREA
Milk chain

REFERENCE PERSON
Casimiro Crimella Full Professor

CONTACT PERSON
Dr Anna F.A. Cantàfora
e-mail: imiuvezo@unimi.it
phone: 02 503 18041
Faculty of Veterinary Medicine
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

TYPE OF ACTION
• Education
• Research
• Technology Transfer
• Technical Cooperation

TARGET COUNTRIES
Cameroon (Maroua)

BENEFICIARIES
Milk farmers

EXPECTED RESULTS
1. Creation of a formal group of farmers;
2. Farmers trained on milking practices, management, animal health and animal nutrition;
3. Management of 1 dairy (milk collection centre) and 1 laboratory by farmers;
4. Increase of the quantity of milk available on the market of Maroua up to 20% along the year;
5. Decrease of seasonal fluctuations of price.

MAIN ACTIVITIES
1. Organization of farmers and training on milking practices, management, animal health and animal nutrition;
2. Installation of a laboratory for milk analysis;
3. Installation of a milk collection centre;
4. Training of 5 technicians on laboratory practices and dairy management;
5. Support milk processing and sale of dairy products.

FUNDING SOURCE
Cariplo Foundation

DURATION
From: June 2005 - To: May 2006

POSSIBILITY OF RENEWAL/FOLLOW UP
1. Organization of farmers in group
2. Organization of training course of farmers
3. Installation of structures managed by farmers

OBJECTIVES
Overall: Support and improve local milk production and quality of milk available on the market of Maroua
Specific: Reduce the seasonal fluctuations in quantity and quality of milk available on the market and stabilise the price

PROJECT TITLE
Development of the livestock sector

THEMATIC AREA
Milk chain, Pig chain

REFERENCE PERSON
Casimiro Crimella Full Professor

CONTACT PERSON
Dr Anna F.A. Cantàfora
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phone: 02 503 18041
Faculty of Veterinary Medicine
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

TYPE OF ACTION
• Education
• Research
• Technology Transfer
• Technical Cooperation

TARGET COUNTRIES
Cameroon

BENEFICIARIES
Farmers

EXPECTED RESULTS
1. Creation of a formal group of more than 1.000 farmers;
2. More than 1.000 farmers trained on milking practices, management, animal health and animal nutrition;
3. Management of 2 dairy (milk collection centres) and 2 laboratories by farmers in the Extreme-North Region;
4. Increase of the quantity of milk available on the market of the Extreme-North region up to 30% along the year. Decrease in the seasonal fluctuations of price;
5. Creation of 1 slaughterhouse and 4 pig markets in the Mayo Danay zone;
6. Construction of 1 school farm. Enrolment of more than 25 students.

MAIN ACTIVITIES
1. Organization of farmers and training on management, animal health and nutrition of pigs. Building of a slaughterhouse. Epidemiological investigations;
2. Organization of farmers and training on milking practices, management, animal health and nutrition. Installation and implementation of 2 laboratories for milk analysis and 2 dairy (milk collection centre). Epidemiological investigations. Support milk processing and sale of dairy products;
3. Support the creation of a school farm for the improvement of pig farming.

FUNDING SOURCE
European Union

DURATION
From: May 2007 - To: April 2009

POSSIBILITY OF RENEWAL/FOLLOW UP
1. Organization of farmers in group
2. Organization of training course of farmers
3. Installation of structures managed by farmers
## Project Title

### Setting up a milk collection center

- **http://agsl.lk.undp.org/unidata/docs/6/6_6_art-gold%20.programmes.in.brief.pdf**

### Thematic Area

Livestock chain

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## Reference Person

**Casimiro Crimella**

**Full Professor**

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## Type of Action

- Education
- Research
- Technology Transfer
- Technical Cooperation

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## Target Countries

Dominican Republic

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## Beneficiaries

- Teachers
- Trainers
- Students

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## Expected Results

1. Employment of different teaching approaches;
2. Creation and implementation of a dairy milk collection center and of an analysis laboratory;
3. Improved school courses and improved teaching animal centre.

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## Promoting Organization

UNPD (Santo Domingo - Dominican Republic)

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## Main Partners

**Italian and International:**

- Dept. of Animal Sciences, University of Milan
- **ITESIL (Technological Institute San Ignacio de Loyola)**

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## Objective

**Overall:** Improve food security and food safety in Dajabon Region.

**Specific:**

1. Improve teacher qualification (consultancy activities an teaching courses organization and coordination);
2. Support local milk production and improve milk chain for local market.

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## Main Activities

1. Organization of farmers and training on milking practices, management, animal health and animal nutrition. Installation and implementation of a milk analysis laboratory and a milk collection centre. Support milk processing and dairy products marketing;
2. Organization of farmers and training on management, animal health and nutrition of pigs;
3. Support the creation of a school farm for the improvement of pigs and rabbits farming.

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## Funding Source

UND, Municipality of Milan

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## Possibility of Renewal/Follow Up

1. Organization of training course
2. Installation of analysis laboratory
3. Installation of animal husbandry centre

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## Project Title

Contribution to the qualitative and quantitative improvement of the local milk production through sustainable technology transfer in the field of animal nutrition and of epidemiological control system for zoonosis transferred through milk consumption in Niamey (Niger)

### Thematic Area

Milk chain

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## Type of Action

- Education
- Research
- Technology Transfer
- Technical Cooperation

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## Target Countries

Niger (Niamey)

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## Beneficiaries

Milk farmers

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## Expected Results

1. Creation of a group of more than 500 farmers;
2. More than 500 farmers trained on milking practices, management, animal health and animal nutrition;
3. Management of 1 milk collection centre and 1 laboratory - still functioning - by farmers;
4. Increase of the quantity of local milk available on the market up to 30%.

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## Promoting Organization

Dept. of Animal Sciences, University of Milan

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## Main Partners

**Local:**

1. University of Niamey
2. Ministry of Animal Resources
3. ONG Karkara
4. **CLN (Cooperative of Dairy Products of Niamey)**

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## Funding Source

International Cooperation and Solidarity Office, Municipality of Milan

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## Duration

From: February 2007 - To: January 2008

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## Possibility of Renewal/Follow Up

1. Organization of farmers in groups
2. Organization of training course of farmers
3. Installation of structures managed by farmers
PROJECT TITLE
Development of milk chain in Niger for sustainable animal husbandry and conservation of biodiversity and environment

THEMATIC AREA
Milk chain

REFERENCE PERSON
Casimiro Crimella Full Professor

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Faculty of Veterinary Medicine
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

OBJECTIVES
Overall: Improve food security and food safety in the urban and periurban area of Niamey for the conservation of biodiversity and environment.
Specific: Support and improve local milk chain in the Say Department and the city of Niamey.

MAIN ACTIVITIES
1. Organization of farmers and training on milking practices, management, animal health and animal nutrition;
2. Training of farmers on animal selection criteria to preserve and improve animal biodiversity;
3. Installation of a laboratory for milk analysis;
4. Installation of a milk collection centre;
5. Training of 5 technicians on laboratory and dairy management;

FUNDING SOURCE
International Cooperation and Solidarity Office, Municipality of Milan

TYPE OF ACTION
• Education
• Research
• Technology Transfer
• Technical cooperation

TARGET COUNTRIES
Niger (Say Department and Niamey City)

EXPECTED RESULTS
1. Creation of a group of more than 200 farmers;
2. More than 200 farmers trained on milking practices, management, animal health and animal nutrition;
3. Management of 1 dairy (milk collection centre) and 1 laboratory by farmers;
4. Increase of the quantity of local milk available on the market up to 20%.

PROMOTING ORGANIZATION
Dept. of Animal Sciences, University of Milan

MAIN PARTNERS
Italian and International:
1. NGO Africa ‘70
2. University of Milan, Dept. of Veterinary Sciences and Technologies

Local:
CLN (Cooperative of Dairy Products of Niamey)

POSSIBILITY OF RENEWAL/FOLLOW UP
1. Organization of training course of farmers in group
2. Organization of training course of farmers
3. Installation of structures managed by farmers

PROJECT TITLE
Support and development of the milk chain in the area of Banifandou (Municipality of Niamey III - Niger)

THEMATIC AREA
Milk chain

REFERENCE PERSON
Casimiro Crimella Full Professor

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Faculty of Veterinary Medicine
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

OBJECTIVES
Overall: Support local milk production and improve the quality of milk available on the market of Niamey.
Specific: Reduce the seasonal fluctuations in quantity and quality of milk available on the market and to stabilise the price.

MAIN ACTIVITIES
1. Training on milking practices, management, animal health and animal nutrition;
2. Installation of a milk collection centre and of an analysis laboratory;
3. Milk conservation by cooling system.

FUNDING SOURCE
Mountain Community of Cusio Mottarone (VB, Italy)

TARGET COUNTRIES
Niger (Banifandou area and Niamey City)

EXPECTED RESULTS
1. More than 100 farmers trained on milking practices, management, animal health and animal nutrition;
2. Management of a milk collection centre and an analysis laboratory by farmers.

PROMOTING ORGANIZATION
Mountain Community of Cusio Mottarone (VB, Italy)

MAIN PARTNERS
Italian and International:
1. NGO Capen
2. NGO Karkara
3. CLN (cooperative of Dairy Products of Niamey)
PROJECT TITLE
Qualitative and quantitative improvement of milk production and strengthening of the local livestock activity and of productive chain in the urban and periurban area of Niamey (Niger)

THEMATIC AREA
Milk chain

TYPE OF ACTION
- Education
- Research
- Technology Transfer
- Technical Cooperation

TARGET COUNTRIES
Niger (Niamey)

BENEFICIARIES
Milk farmers

EXPECTED RESULTS
1. Creation of a group of more than 1.500 farmers;
2. More than 1.500 farmers trained in milking practices, management, animal health and animal nutrition;
3. Management of 1 milk collection centre and 1 laboratory by farmers;
4. Increase of the quantity of local milk available on the market up to 30%.

PROMOTING ORGANIZATION
Dept. of Animal Sciences, University of Milan

MAIN PARTNERS
Italian and International:
Local:
1. NGO Capen
2. NGO Karkara
3. University of Niamey
4. Ministry of Animal Resources

OBJECTIVES
Overall: Support local milk production and to improve hygiene quality of the milk available on the market of Niamey.
Specific: Reduce the seasonal fluctuations in quantity and quality of milk available on the market and stabilise the price.

MAIN ACTIVITIES
1. Organization of farmers and training on milking practices, management, animal health and animal nutrition;
2. Training of farmers on animal selection criteria to preserve and improve animal biodiversity;
3. Organization of a “fiere à betail scientifique”;
4. Installation of a laboratory for milk analysis;
5. Installation of a dairy (milk collection centre);
6. Training of 5 technicians on laboratory practices and dairy (milk collection centre) management;
7. Support milk processing and sale of dairy by-products.

FUNDING SOURCE
International Cooperation and Solidarity Office, Municipality of Milan

DURATION
From: April 2001 - To: March 2006

POSSIBILITY OF RENEWAL/FOLLOW UP
1. Organization of farmers in group
2. Organization of training course of farmers
3. Installation of structures managed by farmers

REFERENCE PERSON
Casimiro Crimella Full Professor
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Faculty of Veterinary Medicine
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

PROJECT TITLE
“Dialogo De Saberes: Project for the sustainability of cultivation, harvest and transformation of medicinal plants in Uruguay”

THEMATIC AREA
Organic farming

TYPE OF ACTION
- Research
- Technology Transfer
- Technical cooperation

TARGET COUNTRIES
Uruguay

BENEFICIARIES
Organic farmers

EXPECTED RESULTS
1. Interviews to organic farmers;
2. Literature search and data analysis;
3. Organization of a “fiere à betail scientifique”;
4. Training of 5 technicians on laboratory practices and dairy (milk collection centre) management;
5. Support milk processing and sale of dairy by-products.

FUNDING SOURCE
International Cooperation and Solidarity Office, Municipality of Milan

DURATION
From: July 2008 - To: June 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
1. Survey on the health status and the use of popular medicine in small scale organic farming in Uruguay;
2. Literature search and data analysis;
3. Organization of participatory workshops to discuss the results of the survey involving experts in alternative veterinary medicine, traditional medicine and organic farmers;
4. Experimental trial on the effect of the use of 4 medicinal plants identified during the participatory workshops;
5. Elaboration of a manual on the traditional use of medicinal plants in Uruguay and a report on the status of small scale organic farming;
6. Organization of a conference on the results of the project.

REFERENCE PERSON
Casimiro Crimella Full Professor
CONTACT PERSON
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Faculty of Veterinary Medicine; Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

OBJECTIVES
Overall: Improve the health status of people, facilitating the access to high quality, natural and low cost medicine.
Specific: Support and promote the access to high quality natural medicine in Uruguay through appropriate technologies.

MAIN ACTIVITIES
1. Survey on the health status and the use of popular medicine in small scale organic farming in Uruguay;
2. Literature search and data analysis;
3. Organization of participatory workshops to discuss the results of the survey involving experts in alternative veterinary medicine, traditional medicine and organic farmers;
4. Experimental trial on the effect of the use of 4 medicinal plants identified during the participatory workshops;
5. Elaboration of a manual on the traditional use of medicinal plants in Uruguay and a report on the status of small scale organic farming;
6. Organization of a conference on the results of the project.

FUNDING SOURCE
Region Lombardia

DURATION
From: July 2008 - To: June 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
The manual elaborated aims at valuing the traditional use of medicinal plants and it represents the result of participatory surveys and workshops involving almost all the small scale organic farmers of Uruguay.
**PROJECT TITLE**
Support and promote organic farming and breeding in Uruguay (BioUruguay)

**THEMATIC AREA**
Organic farming

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**REFERENCE PERSON**
Valentina Ferrante Researcher

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**OBJECTIVES**
Overall: To Support professionalism and encourage sustainable social and economic development of the agricultural sector through the strengthening of the organic production in Uruguay.  
Specific: To promote the development of organic sector as an integrated strategy to improve the farming practices carried out under organic farming and to promote opportunities for direct sales from producer to consumer, strengthening local associations of producers already existing and active in Uruguay.

**MAIN ACTIVITIES**
1. Improving organic farming: training courses in Uruguay for the members of ECA, a study tour of Italian organic farmers in Uruguay and later to organic farmers from Uruguay in Italy;  
2. Sustainable farming practices: development in Uruguay of pilot farms for each species and technical assistance to producers who are members of ECA;  
3. Support the activities of ECA in relation to marketing, consumer awareness, promotion of cooperative sales and local market;  
4. Promotion of the commercialization through networks of purchase managed by consumers in cooperation with the producers.

**FUNDING SOURCE**
Fondazione Cariplo

**DURATION**
From: September 2010 - To: August 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
In Italy, the dissemination of the experience of ECA about the local market and the involvement of consumers in the production chain can be a positive experience for the Italian producers.

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**PROJECT TITLE**
Defence and valorisation of biodiversity in Niger by means of environmental educational programs and operative strategies

**THEMATIC AREA**
Biodiversity conservation

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**REFERENCE PERSON**
Silvana Mattiello Associate Professor

**CONTACT PERSONS**
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Faculty of Veterinary Medicine  
Old Dept.: Dept. of Animal Sciences; New Dept.: Dept. of Veterinary Sciences and Public Health

**OBJECTIVES**
Overall: Maintenance of the biodiversity of terrestrial natural ecosystems by means of specific actions related to their conservation and defence.  
Specific: Biodiversity valorisation in the transition area of the Biosphere Reserve of Park W, through the reinforcement of the ability of the actors involved in biodiversity conservation and set up of operative strategies of natural resources.

**MAIN ACTIVITIES**
1.1 - Monitoring wild-domestic animal interactions in areas within and around Pak W;  
1.2 - Analysis of sanitary interactions between wild and domestic animals;  
1.3 - Set up of a diagnostic to support farming and transhumance;  
2.1 - Formation of farmers about animal health issues;  
2.2 - Formation of Park rangers for correct spread of information about biodiversity and environmental education;  
2.3 - Production of informative material on paper and digital support;  
2.4 - Contribution to the preparation of a Visitor Centre;  
2.5 - Educational programs on environmental protection for children in school age.

**FUNDING SOURCE**
International Cooperation and Solidarity Office, Municipality of Milan  
(Others, to be found)

**DURATION**
From: April 2011 - To: March 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
To be defined
Milk production chain as a development driving force

Milk production is an increasing sector in the emerging countries following an evolution of the nutritional habits towards a higher consumption of animal origin products. It is extremely important to remember that African pastoral societies developed in environments hostile to the human survival, could adapt and survive mainly thanks to their herd milk. Milk is historically used as basic food and exchange good, so it plays a fundamental role in these societies. Even if it is considered a basic food, we are very far away from the self-sufficiency determined by the local production so it is necessary to import a large amount of dried milk from the industrialized countries with a consequent increase of the national debt of the importing countries. Environmental, social and economical limitations influencing domestic animals and their management strictly limit the development of a truly self sufficient sustainable local milk production chain able to satisfy a constantly increasing demand. Nowadays milk and milk production chain system is being developed by taking into consideration the market demand of the urban areas. However, in this modernization process, strong tradition-linked elements are commonly present, merging tradition with modernity so that the milk acquires, throughout the history, the importance of an ancestral element as well as of a technologic and industrial symbol. The role of the milk in the tropical animal production is fascinating and it fits perfectly in a course of study, research and training mediated by cooperation with a participatory approach for a sustainable development. This course has allowed the Department of Animal Science of the Faculty of Veterinary Medicine to build, in a considerable time, a team believing in this field as a determin-
In the globalization context, a discontinuous and unequal global process that expands through different fields of the society such as the economical, the political, the judicial and the social ones, it is essential to create relations between the developed and the developing areas with the aim of facilitating the usage of scientific and technological components that allow the improvement of the conditions in which the activities are carried out in both areas.

The training of talented professionals and the ability to establish relationships with the society is one of the reasons for which universities exist. Working according to this philosophy makes it possible to respond to the demand of the productive and academic areas whose research and development activities are essential to keep the society abreast of the progress of the modern world.

As for the food, it is useful to remind that food safety and the prevention of the diseases caused by food are a constant concern for the international public health. The authorities responsible for public health at global level are periodically alerted of microorganisms’ mutations and of new chemicals associated with food as well as of changes in the production techniques that generate new risks. In order to combat these challenges, it is critical that the authorities of all countries collaborate and share their experience as the food security problems of a country can easily extend to the others as a result of the fast globalization of the food production and marketing.

It is therefore necessary to:

1. Promote partnerships and collaboration between the different countries.
2. Help the nations enhance their food risk management capacity
3. Promote a fast exchange of information on the food risks

Being aware of these issues, the Faculty of Agriculture of the University of Milan, within which the Department of Food and Microbiological Sciences and Technologies, now DeFENS (Department of Food, Environmental and Nutritional Sciences), is operating, has always promoted initiatives and developed projects aiming to enhance the capacities of the developing countries in order to set up an efficient food quality control or to improve the foodstuff manufacturing and preservation systems. It is important, therefore, to emphasize that, in the specific fields of foodstuff and foodstuff marketing, the compliance with legal requirements and quality standards is essential in the producing countries as well as on the international market.

In this context, the twenty years old collaboration between DISTAM (Department of Food and Microbiological Sciences and Technologies), now DeFENS (Department of Food, Environmental and Nutri-
tional Sciences), and the south American countries, particularly Colombia, is an example to follow. As a matter of fact, thanks to the collaboration with the Italo-latin American Institute (IILA), an international body that has its headquarters in Rome and includes Italy and the twenty republics of Latin America, DISTAM has actively contributed not only to the reinforcement of the institutions responsible for controlling the foodstuff, but also to the training of the human resources that would be able to provide a valuable help to the local companies for the production of safe food products by taking into account the sustainability as well. Practically we operated according to three directions:

- Creating modern control labs and supplying modern instrumental equipment
- Training for technical staff in Italy and on-site
- Sending missions of Italian experts to the different institutions

These actions have contributed to the strengthening of the infrastructures and to the training of staff that has become the point of reference of many governmental institutions. The modernization of the laboratory’s equipment and the staff training have made it possible for ICTA to activate numerous analytical methods that, together with the implementation process of the Quality System, have turned this into one of the most modern and specialized laboratories of the National University of Colombia. Thanks to this activity, the Laboratory of Food Quality Control of the ICTA is currently the leader in its field and has been recognized by the Ministry of Social Protection and the Colombian Family Welfare Institute as a member of the National Network of Laboratories carrying out work for the state in the food quality control area.

This recognition has obviously had a positive impact on the teaching activities since the practical part of various subjects that are related to food science and technology is being developed in this scenario. The existence of this modern laboratory meets the needs of students from different degree programs of study in the field of food: Nutrition and Diet, Animal Science, Chemical Engineering, Agriculture and Agricultural Engineering. Likewise, it meets the needs of postgraduate students: Master and PhD in Chemical Engineering, Master and PhD in Agricultural Science, Master in Agricultural Engineering, Master in Microbiology and specialization in Food Science and Technology. It is worth recalling that the students of the Universidad Nacional de Colombia not only belong to the different branches of the National University (Palmyra, Medellin, Amazonas, Arauca, and San Andrés), but also to Universities of other Colombian regions such as the Pedagogical and Technological University Tunja, the University of Pamplona, the University of Cordoba, the University of Amazonia, and visitors from other countries like Ecuador, El Salvador and Honduras as well.

As for the research and service activities, it is important to point out that the ICTA is currently involved in the following programs:

1. Contract with the Administration of Cundinamarca for the training of professionals in charge of promoting the innovation and the development of the milk and fruit production chains in several centres of the region,
2. Participation in the elaboration of the new “Composition Table of the Colombian Foodstuff” promoted by the Colombian Family Welfare Institute,
3. Participation in the three-years programme “Breakfasts for children” under the patronage of the President of the Republic,
4. Study of technical regulations for the Ministry of Social Protection,
5. Activities as a Certified Laboratory of the Operational Unit of the National Milk System, in the interlaboratory analysis system, at a physical-chemical and microbiological level.

Brief, we can say that, despite the difficulties and the conflicts that Colombia has been going through, the reinforcement of the institutions responsible for controlling the foodstuff has allowed setting up in the country an efficient foodstuff quality control system that will obviously have positive effects on the marketing of the local productions in the advanced countries. Currently, this cooperation has been extended to all the Andian countries and the results appear to be promising.
PROJECT TITLE
Bioactive compounds for the valorisation and promotion of traditional food

THEMATIC AREA
Agriculture and food science

RECEIVED PERSON
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Old Dept.: Dept. of Agrifood Molecular Sciences;
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OBJECTIVES
Overall: Valorisation of traditional food.
Specific:
1. Identification of taste compounds;
2. Identification of bioactive compounds;
3. Exploit their potential applications in agrifood and pharmaceutical industry and in medicine;
4. Strengthening of scientific collaboration in the food area.

MAIN ACTIVITIES
1. Scientific cooperation: identification of active compounds in traditional food by taste guided analysis; Sensory evaluation; Structure determination of bioactive compounds; Comparative analysis of the perception of taste in Italian and Korean consumers; Taste- receptor binding assay with cloned GPCR and TRP receptors; Molecular modelling of taste receptors and their binding with substrates; Screening for other bioactivities with applications in pharmaceutical, biotechnology, agropharma industry etc.
2. Education and dissemination;
3. Launch of the joint TASTELAB initiative in connection with EXPO 2015, Milano.

EXPECTED RESULTS
1. Collection and analysis of food and food plants used in traditional gastronomy;
2. Isolation of compounds with specific bioactivities;
3. In vitro activity assays with cloned receptors;
4. Studies of taste properties by sensory evaluation;
5. Studies of potential applications and technology transfer: use as food additives; bioactivity toward insects, bacteria, fungi, nematodes etc; applications in cultural heritage protection as antifouling agents etc;
6. Human resources: exchange of researchers and students; organisation of seminars and workshops; joint publication;

PROMOTING ORGANIZATION
-

MAIN PARTNERS
Italian and International:
Faculty of Agrifood Molecular Sciences, University of Milan
Local:
Korea Food Research Institute (KFRi)

TYPE OF ACTION
- Bilateral cooperation (Great Relevance Projects)
- Research
- Technology Transfer

TARGET COUNTRIES
South Korea

BENEFICIARIES
General population

3.1 3.2

PROJECT TITLE
VARZEA - Agronomic valorisation of the cultivated areas involved in Amazon floods.

THEMATIC AREA
Environmental and food safety. Agronomic innovation and traditional knowledge

RECEIVED PERSON
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Faculty of Agriculture of Milan
Old Dept.: Dept. of Plant Production;
New Dept.: Dept. of Agricultural and Environmental Sciences - Production, Land use, Agroenergy

OBJECTIVES
Overall: Contribute to the improvement of food sovereignty for farmers in Varzea zones in Amazonia and Pará. Create a research institutes network for the innovation of agrifood system in harvest and cultivation areas.
Specific:
1. Realization of dedicated GIS;
2. Biochemical characterisation of Brasilian traditional forest and cultivated products;
3. Collaboration with local research centre EMBRAPA and share of data, information and knowledge;
4. Identification of sustainable forms of fair trade of cupacú and guaraná.

TARGET COUNTRIES
Brazil (Amazonia, Pará)

BENEFICIARIES
1. Farmers of Varzea zones
2. Small transformation industries
3. Small local traders

EXPECTED RESULTS
1. Geographic Informative System for the census, monitoring and valorisation of Varzea zones in the Amazonian Basin of Amazonia and Pará;
2. Characterisation and valorisation of some traditional products from the Amazon Forest (Guarán and Cupacú);
3. Genetic improvement and agronomic use for the strengthening of food security of Caupi (Vigna unguiculata and species cultivated in Varzea);

PROMOTING ORGANIZATION
Dept. of Crop Science and of Food and Microbiological Sciences and Technologies, University of Milan

FUNDING SOURCE
Cariplo foundation

DURATION
From: October 2009 - To: November 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

MAIN PARTNERS
Italian and International:
1. CICSA (Interuniversity Centre for Agri-food and Environmental Cooperation to Development), CRA of Montanasso Lombardo, CRA of Milan former IVTPA
2. Cariplo Foundation
Local:
EMBRAPA

FROM 96 97
PROJECT TITLE
Exploiting the structural flexibility of proteins

THEMATIC AREA
Biochemistry, protein structure

OBJECTIVES
Overall: Exploit the ligand-binding properties of protein.
Specific:
1. Modulate the ligand-binding properties of proteins by physical treatments;
2. Assess the determinants of ligand-binding specificity;
3. Evaluate the stability of complexes between modified food proteins and ligands of biological interest.

MAIN ACTIVITIES
1. Use spectroscopic techniques to evaluate structural changes ensuing from physical treatment of beta-lactoglobulin (a protein in whey residual from cheese-making);
2. Assess the binding of hydrophobic spin probes to the modified protein by EPR;
3. Carry out competition experiments between the spin probes and molecules of pharmacological relevance.

FUNDING SOURCE
NATO Collaborative Grants

DURATION
From: November 1999 - To: November 2001

POSSIBILITY OF RENEWAL/FOLLOW UP
not with the same local partner (retired in 2009)

TYPE OF ACTION
• Research

TARGET COUNTRIES
Israel (Beersheva)

BENEFICIARIES
1. Scientific community
2. Students
3. Dairy industry

EXPECTED RESULTS
Identification of the structural and molecular basis for using cheap proteins residual from food processes (cheese making, in the present case) as carriers for drugs (or nutritional supplements) that are degraded during digestion when administered in their free form.

The investigated proteins are known to undergo transient and reversible structural modification during physical treatments (heat, pressure). The transiently modified form can bind molecules that are then trapped inside the protein when the protein returns to the original conformation. Since this protein is stable at the acidic pH of the upper digestive tract, the bound molecule is then available for absorption. This study has shown that this approach is feasible, and that the investigated protein contains at least two independent binding sites for hydrophobic molecules.

PROJECT TITLE
Effects of treatments on the functional features of milk proteins

THEMATIC AREA
Food Biochemistry

OBJECTIVES
Overall: Assess process-induced modifications in milk proteins.
Specific:
1. Evaluate the effects of mechanical treatments on the surface properties of milk proteins;
2. Evaluate the effects of changes in the medium composition (e.g., by ultrafiltration) on the structural properties of milk proteins.

MAIN ACTIVITIES
1. Use spectroscopic probes to assess process-induced modifications in milk proteins.
2. Use ion-specific electrodes to assess process-dependent changes in the ability of milk proteins to interact with micronutrients;
3. Use spectroscopic techniques to assess binding of nutritionally relevant microelements (Cu, Fe) to processed milk proteins.

FUNDING SOURCE
Italian Ministry of Foreign Affairs

DURATION
From: February 2002 - To: February 2003

POSSIBILITY OF RENEWAL/FOLLOW UP
Exchange of students currently proposed
**OBJECTIVES**

- **Overall**: Functional and nutritional characterization of different local varieties of yams and cassava selected on the basis of their cooking/technological aptitude and ripening stage. Evaluation of nutritional and technological quality.
- **Specific**: four autochthonous varieties of Dioscorea alata (2 “bad cooking and 2 good cooking”) and two autochthonous varieties of Dioscorea cayenensis-rotundata (one “bad cooking and one good cooking”) will be evaluated at 9, 12 and 18 month of ripeness on the basis of:
  1. Histological characterization;
  2. Proximate composition;
  3. Physical-chemical properties;
  4. Starch characterization.

**MAIN ACTIVITIES**

- 1. Histological characterization (fresh, cooked tissue and starch grains) by means of light microscope observations;
- 2. Chemical composition by AOAC methods;
- 3. Minerals content;
- 4. Physico-chemical properties: Visco-amilographic evaluation;

**FUNDING SOURCE**

Bioversity International Vavilov–Frankel Fellowships 2009 and Private Companies

**DURATION**

From: January 2010 - To: December 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**

Yes.

**PROJECT TITLE**

Andean Regional Network of strengthening Institutes of Food and Technologies Sciences

**THEMATIC AREA**

Food

**TYPE OF ACTION**

- Education/training
- Technology Transfer
- Research

**TARGET COUNTRIES**

1. Colombia
2. Ecuador
3. Bolivia
4. Peru
5. Venezuela

**BENEFICIARIES**

1. Professors, researcher, students
2. Local industries
3. Governmental programmes of food security
4. Consumers

**EXPECTED RESULTS**

1. Improvement of acquired knowledge of the Institutes;
2. Increase in the number of students of the University.
3. The Institutes have expert personnel that can provide assistant to local industry and governmental services to national food security

**PROMOTING ORGANIZATION**

- MAIN PARTNERS
  - **Italian and International:**
    1. University of Milan
    2. IILA (Italian- Latin American Institute)
  - **Local:**
    1. ICTA, Institute of Food Sciences and Technology, National University of Colombia
    2. ICTA, Institute of Food Sciences and Technology, Central University of Venezuela
    3. Technical University of Ambato - Ecuador
    4. Agricultural University of La Molina - Peru
    5. Foundation Institute of Food Technology - Bolivia

**REFERENCE PERSON**

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Old Dept.: Dept. of Food Science and Microbiology; New Dept.: Dept. of Food, Environmental and Nutritional Sciences
**PROJECT TITLE**
Strengthening of the Institute of Food Sciences and Technology (ICTA) of Bogotá

**THEMATIC AREA**
Food

**OBJECTIVES**
- Overall: Strengthen the Institute as reference centre to the academic level and as technical assistant to food industry in the area of quality control.
  - Specific: 1. Renew the ICTA’s infrastructure with adequate instruments in order to make analytical measurements of physical, chemical and microbiological properties according to the national and international law; 2. Improve ICTA’s personnel education in order to strengthen the capabilities as researchers and to implement analytical methodologies directed to evaluate physical, chemical and microbiological characteristics of food.

**MAIN ACTIVITIES**
- 1. Feasibility studies for the implementation of new laboratory; 2. Donation of instruments; 3. Training of ICTA’s personnel in using the instruments; 4. General training of ICTA’s personnel in Colombia and in Italy.

**FUNDING SOURCE**
Ministry of Foreign Affairs through IILA (Italian-Latin American Institute)

**DURATION**
From: 1997 - To: March 2007

**POSSIBILITY OF RENEWAL/FOLLOW UP**
-
**PROJECT TITLE**

Applied research for the valorization and transformation of natural resources into a fight process against hunger in Chad and Cameroun

**THEMATIC AREA**

Natural Resources and Technology

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**REFERENCE PERSON**

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Full Professor

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Old Dept.: Dept. of Public Health, Microbiology and Virology
New Dept.: Dept. of Health

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**TYPE OF ACTION**

- Research
- Technology Transfer

**TARGET COUNTRIES**

1. Chad: N’Djamena, Vallée du Logone
2. Cameroun: Maroua, Ngaoandere, Vallée du Logone

**BENEFICIARIES**

1. 1000 researchers, students, teachers for the pilot projects executions in the field;
2. 1600 members of the micro forestall business involved in economics activities link with natural local resources valorisations.

Estimated Total Number: 2600 people.

**EXPECTED RESULTS**

1. Control in a sustainable way of the applied research projects management by the partner institutions, Definition and adoption of tools and research methods share and co-ordinated;
2. Implementation of three new technologies at least at pilot level (ex: for the Moringa Oleifera leaves drying process, for the CO2 supercritical extraction, for the extrusion of combustible bricks of solid ground);
3. Diffusion of the principal results of the action to the regional and international research institutions and to the local population.

**PROMOTING ORGANIZATION**

- **MAIN PARTNERS**
  - Italian and International: 1. NGO ACRA
  - CeTAm, University of Brescia
  - Dept. of Public Health, University of Milan
  - Local: 1. National Centre for Nutrition and Food Technology
  - National Superior School of Agro-industrial Sciences of Ngaoundere
  - University of N’Djamena

**OBJECTIVES**

**Overall:** Contribute to the development of the exchanges and the network, at international and intra-ACP level, of research institutions for a best exploitation, share and quality of its results with the aim of improving the life and health conditions in Chad and Cameroun according to the Millennium Development Goal n° 1.

**Specific:** Make partner institutions able to develop scientific applied researches of high level to contribute to the improvement of health conditions, of the control of the environmental property and of the general increase of life level of the population according to the sustainable and participative development process.

**MAIN ACTIVITIES**

1. Definition of common methods of applied research;
2. Participatory researches within the communities to define the basic needs;
3. Identification of pilot projects;
4. Development and test of pilot projects;
5. Study, test and development of a type fortified flour with Moringa Oleifera and other resources available locally;
6. Organisation of international seminars for the diffusion of the results of the action;
7. Diffusion of the results among the local communities.

**FUNDING SOURCE**

NGO ACRA, European Union, CeTAm, University of Milan

**DURATION**

From: November 2009 - To: November 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**

- **PROJECT TITLE**

Fighting malnutrition through the valorisation of Moringa Oleifera as dietary supplement

**THEMATIC AREA**

Nutrition

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**REFERENCE PERSON**

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Old Dept.: Dept. of Public Health, Microbiology and Virology
New Dept.: Dept. of Health

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**TYPE OF ACTION**

- Research
- Technology Transfer
- Nutritional education
- Nutritional research

**TARGET COUNTRIES**

Chad (Goundi, department of Mandoul)

**BENEFICIARIES**

1. 5.000 young women and children (0-5 years)
2. 600 sanitary agents in particular women

**EXPECTED RESULTS**

1. Dissemination of the knowledge of the plants and of the main possibilities of use of its products among the sanitary agents and the population of the area;
2. Adoption of the technique of production of fortified flour with Moringa Oleifera by the women groups;
3. The population, in particular the mothers, gets new knowledge concerning the nutritional value of the products deriving from Moringa oleifera. They are able to use it and to foster the use in their family diet;
4. Analysis and test of the Moringa cultivated in Chad;
5. Identification of possible contraindications.

**PROMOTING ORGANIZATION**

- **MAIN PARTNERS**
  - Italian and International: ACRA NGO (Association of Rural Cooperation in Africa and Latin America)
  - Local: 1. National Centre for Nutrition and Food Technology
  - ATCP (Association of Chadian Community for Progress)

**OBJECTIVES**

**Overall:** Fighting malnutrition: Moringa oleifera, dietary supplement in children’s hospital.

**Specific:** Diffuse the use of the Moringa oleifera derivate products as nutritional supplements among the sanitary agents and the rural households of Goundi sanitary district.

**MAIN ACTIVITIES**

1. Sensitisation of the population on the access to health structures;
2. Training course for sanitary agents;
3. Ideation and distribution of pedagogic material;
4. Information seminar on Moringa oleifera and its diffusion in Chad;
5. Sensitations via radio;
6. Support to feminine groups for the production of leaves flour;
7. Training on the production of flour leaves and on conditioning of Moringa;
8. Definition of a research protocol in order to test the leaves flour produced in Chad.

**FUNDING SOURCE**

NGO Acra, Regione Lombardia, Nutrition Centre of Goundi

**DURATION**

From: March 2006 - To: September 2008

**POSSIBILITY OF RENEWAL/FOLLOW UP**

See the project: “Applied research for the valorization and the transformation of natural resources into a fight process against hunger in Chad and Cameroun”
4.0 Food and water safety

ENSURING HYGIENICALLY SECURE WATER AND FOOD

Prof. Mirella Pontello  
Old dept.: Department of Public Health Microbiology and Virology  
New dept.: Department of Health

The terms Foodborne and waterborne disease identify a large group of disorders of growing importance for global public health, due to the ingestion of food or water contaminated by microbiological agents or chemical substances. This environmental contamination may occur in every step of the food supply chain (production, transformation, conservation or distribution of food items). The consequences for the human being vary from mild gastroenteritis to more dramatic, invasive or even lethal forms, with systemic or neurological involvement.

For many reasons it is not easy to give an accurate assessment of the global incidence of foodborne or waterborne diseases, but they definitely represent an important cause of morbidity and mortality around the world (in 2008 WHO reports the death of 2.5 million of people from diarrhea, mainly due to the consumption of contaminated food/water).

The features and the health consequences of this group of diseases depend mainly on the social and economical context. Even if the global socio-economical background is heterogeneous, it is possible to identify two different subsets: low-income countries and high-income countries (with several intermediate situations).

- Low-income countries (developing countries): in low-income countries the most relevant cause of children morbidity/mortality is diarrhea and other gastroenteritis. According to WHO most recent assessment, diarrheal diseases represent the second cause of death (8.2% of the total, 4.4% in middle-income countries). In this context, infectious diseases are often associated to malnutrition, a dramatic phenomenon that is present as an underlying cause in 53% of all deaths in children under 5 years. A poor diet and infection frequently coexist and interact setting up a "vicious cycle", strictly connected to poverty. Poverty determines a lot of consequences: lack of food, vital facilities (water works, garbage and sludge disposal), health facilities and difficulty in health care access. This cycle has an impressive impact mostly on pre-school age children (< five-year-old): according to a recent review of scientific literature, in low and middle-income countries diarrhea in pre-school age children causes 18.7% of all the deaths (1.870.000 cases of death, mostly - 1.384.000 - in only 15 African and Asian countries). Etiologically, the fecal-oral route is the most important route of transmission, causing diseases like Cholera (the most remarkable example) or typhoid fever, shigellosis, parasitic diseases (amoebiasis) and viral infections. The fecal-oral transmission can be synthesized as follow: infected/sick man → germs eliminated through feces → environmental contamination (ground or superficial water) → food contamination (irrigations of vegetable crops with contaminated water, or fishing industry) → consumption of contaminated food. Alternatively the fecal-oral route can be shorter, with direct
contamination between hands of the carrier and food (stool → hands → food → mouth).

• High-income countries (developed countries): this context is completely different from low-income countries, even if about one third of population suffers from foodborne diseases once a year (in the USA about 76 million cases occur every year, with 325.000 hospitalizations and 5.000 cases of death from foodborne diseases). Foodborne diseases (and most rarely waterborne diseases) are associated to profound changes in technological procedures within the food supply chain (like the globalization and the lengthening of the food chain, thanks to food preservation, etc.), to different food consumption habits and a highest prevalence of medically fragile people (elderly, diabetic and immunocompromised person). In this context the routes of transmission are different and more complex: usually there is an animal reservoir of infectious agents or pathogens live directly in the environment. The possibilities of contamination in the food supply chain are broad and usually happen far from the final consumer. The transmission route can be synthesized as follows: animal reservoir/environment → food → consumer. In this route there are other contributing factors that can foster pathogen survival/growth inside the food product.

If there are a lot of elements that justify a distinction between developed and developing countries, it is important to put in evidence that there are also a lot of transversal issues, facilitated by the market globalization and by people's mobility around the world. Even if we can’t get to the heart of the matter in this text, we mention by way of an example the use of phytodrugs in farming (e.g. pesticides), farming of genetically modified vegetables (GMO) or aquaculture techniques.

From what we have briefly described, it can be inferred that - as underlined by international bodies as WHO and FAO in their latest guidelines - safety in food and water-supply is a matter of global interest for Public Health Care, even if a distinction should be made for the different socio-economic backgrounds. In fact, in the developed countries, in order to achieve food safety, there are different authorities and institutions that participate in a range of activities such as monitoring, surveillance, outbreaks management, information and education programs and there are alimentary laws and regulations in force. This complex system set up a real food safety “structure” (from farm to fork, following the food supply chain from the initial production to the final consumer), which is associated with a very strong awareness among the population on food consumption risks. It is important to say that the complexity of the food supply chain in the developed countries (and in the rest of the world as a result of globalization) comes along with a certain degree of exposure to new risks of different nature (by way of an example we can mention mad cow disease or, on a massive scale, the risks connected to aquaculture systems). In spite of this important commitment of the institutions and the food industry, during the last decades people have developed a growing concern (that often results in alarm) even if the safety level in food production can be judged today as satisfactory. In low-income countries the situation is really different: here the food safety must meet the needs of food security, that is the necessity to fight malnutrition ensuring a sufficient food amount to the entire population. In this setting dominated by poverty and lack of resources, the food safety system is obviously very fragile and less structured and the food security issue is understandably perceived as a priority even by the population. The lack of infrastructure and the urbanization as well as the food production-distribution methods (especially those defined by FAO as “informal foods” - fresh or transformed products that are sold directly to the final consumer, such as the sea-food or the street-food), contribute to the fragility of the food safety system.

The safety in water-supply is strictly connected to the food safety. Although in the developed countries the drinking water-supply is an acquired fact, almost taken for granted, in the rest of the world this problem is far from being solved. It is estimated that 1,1 billion of the people around the world do not have access to safe water, and 2,4 billion of people do not benefit from basic water treatments (with a projection of growth to 2,7 billion in 2015). With intervention in this area it would be possible to cut of 4% of the global disease burden. There are a lot of waterborne diseases, most of them infective (diarrhoeal diseases with different etiology such as cholera, typhoid fever, etc.) and many of which are associated to water ingestion or to contaminated water usage for cooking, even if it is important to mention other situations in which water is implicated in the development of the disease: water-washed, water based and water-related-vector.

In this volume we mention the records of four international cooperation projects, followed in different aspects by researchers from “the University of Milan” with the main theme of “Food and Water Safety”. More precisely:

• a project in Columbia that sustained the training of skills in food safety, for the production of local food items.
• a project in China that analyzed the risk connected to broadly use of phytodrugs in agriculture, focusing on training and on the technological transfer.
• two projects in Mali and Tanzania for water safety, both with educational training and the development of skills in the local communities.
• a project in Nigeria for improving the skills on the problems related to food packaging.
• a project in Argentina, Brazil, China, South Africa focused on the evaluation of the risks and the benefits of consuming nutritional supplements.
3. Staff of the Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division in Hong Kong.

3. International Centre for Pesticides and Health Risk Prevention, Luigi Sacco Hospital, Milan.

2. International Centre for Rural Health, San Paolo University.

3. University students in Milan.

PROJECT TITLE
Programs of education on rural health

THEMATIC AREA
Rural Health

OBJECTIVES
Overall: Improve chemical risk assessment and management.
Specific: 1. Provide skills for managing pesticide evaluation process in the pre-marketing phase;
2. Support a process addressed at improving local systems for pesticide prevention, risk assessment and management.

MAIN ACTIVITIES
Preparation and delivery of a 4-day course involving the whole personnel of the Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division of Honk Kong. The programme of the course was the following:
a. Introduction to pesticides, including classification, mode of action, active ingredients and formulation, information on registration, source of information; b. Pesticide authorization process (principles); risk assessment in the pre-marketing phase; mode of application of pesticides and health risks, personal protective equipment; c. Exposure measurement and evaluation; d. Health effects (acute and chronic); mode of action; specificities of single compounds; e. Epidemiological data; special and emerging problems (neurobehavioral effects; endocrine disruption); f. Environmental effects; g. Role play and Practical exercises; h. General discussion: the organization of a National System for Pesticide Risk Prevention. Question/answer session.

FUNDING SOURCE
Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division, Honk Kong

DURATION
From: 1st - To: 10th November 2008

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes, periodically. Format usable in other tropical countries.

TYPE OF ACTION
• Technology Transfer

TARGET COUNTRIES
China (Hong Kong)

BENEFICIARIES
1. Agricultural workers
2. General population and food consumers of Hong Kong
3. Staff of the Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division in Honk Kong.
4. Natural environment

EXPECTED RESULTS
Improvement of the capacity of the Province to perform pesticide risk assessment and management, in both pre and post marketing phase. In premarketing phase, main areas of improvement are registration, authorization and labelling with a particular attention for new compounds. In post marketing phase, specific skills have been provided in the field of risk assessment and management, environmental and human health protection (both pesticide workers and general population).

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
1. Dept. of Occupational and Environmental Health, University of Milan;
2. International Centre for Rural Health, San Paolo Hospital
3. International Centre for Pesticides and Health Risk Prevention, Luigi Sacco Hospital, Milan.

Local:
Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division, Honk Kong.

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New Dept.: Dept. of Health

PROJECT TITLE
Improvements of drinking water quality-quantity in remote villages of Mali

THEMATIC AREA
Applied ecology and microbiology

OBJECTIVES
Overall: Improve water availability
Specific:
1. Water potabilization treatments;
2. Groundwater exploitation;
3. Education on water sustainability.

TARGET COUNTRIES
1. Mali
2. Other countries of the Sahel region

BENEFICIARIES
(Dogon population, Mali)
1. Village population
2. University students in Bamako
3. University students in Milan.

EXPECTED RESULTS
1. Set up of a self-sustaining protocol for water disinfection in small remote villages;
2. Creation of a reference scientific group with complementary competences in the field of water exploitation for drinking purposes able to support non-governmental organizations (NGO) actions in developing countries.

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
- Local:

FUNDING SOURCE
Yacouba for Africa (NGO)

DURATION
From: January 2010 - To: January 2013

POSSIBILITY OF RENEWAL/FOLLOW UP
-
4.3

PROJECT TITLE
Fellowship on packaging technologies and solutions for developing countries

THEMATIC AREA
Food Safety and Food Processing/Output E21

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OBJECTIVES
Specific:
1. Advanced knowledge transfer regarding the Food Packaging technologies and materials;
2. Ability in testing the reliability of different packages;
3. Expertise in the main food packaging problems.

MAIN ACTIVITIES
1. Collaboration to the ongoing researches;
2. Visits to testing laboratories and manufacturing companies;
3. Study and lectures. The beneficiary will work with the staff of the Food Packaging Labs, in different research activities related to the characterization of food packaging materials, the development of new packaging solutions, the optimization of the shelf life of different food products. The beneficiary will be also involved in contacts with Companies and private testing laboratories, spending part of her fellowship time in the facilities of these Packlab’s partners. The beneficiary will be also instructed on the most important issues of Food Packaging, letting her studying scientific literature and specialized text books.

FUNDING SOURCE
ICS UNIDO and own funds of DISTAM

DURATION
From: July 2001, to December 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Not known

TYPE OF ACTION
• Education, Technology Transfer

TARGET COUNTRIES
Nigeria

EXPECTED RESULTS
The capacity of selecting the best and most suitable package for different kinds of food products. The ability in doing basic and advanced analysis on food packaging materials.

PROMOTING ORGANIZATION
- MAIN PARTNERS
Italian and International: 1. ICS. - Unido. Centro Internazionale per la Scienza e l’Alta Tecnologia dell’UNIDO
Local: The Food Packaging Laboratory of DISTAM, Department of Food Science and Microbiology - University of Milan

4.4

PROJECT TITLE
Safe water in Chake Chake District, Pemba Island, Zanzibar

THEMATIC AREA
Water and sanitation

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OBJECTIVES
Specific:
1. Education
2. Technology Transfer
3. Community service

TARGET COUNTRIES
Tanzania (Pemba - Zanzibar)

EXPECTED RESULTS
1. Local community of the Chake Chake District: around 89,000 persons;
2. Technicians of the Public Health Laboratory in Pemba;
3. Technicians of the Zanzibar Water Authority of the Engineers without borders.

FUNDING SOURCE
Ivo de Carneri Foundation

DURATION
From: 2005 - To: 2008

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes

MAIN PARTNERS
Italian and International: 1. Dept. of Public Health Microbiology Virology, University of Milan
2. Engineers without Borders, University of Trento Italy
Local: 1. Public Health Laboratory “Ivo de Carneri”
2. Zanzibar Water Department

OBJECTIVES
Overall: Improve the health conditions of local community through the reclamation of water sources and an increase in the availability of drinking water.
Specific:
1. Assess the conditions of primary and secondary water sources in the District;
2. Determine the chemical, physical and microbiological characteristics of water samples taken from primary and secondary sources;
3. Enable PHL-IDC to carry out water analysis autonomously;
4. Organize training for primary school teachers on the correct use of water.

MAIN ACTIVITIES
1. Georeferencing of the pumping water stations of the District;
2. Collection of information;
3. Tracing of the distribution system collecting the position of all the valves, checking-wells, branching points, and taps as well as pipe length, size and materials;
4. Microbiological analysis of 619 samples;
5. The faecal contamination resulted in all Public Water Systems;
6. Chemical analysis of 164 samples. All samples were not acceptable for temperature and hardness, acceptable for the pH, fluoride and nitrate;
7. Different acceptability trends for corrosion and biological pollution;
8. Successful completion of the two week training course for school teachers;
9. The expected targeted 64 families get water from private pipeline-connected tap and only 4 receive a constant supply;
10. 236 families collect water from unprotected public taps and wells.

PROMOTING ORGANIZATION
Ivo de Carneri Foundation

AUTHORITIES
Autonomous Province of Trento

DURATION
From: 2005 - To: 2008

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes
The development of plant food supplements (PFS) in Europe could bring substantial market growth. However, the present scientific and regulatory situation poses barriers to such growth. To protect consumers, and exploit market opportunities, a new integrated approach is needed in research.

Supporting science-based decision making and international cooperation.

Since the European PFS industry does not operate in isolation, this integrated approach requires international cooperation.

**PROJECT TITLE**
Plant food supplements: levels of intake, benefit and risk assessment

**THEMATIC AREA**
Pharmacy

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**TYPE OF ACTION**
- Education
- Research
- Technology Transfer

**TARGET COUNTRIES**
1. Argentina; 2. Brazil; 3. China; 4. South Africa

**EXPECTED RESULTS**
Identification of a new integrated approach related to the development of PFS
There is a growing demand for high-quality, safe, health-promoting foods, including food supplements. Specifically, Plant Food Supplements (PFS) have high acceptance among the consumers. Although botanicals have been used for decades for their health-promoting effects, there is still a lack of data, information, and tools to ensure their safety and reap the benefits that they can convey to consumers.

The development of PFS in Europe could bring substantial market growth. However, the present scientific and regulatory situation poses barriers to such growth. To protect consumers, and exploit market opportunities, a new integrated approach is needed in research.

Since the European PFS industry does not operate in isolation, this integrated approach requires international cooperation.

Supporting science-based decision making and safe use of plant food supplements are the driving aims of PlantLIBRA.

**PROJECT TITLE**
Project of food quality control

**THEMATIC AREA**
Food and agriculture

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**OBJECTIVES**
Overall: Give the opportunity to young graduated students to gain experience in microbiology laboratories of Faculty of Agriculture and Veterinary Medicine, by learning mainly the methods and the techniques for food safety control.

Specific: Enable young students to adequately equip the labs of the University of Tunja.

**TARGET COUNTRIES**
Colombia (Tunja-Boyacá)

**BENEFICIARIES**
1. Universities
2. Farmers’ associations
3. Breeders’ associations
4. CSIR Science South Africa

**EXPECTED RESULTS**
1. Make experts on:
   a. techniques of food quality control;
   b. valorisation of local traditional food;
   c. equipment of the labs of the University of Tunja;
   2. Close collaborations between the two partner universities.

**PROMOTING ORGANIZATION**
- Fundación Universitaria Juan D Castellanos

**MAIN PARTNERS**
Italian and International:
University of Milan Local: Fundación Universitaria Juan D Castellanos

**FUNDING SOURCE**
EU

**DURATION**
From: 2010 To: 2011

**POSSIBILITY OF RENEWAL/FOLLOW UP**
-
Environmental issues are an essential part of the international cooperation policies, because it is in the interests of each country and, more generally, in the interest of the whole international community to encourage and ensure a more effective defense of the integrity of the natural resources and to promote their sustainable use. Among the natural resources, the water and the soil are very relevant and interconnected, especially in arid and semi-desert regions, where they are often partially impaired by pollution or over-exploitation. Agricultural practices use water resources as a primary factor for production and, through an inappropriate use, they can determine qualitative and quantitative modifications that are detrimental to both aquatic ecosystems (river, lakes and groundwater) and agriculture itself (water shortage and soil salinisation). In this context, knowledge of qualitative and quantitative issues about water resources and their defense against the effects of deterioration and over-exploitation caused by industrial and agricultural practices, is one of the most challenging targets for both populations and governments. The prerequisite for the protection of fresh water resources and their sustainable use is the awareness of their availability both in surface and underground, to prevent their depletion or, in coastal areas, the penetration of salt water. This quantitative evaluation, even in the perspective of possible changes in frequency and abundance of rains, must be complemented by a qualitative assessment of the integrity of water resources. An important source of alteration to aquatic ecosystems is due to civil sewage that can lead to health problems related to pathogens and to eutrophication of water bodies due to nitrogen and phosphorus enrichment. In addition to nutrients, civil and industrial sewages lead to the dispersion of organic and inorganic pollutants. The content of pollutants and heavy metals in urban sewage is also due to the washout of the road surface by rain, which is channeled into sewer along with the wastewater. Industrial discharges can then determine, if not properly treated, the release of substantial quantities of undesirable products such as heavy metals (Cd, Cr, Pb, Ni, Zn, Cu), mercury or organic pollutants like solvents, hydrocarbons, phenols and other chemicals. As an example, the chemistry of chlorine traditionally used a chloride-sodium hydroxide cell system with a mercury catalyst that led to a significant release of this element in the environment.

In the environmental field, the University of Milan (UNIMI) has an established experience in projects of international cooperation with several countries. In particular, the recent close cooperation with the Republic of Iraq has provided a complete overview of the main environmental problems related to water management and agricultural issues. These can be grouped into the following main categories:

1) domestic and industrial sewage treatment and utilization of wastewater in agriculture;
2) salinisation and desertification of agricultural land due to unsustainable and unbalanced use of water resources;
3) chemical pollution of aquifers and their over-exploitation;
4) oil pollution of soil and subsoil;
5) alteration and contamination of aquatic ecosystems;
6) absence of effective policies to protect soils and aquatic ecosystems.

These environmental problems are common to most arid or semi-desert countries that have experienced a very unbalanced social and economic development and are often characterized by use of highly polluting production processes which are banned and illegal in the developed countries. In addition to this issue there is the problem of uncontrolled transfer of toxic waste and electronic equipment from the industrialized countries.

It seems therefore urgent to transfer in these countries the most appropriate know-how and technology for the protection of natural resources, in order to reduce and prevent wide pollution of these areas: So international cooperation on environmental issues should be a priority not only for governments but also at academic level. The dispersion through the atmosphere or through the wastewater of a considerable number of potentially harmful substances to the aquatic ecosystems has led to the development of specific methods to monitor the health of water bodies, which can be useful to define the ecological status of rivers and lakes in relation to the presence of anthropogenic chemicals directly or indirectly released. These methods take advantage of ecotoxicological laboratory tests on a small number of species which are considered representative of the biological communities of aquatic ecosystems (algae, Daphnia and fish). As an example, a special and worrying case of non-lethal toxic effects due to exposure to low doses of environmental contaminants is that of the endocrine disrupters, i.e. compounds with pseudo-hormonal action. As far as the marine ecosystems are concerned, a research group of UNIMI recently worked successfully in order to identify appropriate animal models to characterize the possible effects on the endocrine system of a number of common pollutants, with the aim to improve the risk assessment for human being.

As a result, a sensitive and useful experimental system was developed to test the medium-term exposure effects on some common species of marine invertebrates (sea urchins and sea lilies). The potential toxic effects were investigated using histological and biochemical techniques which took into account a series of morphological and physiological endpoints related to reproductive and developmental biology and possibly identifiable as hormonal dysfunctions. For inland waters, thanks to other UNIMI researchers, the freshwater bivalve Dreissena polymorpha was proposed ad extensively studied as an amenable animal model for assessing the potential genotoxicity of organic pollutants. These methodologies and the related know-how can be transferred to the countries more interested to environmental monitoring of both freshwater ecosystems and marine ecosystems (obviously using other appropriate model species).

Given the large number of potentially polluting chemicals and the remarkable diversity of mechanisms of toxicity in the different organisms, some statistical methods have been developed in order to analyze the inter-specific relationships in the field of acute toxicity, which then can form the bases for extrapolating toxicological data from animals to humans. These relationships can easily allow obtaining an indicative evaluation about toxicity in absence of experimental data and their application helps to evaluate the levels and types of toxicity for different animal and vegetal taxa. Our research group in UNIMI developed several quantitative inter-specific relationships for the acute toxicity of 650 pesticides towards both aquatic species (algae, Daphnia and fish) and terrestrial species (earthworms, bees, birds).

In addition to the assessment of toxic effects, the environmental risk assessment for a chemical also includes the evaluation of its environmental fate (degradation or accumulation) and of its differential distribution in the environmental compartments (water, air, soil, sediment and biota). The exposure estimate needs an intensive chemical monitoring of the environmental matrices especially in significant areas (i.e. downstream from a sewage). A useful alternative method to the extensive chemical monitoring can be represented by the suitable development of mathematical models predicting the environmental distribution. According to the case, it can be useful to employ 1) simple models, such as those that rely only on chemical and physical characteristics of the compounds to predict their partition/distribution in the five key environmental matrices for the equilibrium (water, air, soil, sediment and biota), or 2) more complex models, such as the ones predicting leakage from a point source in time and space, and taking into account climatic and pedological parameters. In this field, a research group of UNIMI has developed dynamic mathematical models for the prediction of the environmental fate of several persistent organic pollutants in the aquatic environment (taking into account single or multiple leaks) and predictive maps of contamination in soil based on meteorological and pedological features. The use of mathematical methods and simulations, which can replace more expensive laboratory tools, are easily transferable and applicable by researchers of developing countries and can provide a very successful and valuable contribution to international cooperation projects aimed at protecting the environment with potential short-term results.

It appears rather evident that due to the positive experience of the cooperation projects carried out so far, UNIMI can exploit a remarkable potential for scientific collaboration with researchers coming from other countries with a broad spectrum range of opportunities for transferring techniques and knowledge and for contributing to environmental recovery, with positive effects on both sides.
5.1

PROJECT TITLE
Sustainable development of Ethiopian communities

THEMATIC AREA
Ecological capital (Biodiversity)
Social capital (Institutional diversity)
Adaptive capacity of socio-ecological systems 1 (Resilience)

TYPE OF ACTION
• Adaptive management of human and animal disease vectors;
• Navigation of Ethiopian communities towards ecological and social capital enhancement by improving their adaptive capacities.

TARGET COUNTRIES
1. Ethiopia
2. Other Sub-Saharan countries (to be defined)

BENEFICIARIES
1. Ethiopian communities
2. Ethiopian universities
3. Communities and institutions of other Sub-Saharan countries (to be defined)

EXPECTED RESULTS
1. Reduction of cattle disease prevalence in Ethiopian communities;
2. Reduction of malaria prevalence in Ethiopian communities;
3. Enhanced ecological capital (biodiversity) and social capitals (institutional capital) in Ethiopian communities;
4. Enhanced adaptive capacities of Ethiopian communities;
5. On-site training of Ethiopian villagers and demonstration of appropriate technologies.

PROJECT TITLE
Monitoring of several persistent organic pollutants (POPs) in the mouth of River Ganges

THEMATIC AREA
Environmental Chemistry

TYPE OF ACTION
• Research
• Environmental Risk Assessment

TARGET COUNTRIES
India (Kolkata)

BENEFICIARIES
1. Scientists
2. Citizens

EXPECTED RESULTS
This collaborative work is one of the first studies made on the evaluation of several classes of POPs in the mouth of River Ganges in order to identify possible environmental problems due to these pollutants. In particular, we investigated for the first time the new classes of poli brominated diphenyl ethers (PBDEs) in sediment cores of River Ganges. The main result of this research was the identification of possible “hot-spot areas” in this very particular aquatic ecosystem: the sampling sites located near the metropolis of Kolkata (Calcutta) resulted much more contaminated by several man-made pollutants than the sampling stations located in the mangrove wet-land of Sunderban that are not interested on heavy urbanization and industrialization.

FUNDING SOURCE
BioEconomy Foundation, Addis Ababa, Ethiopia: Grant to University of Molise, Campobasso, Italy.

DURATION
From: January 1995 - To: December 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
To be evaluated in a conference (October 2010)

5.2

PROJECT TITLE
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OBJECTIVES
Overall: Analysis of organic compounds on River Ganges.
Specific: 1. Environmental Risk Assessment; 2. Decrease of water pollution before the identification of aquatic pollutants present in the studied ecosystem.

MAIN ACTIVITIES
1. Survey of congener profiles of several persistent organic pollutants residues (PCBs, PBDEs, PAHs, DDTs, HCB, HCHs) in core sediment samples covering seven sites in Sunderban mangrove Wetland, north-eastern part of the Bay of Bengal;
2. Evaluation of the potential danger for benthic organisms due to PAH contamination by the use of the international Sediment Quality Guidelines (SQGs).

FUNDING SOURCE

DURATION
From: 2006 - To: 2009

POSSIBILITY OF RENEWAL/FOLLOW UP
PROJECT TITLE
Regeneration in brittlestars (marine invertebrates)

THEMATIC AREA
Regenerative Biology

REFERENCE PERSON
Maria Daniela CANDIA
Full Professor
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phone: 02 503 14788
Faculty Mathematical, Physical and Natural Sciences
Old Dept.: Dept. of Biology;
New Dept.: Dept. of Biosciences

OBJECTIVES
Overall: Italy - China Exchange Program,
Fellowship 2003
Specific: 10 months Grant for Chinese Researchers to be spent in Italian Research Institution

MAIN ACTIVITIES
1. Experimental activity related to induced arm regeneration in animals maintained in the lab;
2. Study of the repair and regenerative processes and phases;
3. Histological and ultrastructural analysis of regenerating tissues and cells.

FUNDING SOURCE
MAE - DGPC (Italian Ministry of Foreign Affairs - General Directorate for Promotion and Cultural Cooperation)

DURATION
From: November 2002 - To: August 2003

POSSIBILITY OF RENEWAL/FOLLOW UP
No renewal. Collaboration still active

REFERENCE PERSON
Maria Daniela CANDIA
Full Professor
e-mail: daniela.candia@unimi.it
phone: 02 503 14788
Faculty Mathematical, Physical and Natural Sciences
Old Dept.: Dept. of Biology;
New Dept.: Dept. of Biosciences

OBJECTIVES
Overall: Program of re-training and reorientation of Iraqi experts in the field of bio-chemistry technology for peaceful application.
Specific: 1. Basic formation (theoretical elements, basic bibliography);
2. Laboratory practicals on specific topics.

MAIN ACTIVITIES
1. Three months of intensive course involving activities addressed to Iraqi researchers to be held in Italy and in Iraq;
2. Three-phase program: teaching activities held in Iraq, teaching and training activities held in Italy, communications and reports exchanged at distance;
3. Three weeks of mini-internships to be spent in different laboratories and structures on specific selected topics.

The course is addressed to technicians or experts with a limited or too specific background in applied Sciences, who need to readdress their technical preparation towards applied ecology and ecotoxicology. During the course students attend frontal lectures and practical lab, and do experimental bench work and analyses of data at all level, including statistical methods and bibliographic analysis.

FUNDING SOURCE
Italian Ministry of Foreign Affairs (Convention 3.12.2009: MAE - Insubria University - University of Milan)

DURATION
From: 15th May 2010 - To: 20th September 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
High possibility of renewal (2011), and/or extension of the project.
PROJECT TITLE
Unraveling and exploiting Mediterranean Sea microbial diversity and ecology for Xenobiotics’ and pollutants’ clean up (ULIXES)

THEMATIC AREA
Bioremediation

REFERENCE PERSON
Daniele Daffonchio
Full Professor
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Faculty of Agriculture
Old Dept.: D?STAM;
New Dept.: Food, Environmental and Nutritional Sciences

OBJECTIVES
Overall: The project ULIXES aims to unravel, categorize, catalogue, exploit and manage the microbial diversity available in the Mediterranean Sea for addressing bioremediation of polluted marine sites.
Specific:
1. Characterization of Mediterranean Sea microbial diversity for xenobiocidal and pollutants’ clean-up
2. Establishment of new products and processes for bioremediation
3. Bioremediation pilot treatments in the field

MAIN ACTIVITIES
1. Sampling and characterization of the Mediterranean Sea sites
2. Establishment of collections of microbial isolates and metabolites
3. Microbial metagenomics and proteomics of the polluted sites
4. Result dissemination

FUNDING SOURCE
European Community

TYPE OF ACTION
- Research

TARGET COUNTRIES
- Scientific community
- Small and medium enterprise (SMEs)

EXPECTED RESULTS
The application of metabolomics and metagenomics techniques will allow to create a map of the biodegradation pathways of the microbiome inhabiting polluted sites in the Mediterranean Sea. Moreover, culturing techniques will allow the establishment of several different culture collections whose isolates will be characterized and exploited by establishing novel processes for bioremediation purposes. The microbial resources retrieved during the ULIXES project will be tested in-situ to verify their effectiveness as new potential and eco-friendly tool for bioremediation of marine polluted areas.

PROMOTING ORGANIZATION
- Italian and International:
  1. Universita degli Studi di Milano
  2. Universite de Tunis
  3. Yarmouk University
  4. Consiglio Nazionale delle Ricerche
  5. Mubarak City for Scientific Research and Technology Application
  6. Universite Hassan II Ain Chock Casablanca
  7. Bangor University
  8. Agencia Estatal Consejo Superior De Investigaciones Cientificas
  9. Technical University of Crete
  10. University of Ghent
  11. EcoTechSystem srl


PROJECT TITLE
α-L-fucosidase activity of the FUCA gene product in the brown planthopper, Nilaparvata lugens

THEMATIC AREA
Fundamental Sciences

REFERENCE PERSON
Maria Pasini
Researcher
e-mail: maria.pasini@unimi.it
phone: 02 503 14881
Faculty of Mathematical, Physical and Natural Sciences
Old Dept.: Dept. of Biomolecular Sciences and Biotechnologies; New Dept.: Dept. of Biosciences

OBJECTIVES
Overall: Starting from the available data of the Drosophila melanogaster gene Fuca (Pasini et al., 2008) and Ceratitis capitata EST libraries (Gornulski et al., 2008; Pasini et al., in press) we decided to extend and to focus our study on the identification and expression pattern analysis of the homologous gene in the brown planthopper, Nilaparvata lugens, the most destructive pest insect for the rice production in the world.
5.7

PROJECT TITLE
Fertilization mechanisms in insects

THEMATIC AREA
Fundamental sciences

REFERENCE PERSON
María Enrica Pasini
Researcher

e-mail: maria.pasini@unimi.it
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Faculty of Mathematical, Physical and Natural Sciences
Old Dept.: Dept. of Biomolecular Sciences and Biotechnologies; New Dept.: Dept. of Biosciences

TYPE OF ACTION
• Education,
• Research

TARGET COUNTRIES
Brazil

EXPECTED RESULTS
1. Identification, classification and distribution of new species of insects in Brazilian ecosystems in connection with physical characteristics of the territory. These data are essential for the preparation and realization of natural environment management plans;
2. Collection of information on the molecules involved in fertilization in the new species of insects, necessary to explain mechanisms of recognition in invertebrates gametes.

Professor Tidon is one of the most important scientists involved in the ecological field. She was the first to study the effect of the colonization of new species of insects in Brazilian ecosystems.

OBJECTIVES
Overall: Study of the life cycle of Drosophilidae Zaprionus indianus, D. mercatorum and D. paranaensis and analysis of the presence of glycoprotein terminal residues on the egg surface and of complementary receptors on the sperm plasma membrane to confirm the conservation of the mechanism of gametes recognition in Drosophila.
Characterization of Drosophila gene encoding fucosidase overexpressed in insect cells.
Specific:
1. Identification and preparation of cultures of Zaprionus indianus, D. mercatorum and D. paranaensis;
2. Morphological analysis of Zaprionus indianus, D. mercatorum and D. paranaensis gametes;
3. Characterization of the egg surface with fluoresceinate lectins;
4. Labelling of the sperm surface with antibodies for specific receptors of the plasma membrane.

MAIN ACTIVITIES

FUNDING SOURCE
MIUR (Ministry for Education, University and Research - Italy)
Brazilian Ministry of Science and Technology

DURATION
From: July 2008 - To: July 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
Joint experimental thesis Italy-China Cooperative Erasmus Mundus Project

PROMOTING ORGANIZATION
MAE (Ministry for Foreign Affairs - Italy)

MAIN PARTNERS
Italian and International:
University of Milan
Local:
University of Brasilia

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Advanced Courses 1

A successful model of Cooperation Program, involving both the scientific and teaching aspects, is provided by the Summer School experience organized by the Department of Biology of UNIMI within the cooperation framework between Italy and Iraq promoted by MAE (Italian Ministry of Foreign Affairs - General Direction for Development & Cooperation) and by Landau Network - Centro Volta (Como).

Following the first pilot-projects (2006 e 2007) related to individual stage experiences (3-6 months) of Iraqi visiting scientists at UNIMI, the Department of Biology took part in 2008 e 2009 to an important project financed by MAE “Project for the Internationalization of the Iraqi Institutional-Scientific Structures and the Collaboration with Italian Scientific and Academic Centers”, which implied the organization of the following initiatives:

SUMMER SCHOOL: Electron and Ion Microscopy and Micromanipulation: common principles and advanced methods in applied sciences

I Edition: September-October 2008, Milano, Italy

II Edition: September-October 2009, Milano, Italy

Organizers: M. Daniela Candia, Università degli Studi di Milano - Dipartimento di Biologia Marziale Milani, Università degli Studi di Milano-Bicocca - Dipartimento di Scienza dei Materiali.

The two Editions of the Summer School were held in the hosting Universities that made available for the participants their facilities, equipment as well as support and expertise of qualified technical staff. The Course was based on topical and application-oriented themes both in the field of physics and materials sciences, as well as in biology, involving a broad range of research interests oriented to both a traditional-scientific approach and to the application of more sophisticated and advanced technologies. The course was subdivided into theoretical lectures, practical demonstrations and training in the different research structures.

Overall the Course was attended by 19 Iraqi students, 8 in the first Edition 2008, 11 in the second Edition 2009 respectively. The candidates were selected on the basis of their CV and specific research field of interest. The organizers were responsible for the Course organization and the Proceedings publication. All the contributions 2008 and 2009 have been collected, edited and presented in form of an overall volume which represents an important record of the Summer School in terms of targets, content and results. The volume entitled: “Electron and Ion Microscopy and Micromanipulation: common principles and advanced methods in applied sciences”, includes lectures, technical contributions, the students’ final reports. It is published as Vol 5 of The MIRIAM PROJECT series, edited by Società Editrice Esculapio, Bologna.

The course represented an important opportunity for the researchers interested in the subject of advanced microscopy to meet each other, to increase their cultural background and knowledge and to establish profitable connections, as well as to create new cooperation conditions and exchange of cultures between the different research structures. We should emphasize the enthusiastic participation not only of young researchers coming from the Iraqi Universities, but also that of the senior lecturers, whose qualified presence has been relevant for the maintenance of an excellent level in terms of teaching methods and educational aims.

Prof. M. Daniela Candia Old Dept.: Department of Biology; New Dept.: Department of Biosciences

Advanced Courses 2

A second positive example of scientific cooperation with Iraq is represented by the recent Intensive Course experience, a complex scientific initiative organized by the Department of Biology of UNIMI, within the cooperation framework between Italy and Iraq promoted by MAE (Italian Ministry of Foreign Affairs - General Direction for Development & Cooperation) and by Landau Network - Centro Volta (Como). In this case the Department of Biology was promoter and actor of an articulated project “Program of re-training and reorientation of Iraqi experts in the field of bio-chem technology for peaceful application”, which was developed during about 10 months (May 2010- March 2011) according to the following format:

INTENSIVE COURSE 2010: Agricultural derived products and environmental contamination

Organizers: M. Daniela Candia, Silvana Galassi, Paolo Tremolada, Università degli Studi di Milano - Dipartimento di Biologia

Tutors: Cristiano Di Benedetto, Dario Fassini, Università degli Studi di Milano - Dipartimento di Biologia

Coworkers: other teachers of UNIMI and of other Institutions

Activity: the Intensive Course was subdivided in 3 phases (pre-course in Baghdad, Intensive Course in Milan, post-course in Baghdad + stage in Milan) and was focused on the study of the environmental contamination derived from chemical products employed in agriculture.

Objectives: promote an interdisciplinary approach to the applied ecology and develop intellectual skills required at high level professional training, by providing basic and advanced training in experimental and research activity in both the field and the laboratory.

Contents: a wide range of applied topics related to the environment are covered, with a particular focus on: 1) ecotoxicology fundamentals; 2) overview of main chemical products used in agriculture and related environmental contamination problems; 3) problems of global distribution of persistent organic pollutants; 4) environmental risk assessment (ERA) basics.

Participants: the course was attended by 12 Iraqi experts and researchers, representatives of different Ministries selected on the basis of proven knowledge of basic and applied sciences as well as of a specific need to update, improve and re-address their environmental competences at both theoretical and practical level.

The Course represented a pilot-model of a lifelong training program meant to promote as much as possible a renewed integration of Iraqi experts and researchers in the international context. It launched a new and interactive training proposal format which integrates research and teaching in terms of both topics and modules. The results of these 3 phases can be considered absolutely positive in terms of outcomes as far as the Iraqi participants are concerned. The training activity provided by the complementary 1, 2 and 3 phases guarantees a good follow-up in terms of a suitable development of the acquired competences in the Iraqi institutions. The ideal continuation of this initiative foresees moreover the development of profitable and solid collaborative exchanges between Iraqi and Italian researchers hopefully leading to the establishment of long term International cooperation programs.

Prof. M. Daniela Candia Old Dept.: Department of Biology; New Dept.: Department of Biosciences
Development of new drugs is an extremely expensive process which requires several years of research and investments before a new pharmaceutical entity is registered and marketed. The process becomes even more expensive and complicated when the new drugs are supposed to cure diseases mostly present in the Developing Countries (DC). The costs for clinical trials in the DCs are higher than in Western areas, the drug distribution is difficult and the market price of a new drug has to be extremely low to be affordable for those who need it. Despite the large number of patients suffering from treatable diseases (millions of patients every year suffering from TB, malaria or HIV-AIDS), research and development (R&D) for drugs against these three major killers is scarce, because the economic gain for a pharmaceutical company does not compensate the investments. Only with the advent, in the mid ’90, of Public Private Partnerships (PPPs), in which International organizations and the Private sector joined together in common projects for new drugs, the pipeline for new anti-infective drugs was refurbished and new pharmaceutical entities for neglected diseases came to the market or are, at present, in an advanced state of development. (Malar J. 2011 May 23;10:143; Trans R Soc Trop Med Hyg. 2005 Oct;99 Suppl 1:S9-14; www.tballiance.org, www.MMV.org)

At the same time, several projects to improve North-South collaborations were financed and helped improving the capacity building in DC and the networking among them. In addition, to exploit the richness of natural resources and cultural heritage of DC, a systematic analysis of the natural products used in the traditional medicine of the different countries has been promoted. The aim is not only to identify new potential drugs, but also to foster a better use of traditional remedies once validated and standardized. (WHO, National Policy on Traditional Medicine and Regulation of Herbal Medicines - Report of a WHO Global Survey, 2005)

The initiatives of International cooperation of the University of Studies of Milan in the pharmacologic field are described in details in the records presented in this chapter and reflect the areas of interests outlined above.

1. Three international projects aiming at developing new drugs for neglected diseases or new vaccine are based on the direct collaboration between groups at the University of Studies of Milan and foreign Institutions (Taramelli-AntiMal, Taramelli-China, DeGiuli-Morghen-Gabon). In addition, a fourth project aims at increasing North-South collaboration by reinforcing the pharmacological research in Africa (Taramelli-South Africa). A DMPK (Drug Metabolism and Pharmacokinetics) platform has recently been built at the African Institute of Biomedical and Science Technologies (AIBST) and the Department of Chemistry of the University of Cape Town, South Africa to deliver a preliminary DMPK profile for potential new antimalarial drugs. This is the first

6.0 Medicines

THE STRATEGIC MEDICINES FOR THE DEVELOPING COUNTRIES

Prof. Donatella Taramelli
Old dept.: Department of Public Health Microbiology and Virology
New dept.: Department of Pharmacological and Biomolecular Sciences

Development of new drugs is an extremely expensive process which requires several years of research and investments before a new pharmaceutical entity is registered and marketed. The process becomes even more expensive and complicated when the new drugs are supposed to cure diseases mostly present in the Developing Countries (DC). The costs for clinical trials in the DCs are higher than in Western areas, the drug distribution is difficult and the market price of a new drug has to be extremely low to be affordable for those who need it. Despite the large number of patients suffering from treatable diseases (millions of patients every year suffering from TB, malaria or HIV-AIDS), research and development (R&D) for drugs against these three major killers is scarce, because the economic gain for a pharmaceutical company does not compensate the investments. Only with the advent, in the mid ’90, of Public Private Partnerships (PPPs), in which International organizations and the Private sector joined together in common projects for new drugs, the pipeline for new anti-infective drugs was refurbished and new pharmaceutical entities for neglected diseases came to the market or are, at present, in an advanced state of development. (Malar J. 2011 May 23;10:143; Trans R Soc Trop Med Hyg. 2005 Oct;99 Suppl 1:S9-14; www.tballiance.org, www.MMV.org)

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of such facilities available in all Africa and it is hopefully the beginning of a great improvement of African research in Pharmacology. The platform can already offer DMPK assays to collaborators not only in Africa but also abroad.

2. Africa and Asia countries, due to their biodiversity, are a rich source of natural products some of which have been used since centuries as traditional remedies for diseases, while others are more interesting as cosmetics. Three projects (Bosisio-India; Taramelli-Burkina Faso and Speranza-Kenya) are dealing with investigation on natural products. The aim is not only to identify pharmacologically active ingredients, but also to coordinate the work of the traditional healers to make standardized preparations of traditional remedies to be tested for their efficacy in different pathologies. This should lead to a more adequate use of traditional remedies in those setting where conventional drugs are not properly distributed or are not affordable. Similarly, the project on Aloe as cosmetic/pharmacological product has the aim of rationalizing the usage of the different Aloe species present in Kenya, by selecting those whose constituents are adequate for industrial purposes. Kenyans should then build up their own production of standardized extracts or ingredients from Aloe.

There are a lot of possibilities to extend and improve the international collaboration between the University of Studies of Milan and developing countries in different aspects of the pharmacological research. Training of foreign PhD students in these areas has already started in different PhD program of the University of Studies of Milan, like for example, the School of Doctorate in Molecular Medicine. Adequate funding for these initiatives is, however, mandatory and should not be confined to research and training for new drugs for neglected diseases. It should be extended to pharmacological research in general in order to find and distribute affordable drugs also for those diseases like diabetes, cardiovascular diseases, obesity whose incidence has increased dramatically in countries, such as India, where the economic situation improved in the last years.
PROJECT TITLE
Malaria: research on plants used for malaria therapy and prophylaxis in the area of Orissa-India

THETMATIC AREA
Pharmacy

REFERENCE PERSON
Enrica Bosiio
Associate Professor
e-mail: enrica.bosiio@unimi.it
phone: 02 503 18372
Faculty of Pharmacy
Old Dept.: Dept. of Pharmacological Sciences; New Dept.: Dept. of Pharmacological and Biomolecular Sciences

OBJECTIVES
Overall: Research of local plants for malaria therapy and prophylaxis.

MAIN ACTIVITIES
1. Evaluation of the activity of Punica granatum fruit rind as antimalarial by in vitro and in vivo studies;
2. Extraction of the fruit rind;
3. Activity guided fractionation of the extract;
4. HPLC-MS analysis of the active fraction;
5. In vitro assays for the evaluation of the mechanism of action;
6. Evaluation of the activity of human metabolites of active principles;

The studies will consider also the known metabolites of the active compounds formed after human consumption of the fruit rind.

FUNDING SOURCE
EU, University of Milan

DURATION
From: May 2005 - To: March 2010

POSSIBILITY OF RENEWAL/FOLLOW UP
No

TYPE OF ACTION
- Research

TARGET COUNTRIES
India (Orissa region-Bhubaneswar)

BENEFICIARIES
1. Population exposed to malaria infection, mainly pregnant women and children
2. Local Health Authorities

EXPECTED RESULTS
1. Activity of plant extracts on Plasmodium falciparum in vitro;
2. Activity of plant extracts in in vivo murine model;
3. Identification of the active principles;
4. Assessment of the transmission blocking activity;
5. Mechanism of action of the antimalarial activity;
6. Possibility to determine whether the metabolites of the active compounds maintain the antiplasmodial activity.

PROMOTING ORGANIZATION

MAIN PARTNERS
- Italian and International:
  1. London School of Hygiene and tropical medicine
  2. University of Milan
  3. University of Camerino

Local:
1. Odissi Research Laboratories - Bhubaneswar
2. Indian Red Cross Society (Koraput District)

OBJECTIVES
Research on the evaluation of new recombinant vaccines and microbicides to prevent and control HIV infection and dissemination

TARGET COUNTRIES
Gabon

BENEFICIARIES
1. Women
2. Sexually active general population

EXPECTED RESULTS
1. MC1220 animal treatment, SIV virus challenge studies with SIV recombinant vaccines.
2. Determination of immune correlates of protection in protected animals;
3. Determination of complete immune response in macaques after different immunization regimens with SIV recombinant vaccines.

FUNDING SOURCE
UE

DURATION
From: May 2004 - To: December 2009

POSSIBILITY OF RENEWAL/FOLLOW UP
A renewal proposal has been filed up by the principal coordinator.
The pharmacists stand at the interface between medicines and their uses for therapeutic purposes. With advanced scientific knowledge in the field of pharmacy practice is carried on in the health care environment, the graduates are provided with advanced scientific knowledge in the field of health and are trained as professionals in medicines and their uses for therapeutic purposes. The pharmacists stand at the interface between research and development, manufacturer, prescriber, patient and the medicine itself. The pharmacist should be able to assume many different functions in order to operate as an expert in pharmaceuticals and health products such as the drugs, the dietary and herbal products, the cosmetics, the medical-surgical aids, diagnostic and chemical clinic products. In the coming years, the pharmacists are expected to become more active within the health care system participating in illness prevention and health promotion.

**PROJECT TITLE**
Teaching and scientific co-operation within the single-cycle degree course in Pharmacy

**THEMATIC AREA**
Education

**REFERENCE PERSON**
Gianluigi Monticelli
Associate Professor
gianluigi.monticelli@unimi.it
phone: +39 02 503 15802
Faculty of Pharmacy
**Old Dept.: Department of Molecular Sciences Applied to Biosystems (DSMAB); New Dept.: Dept. of Pharmacological and Biomolecular Sciences**

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**TYPE OF ACTION**
- Education
- Research
- Community services
- Events/communication

**TARGET COUNTRIES**
1. Albania

**BENEFICIARIES**
1. students
2. teachers
3. Albanian population

**EXPECTED RESULTS**
The single-cycle degree in Pharmacy provides the student with advanced education and training in a specific field regulated by the EU directives that require a high level qualification. Since the pharmacy practice is carried on in the health care environment, the graduates are provided with advanced scientific knowledge in the field of health and are trained as professionals in medicines and their uses for therapeutic purposes. The pharmacists stand at the interface between research and development, manufacturer, prescriber, patient and the medicine itself. The pharmacist should be able to assume many different functions in order to operate as an expert in pharmaceuticals and health products such as the drugs, the dietary and herbal products, the cosmetics, the medical-surgical aids, diagnostic and chemical clinic products. In the coming years, the pharmacists are expected to become more active within the health care system participating in illness prevention and health promotion.

**PROJECT TITLE**
Chemical and pharmacological researches on Aloe plants native of and cultivated in Kenya.

**THEMATIC AREA**
Chemistry, Pharmacology

**REFERENCE PERSON**
Giovanna Speranza
Full Professor
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Faculty of Mathematical, Physical and Natural Sciences
**Old Dept.: Dept. of Organic and Industrial Chemistry; New Dept.: Dept. of Chemistry**

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**OBJECTIVES**
Overall: To improve health and pharmaceutical systems in Albania
Specific:
1. to train competent, high-level pharmacists,
2. exchange information pertaining to developments in teaching,
3. Italian language promotion and diffusion,
4. double degree (Albanian and Italian).

**MAIN ACTIVITIES**
1. institutional courses,
2. promotion of courses, seminars and conferences in the health care field,
3. activation and implementation of didactic and research laboratories.

The entire single-cycle degree course (single period of five years) is structured and developed according to that of the Faculty of Pharmacy of UniMI. It awards a 2nd level degree. To access the course the students must pass the admission test on scientific subjects and are required to possess an adequate knowledge of the Italian language. Italian teachers provide at least 70% of credits. A Joint Technical Commission (formed of representatives of both Universities) ensures the proper functioning and implementation of the agreement.

**FUNDING SOURCE**
Foundation "Nostra Signora del Buon Consiglio" (mainly)
Università degli Studi di Milano

**DURATION**
From: October 2005 - To: September 2015 producing effects until 2022

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes

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**OBJECTIVES**
Overall: Realization of a screening of Aloe plants native of Kenya from a phytochemical and pharmacological point of view, and valorisation of the potential use of these plants in the production of aloe drug, aloe gel and other semi-finished goods of pharmaceutical, cosmetic and food interest
Specific:
1. Support Developing countries in the valorisation of natural resources and of agricultural and food traditions;
2. Protect biodiversity in Developing Countries;
3. Solidarity and cooperation activities in Developing Countries.

**TARGET COUNTRIES**
1. Kenya
2. Other south-central African Countries

**BENEFICIARIES**
1. Aloe farmers
2. Manufacturers of Aloe extracts and end products for pharmaceutical, cosmetic and food use

**EXPECTED RESULTS**
1. Selection of Aloe local species provided by Dr. Patrick B. Chalo Mutiso, (University of Nairobi) in order to obtain raw materials suitable for the preparation of commercial products;
2. Increase and improvement of Aloe cultivations;
3. Optimization of Aloe leaves transformation processes, that nowadays are still at traditional level, by introducing modern and innovative techniques and procedures;
4. Training of local staff through master's degrees, improves courses, scholarships, visits to sites of cultivation and transformation of Aloe leaves.

**PROMOTING ORGANIZATION**
Italian and International:
Giovanna Speranza, University of Milan
Local:
Dr. Patrick B. Chalo Mutiso, curator of the Herbarium of the University of Nairobi

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**MAIN PARTNERS**
Giovanna Speranza, University of Milan
Local:
Dr. Patrick B. Chalo Mutiso, curator of the Herbarium of the University of Nairobi

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**FUNDING SOURCE**
None

**DURATION**
From: September 2010 - To: August 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes
**PROJECT TITLE**
Antimalarial drug discovery: isolation and characterisation of active principle with antimalarial activity from medicinal plants used by traditional healers in Burkina Faso

**THEMATIC AREA**
Malaria, antimalarial drugs, natural products

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**REFERENCE PERSON**
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phone: 02 503 15071
Faculty of Pharmacy
Old Dept.: Dept. of Public Health, Microbiology and Virology; New Dept.: Dept. of Pharmacological and Biomolecular Sciences

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**OBJECTIVES**

**Overall:** Isolation and characterisation of active principle with antimalarial activity from medicinal plants used by traditional healers in Burkina Faso

**Specific:**
1. Collection and ethno-botanical classification of plants used in traditional medicine;
2. Assay for antimalarial activity in vitro and cytotoxicity;

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**MASS ACTIVITIES**
1. Chemical isolation and characterisation of plant infusion as made by traditional healers;
2. In vitro tests of chemosensitivity;
3. In vitro tests for immunomodulatory activity;

**FUNDING SOURCE**
PhD Program University of Milan for the PhD student.
EU-ANTIMAL project for the scientific part

**DURATION**
From: November 2008 - To: October 2011

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**POSSIBILITY OF RENEWAL/FOLLOW UP**
No, for the student; yes for the project subjected to availability of funding

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**TYPE OF ACTION**
- Education: this is the Project of a PhD student from Burkina Faso, enrolled in PhD School in Molecular Medicine at the University of Milan
- Research for new antimalarials

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**TARGET COUNTRIES**
1. All countries where malaria is endemic
2. Travellers/Workers in malaria endemic countries

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**BENEFICIARIES**
1. Patients with malaria
2. Travellers to developing Countries

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**EXPECTED RESULTS**
Tests of the plant extracts used by traditional healers to cure malaria and fevers for antimalarial activity and anti inflammatory properties (effect on cytokine production). If positive, the extracts will be subjected to bioguided fractionation in order to identify the molecule(s) responsible for the activity. This will help finding new class of molecules not yet known as antimalarials in plants. If new entities will be identified, they will be purified, characterised and eventually synthesised in vitro to improve the pharmacologic properties.

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**PROMOTING ORGANIZATION**

**MAIN PARTNERS**
Italian and International:
1. Dept. of Public Health, Microbiology and Virology
2. Dept. of Pharmacological - (Prof. E. Bosio)
3. ISTM-CNR- Milan - Dr. D. Monti
4. University of Ouagadougou- Burkina Faso

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**PROJECT TITLE**
Antimalarial, anti-melanoma and anti-angiogenic effects of new artemisinin derivatives

**THEMATIC AREA**
Malaria, Cancer, Drug discovery
PROJECT TITLE
Developing an African platform for preclinical studies (ADME-Tox) of new antimalarial compounds

THEMATIC AREA
Malaria, Drug discovery, Antimalarial drugs

REFERENCE PERSON
Donatella Taramelli
Full Professor
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Faculty of Pharmacy
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OBJECTIVES
Overall: Strengthen the DMPK Platform at AiBST and Medicinal Chemistry at UCT to give a preliminary DMPK profile for potential antimalarial compounds.
Specific:
1. Establish in silico platforms for the prediction of ADME properties (pKa, logP, solubility, metabolic stability, metabolism permeability and protein binding) for new compounds;
2. Reinforce the human resource capacity building at AiBST and UCT, educating technicians and postdoctoral fellows.

MAIN ACTIVITIES
1. Training courses on DMPK;
2. Use of the new in silico platform to foresee ADME characteristics of new potentially antimalarial compounds.

FUNDING SOURCE
FP6 EU Antimal Project 18834 - Development of new drugs for the treatment of malaria

DURATION
From: December 2005 - To: May 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes, subjected to FP7 calls

TYPE OF ACTION
• Education
• Research
• Technology Transfer

TARGET COUNTRIES
1. Sudafrica and Zimbabwe
2. Developing countries where Malaria is endemic

BENEFICIARIES
1. African research institutes
2. African students
3. Patients with malaria
4. Travellers to Developing Countries

EXPECTED RESULTS
1. Identification of compounds with in vitro antimalarial activity;
2. Process these hits through the in silico and in vitro ADMET platform to challenge the robustness of the platform and address issues of turnaround times and interpretation of the data by chemists;
3. Selection of compounds with anti-malarial activities which need further characterizations and optimization towards the selection of lead compounds.

PROMOTING ORGANIZATION
EU-FP6

MAIN PARTNERS
Italian and International:
UMIL- Dept. of Public Health, Microbiology and Virology, University of Milan
Local:
1. Kelly Chibale, Professor of Organic Chemistry, South African National Research Development Research Unit, Department of Chemistry, University of Cape Town
2. African institute of Biomedical Science and Technology (AiBST), Harare, Zimbabwe

PROJECT TITLE
Development of New Drugs for the Treatment of Malaria - EU antimal

THEMATIC AREA
Antimalarial drugs discovery

REFERENCE PERSON
Donatella Taramelli
Full Professor
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Faculty of Pharmacy
Old Dept.: Dept. of Public Health, Microbiology and Virology; New Dept.: Dept. of Pharmacological and Biomolecular Sciences

OBJECTIVES
Overall: Establish in silico platforms for the prediction of ADME properties (pKa, logP, solubility, metabolic stability, metabolism permeability and protein binding) for new compounds;
Specific:
1. Establish in silico platforms for the prediction of ADME properties (pKa, logP, solubility, metabolic stability, metabolism permeability and protein binding) for new compounds;
2. Reinforce the human resource capacity building at AiBST and UCT, educating technicians and postdoctoral fellows.

MAIN ACTIVITIES
1. Training courses on DMPK;
2. Use of the new in silico platform to foresee ADME characteristics of new potentially antimalarial compounds.

FUNDING SOURCE
FP6 EU Antimal Project 18834 - Development of new drugs for the treatment of malaria

DURATION
From: December 2005 - To: May 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes, subjected to FP7 calls

TYPE OF ACTION
• Research and development
• Capacity building in Africa
• Training

TARGET COUNTRIES
1. All PVS countries where malaria is endemic

BENEFICIARIES
1. Malania patients
2. African and European research groups

EXPECTED RESULTS
Registration of affordable and effective antimalarial drug(s) against uncomplicated malaria. The ANTIMal is an EU-financed project aiming at developing a portfolio of potential antimalarial drugs with at least two molecules from the portfolio will be developed to the point where ‘first into man’ studies can be conducted within the project time.

PROMOTING ORGANIZATION
Main Partners more than 33 countries both in EU and Africa (www.antimal.eu) including SMI

MAIN PARTNERS
Italian and International:
1. Università di Milano
2. ISTM-CNR Milano
3. Università di Siena
4. Università di Napoli Federico II
5. Liverpool School of Tropical medicine
6. London School of tropical med and Hygiene
7. CNRS Montpellier II 6. University of Heidelberg
8. University of Toulouse
9. Foundation Biomedical Primate Research Centre, Rijswijk
10. Swiss Tropical Institute
11. Inserm-Univ. Loussanne
12. LICA pharma
13. NeED Pharma
14. Cosmos

15. 4SC AG
Local:
1. University of Nairobi
2. African Centre for Clinical Trials, Kenya
3. Council for Scientific and Indl. Research, South Africa
4. University of Cape Town, SA
5. CNRFP-Burkina Faso

OBJECTIVES
Overall: Establish a portfolio of new antimalarial drugs within the European and African scientific community and manage it through an industry standard, pre-clinical evaluation and select candidates inside the portfolio for progression to ‘first into man’ studies. This initiative will lead to antimalarial drugs, registered according to internationally recognised standards, potentially useful for the affordable treatment of malaria within malaria-endemic countries and Europe.
Specific:
1. Discovery of new antimalarial compounds from synthesis or natural products;
2. Assay and screening new compounds for activity against malaria parasite and no toxicity against mammalian cells;
3. Develop an affordable preclinical plan.

MAIN ACTIVITIES
1. Synthesis of new compounds;
2. Identification of lead molecules;
3. Pre clinical investigation of new products.

FUNDING SOURCE
FP6- UE

DURATION
From: December 2005 - To: May 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
No
**PROJECT TITLE**
The coordination, rationalisation and integration of antimalarial drug discovery and development initiatives (CRIMALDDI)

**THEMATIC AREA**
Malaria, Antimalarial drugs, coordination

**TYPE OF ACTION**
- Education
- Research
- Coordination of activities

**TARGET COUNTRIES**
All PVS countries where malaria is endemic

**BENEFICIARIES**
1. Global stakeholders
2. Research groups in PVS
3. Funding agencies

**EXPECTED RESULTS**
1. A coordinated, rationalised and integrated series of initiatives to monitor and update the scientific and technological needs in the field of research and development of new antimalarial drugs according to the new priorities set by WHO;
2. A publication of a coordinated action plan and establishment of a five year rolling review timetable with quantitative endpoints that map directly onto the action plan;
3. Establishment of an expert advisory group that will work towards securing funding to enable the five year review and updated timetable to be followed.

**REFERENCES PERSON**
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**OBJECTIVES**
Overall: Coordination of leading European malaria research initiatives in antimalarial drug discovery and development.

Specific:
1. Co-ordinate the European effort with international initiatives;
2. Engage industry;
3. Provide guidance on standardisation of core requirements of regulatory drug development;
4. Contribute towards generating global priorities;
5. Prepare the European antimalarial research agenda for the next decade.

**MAIN ACTIVITIES**
1. Logical series of meetings, conferences, workshops and dissemination strategies that involve key organisations including MMV, WHO, the Gates Foundation and a number of academic malaria researchers;
2. Series of publication to inform community of proposed guidelines;
3. Final report to EU and malaria scientific community and stakeholders.

**FUNDING SOURCE**
FP7 - Health UE

**DURATION**
From: 2009 - To: 2011

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Follow up only

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**Teaching and scientific co-operation within the single-cycle degree course in Pharmacy**

**An exported model - Tirana**

At the Catholic University “Nostra Signora del Buon Consiglio”/“Our Lady of Good Counsel” (UniNSBC) in Tirana (Albania), managed by the homonymous Foundation, a Faculty of Medicine and Surgery and a Faculty of Economic and Political Sciences, in cooperation respectively with the University of Rome –Tor Vergata and the University of Bari, are present since the a.y. 2004-2005.

In the a.y. 2005-2006, a Faculty of Pharmacy with a single-cycle degree course in Pharmacy was founded as well, as a result of an agreement (July 2005) with the University of Milan (UniMi).

The UniNSBC initiative in Albania represents the greatest Italian university operation abroad, with its seven degree courses and the commitment of more than 450 Italian professors. Since the UniNSBC is a unique and highly qualified reference point in the whole Balkanic Area, among the goals of this co-operation there is the improvement of the healthcare and pharmaceutical systems in Albania and in the neighbouring countries.

The 2nd level degree course in Pharmacy of UniNSBC shares with that of UniMi the training goals, the study plan and the syllabus, and proceeds with an identical didactical path. The agreement between the two Universities binds them to encourage the exchange of students, whose study periods in the host University are considered as an integral part of the curriculum of the sending University. During the fifth year, the students get a double registration and are allowed to attend courses or laboratories and to take exams according to the rules of the host University as well as do their practical professional apprenticeship and the thesis.

The preparation of the degree course involved a large number of teachers of the Faculty of Pharmacy of UniMi (90% of the courses taught by Italians) and, following the convention of September 2007 and the additional act of 2010, the requirements to be fulfilled in order to be granted the double degree were established. Among these, the responsibility for teaching the lessons should rest with the Italian teachers for at least 70% of the credits.

As stipulated in the agreement, UniMi and UniNSBC are working to develop partnerships for improving the academic, cultural and scientific relations, for organizing teaching trips for professors, researchers and technical-administrative staff of both parties, in relation to research and training projects in areas of common interest. UniMi and UniNSBC have also committed to draw up a cooperation plan for scientific research. This plan will gradually become effective by setting up laboratories and by training its personnel at UniNSBC.

The development of collaboration and co-operation activities is supported by UniNSBC and its Foundation “Our Lady of Good Counsel”, on the basis of available resources and by acquiring public and private, national and international funding.

Paolo Castano - Dean of the Faculty of Pharmacy - UniNSBC, Tirana
Gianluigi Monticelli - Chairman of the Milanese Teaching Body in Tirana (CDMT) - UniMi, Milan

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**BOX**

Teaching and scientific co-operation within the single-cycle degree course in Pharmacy.

An exported model - Tirana

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Paolo Castano - Dean of the Faculty of Pharmacy - UniNSBC, Tirana
Gianluigi Monticelli - Chairman of the Milanese Teaching Body in Tirana (CDMT) - UniMi, Milan
The University of Milan has been and is currently involved in many programs of health development cooperation. As it can be found from the records that follow, the current partnerships include Italian and foreign NGOs, missionary organizations and government hospitals or government agencies of the countries which are the target of the interventions. Overall, the high rate of achievement of planned results in the current and previous activities stands for the validity of the actions performed. Long-term collaborations, if sustainable, have generally been preferred. Short-term goals have been pursued, especially in those cases where the available expertise for the preparation of the projects could allow access to funding from governments, international agencies or private foundations. The heterogeneity of the proposed objectives and the requirements imposed by various local situations necessarily have resulted in the adoption of different operative strategies, which were effectively implemented in most cases.

Based on the implemented experiences and on the requests received, the possible tasks of the University of Milan in health cooperation are to give a technical contribution to the design of the cooperation programs, to ensure the implementation of the operational research projects and the training activities.

The major epidemic diseases are the context in which the involvement of the University of Milan has been most often required. AIDS, TB, malaria and diarrheal diseases are universally recognized as priority public health emergencies, the fight against which intersects with the need to ensure proper organization of health care, proper nutrition and food security. The measures promoted by some professors of the University of Milan have turned primarily to the implementation of capacity building in clinical care, in particular, in the case of AIDS, for strengthening the organization of HIV treatment, preventing the mother-fetal transmission and educating for prevention of further infections.

The operational research is a key element for the identification of the prior objectives and for the identification of the measures to achieve them. Using to that end the diversified skills typical for a generalist university such as the University of Milan, can be particularly valuable and it can help to fill the gaps in the co-operation system.

There is chronic shortage of trained personnel in low-income countries, and the I. D. epidemics and the migrations to high-income countries have worsened the situation. The University of Milan can help fill these gaps by offering courses aimed at developing specific skills in local staff meant to enhance the intervention related to the health purposes previously identified as priorities. The model that is being developed emphasizes a strong integration with the local realities and needs,
mainly through local courses, and with the contribution where required of the distance education. An objective limit in many of the projects, completed or in progress, has been their dependence on the initiative of single professors or scholars. In the new university system, the future development of the health cooperation activities of our university requires a more precise definition of the criteria and of the priority areas of intervention that should take into consideration the involvement and the available expertise of the future departments in the health sector, including those involved in biomedical research. A method of coordination should also be found, able to ensure a maximum of synergies among health cooperation initiatives and in those fields where a university such as ours can provide significant contributions.
7.1

**PROJECT TITLE**
Collaborative HIV and Anti-HIV Drug Resistance Network - CHAIN

**THEMATIC AREA**
Medicine

**TYPE OF ACTION**
- Education
- Research

**TARGET COUNTRIES**
1. Estonia
2. Russia
3. Senegal

**EXPECTED RESULTS**
1. Completion of gaps in our knowledge for resistance to existing drugs and identification of novel resistance mechanisms to new drugs, preventing further development and spread;
2. Development and validation of new and common laboratory tools for prediction and measurement of HIV drug resistance;
3. Improved understanding of clinical implications of resistance to new drugs, with development of optimal management strategies for transmitted and acquired HIV drug resistance;
4. Sustainable evidence base for better control of the epidemic and management of infected individuals;
5. Incorporation of HIV gene sequence data into national HIV reporting structures;
6. Translation of clinical evidence into effective strategies to limit the emergence and transmission of HIV drug resistance into evidence-based recommendations for public health and regulatory authorities;
7. Creation of a level playing field within the European scientific landscape on HIV resistance, scientific and clinical expertise in the study and management of the resistance to HIV drugs.

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**MAIN PARTNERS**
Many partners; the complete list is available on:

**OBJECTIVES**
Overall: Improve the tools for the choice of the best ART regimen for HIV infected patients naive to ART; Improve the choice of new drugs for HIV infected patients failing ART.

**EXPERIENCED PERSON**
1. Novel mechanism cluster;
2. Improved laboratory monitoring tools cluster;
3. Improved clinical management cluster;
4. Molecular epidemiology and bioinformatics cluster;
5. Epidemiology and surveillance cluster;
6. Evidence-based public health and regulatory cluster;
7. Training and capacity building cluster.

**MAIN ACTIVITIES**
1. Collection of data from the existing cohorts;
2. Documentation of plasma stored by different cohorts;
3. Report of results of drug resistance according to different settings and geographical areas;
4. Preparation of guidelines for the management of drug resistance;
5. Report of the clinical and virological outcome of patients with 4 drug-resistance;

**FUNDING SOURCE**
EU

**DURATION**
From: 2009 - To: 2014

**POSSIBILITY OF RENEWAL/FOLLOW UP**

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7.2

**PROJECT TITLE**
Surveillance of HIV-1 drug resistance (DR), viral subtypes, HCV & HBV molecular epidemiology and pharmacogenomic correlates on plasma concentrations of Efavirenz and Nevirapine in Guinea Bissau.

**THEMATIC AREA**
Medicine

**TYPE OF ACTION**
- Education
- Research
- Technology Transfer

**TARGET COUNTRIES**
Guinea Bissau

**BENEFICIARIES**
1. HIV+ subjects
2. HCV+ subjects
3. HBV+ subjects

**EXPECTED RESULTS**
1. Identification of the pattern of drug resistance associated to antiretroviral therapy;
2. Identification of the profile of circulating HIV-1 subtypes;
3. Identification of the molecular epidemiology of HCV and HBV in Guinea Bissau;
4. Identification of the association between the development of lipodystrophy or side effects and known polymorphisms or new putative genes.

**OBJECTIVES**
Overall: Describe resistance patterns related to resistance to antiretrovirals, the profile of profile of circulating HIV-1 subtypes, the molecular epidemiology of HCV and HBV in Guinea Bissau.

Establish important correlations among genomic profile and plasma levels of antiretrovirals and side effects, e.g. lipodystrophy.

Specific:
1. Analyze the antiretroviral resistance pattern;
2. Describe the circulating HIV-1 subtypes;
3. Analyse the molecular epidemiology of HCV and HBV in Guinea Bissau;
4. Study the relationship between allelic variants belonging to known polymorphisms CYP and MDR1 and their influence on the plasma concentrations of Efavirenz and Nevirapine;
5. Check the relationship between known polymorphisms of POLG 1 gene among HIV-1+ individuals who are treated with NRTI and their susceptibility for the lipodystrophic syndrome;
6. Analyze new putative genes to clarify inter-individual variations which occur during the HAART-related lipodystrophic syndrome.

**MAIN ACTIVITIES**
The cohorts of HIV+ patients who will be enrolled in the present project have been established in 2001-2005 by including individuals who already have been followed by Ceu e Terras, Bissau, Guinea Bissau.

**FUNDING SOURCE**
Anlaids Lombardia Section, Italy

**DURATION**
From: September 2010 - To: September 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**

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**REFERENCE PERSON**
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Faculty of Medicine
Old Dept.: Dept. of Clinical Sciences “Luigi Sacco”; New Dept.: Dept. of Biomedical and Clinical Sciences “Luigi Sacco”
PROJECT TITLE
Surveillance of HIV-1 drug resistance (DR), viral subtypes, *M. tuberculosis* molecular epidemiology, HTLV & HBV molecular epidemiology and pharmacogenomic correlates on plasma concentrations of Efavirenz and Nevirapine in Swaziland.

THEMATIC AREA
Medicine

REFERENCE PERSON
Massimo Galli
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Old Dept.: Dept. of Clinical Sciences “Luigi Sacco”; New Dept.: Dept. of Biomedical and Clinical Sciences “Luigi Sacco”

OBJECTIVES

**Overall:** Describe resistance patterns related to resistance to antiretrovirals, the profile of circulating HIV-1 subtypes, the molecular epidemiology of *M. tuberculosis* and the molecular epidemiology of HTLV and HBV in Swaziland. Establish important correlations among genomic profile and plasma levels of antiretrovirals and side effects, e.g. lipodystrophy.

**Specific:**
1. Analyze the antiretroviral resistance pattern;
2. Describe the circulating HIV-1 subtypes;
3. Analyze the molecular epidemiology of *M. tuberculosis* in Swaziland;
4. Analyze the molecular epidemiology of HTLV and HBV in Swaziland;
5. Study the relationship between allelic variants belonging to known polymorphisms CYP and MDR1 and their influence on the plasma concentrations of Efavirenz and Nevirapine;
6. Check the relationship between known polymorphisms of POLG 1 gene among HIV-1+ individuals who are treated with NRTI and their susceptibility for the lypodystrophic syndrome;
7. Analyze new putative genes to clarify inter-individual variations which occur during the HAART-related lipodystrophic syndrome.

MAIN ACTIVITIES
1. Follow the cohorts of HIV+ and HIV/TB patients prospectively at the out-patient clinic of the Siteki Hospital, Swaziland; 2. Follow patients with HBV and HTLV infections prospectively.

FUNDING SOURCE
1. COSPE, Florence; 2. Anlaids Sezione Lombarda, Milan; 3. European Union

DURATION
From: September 2010 - To: September 2012

POSSIBILITY OF RENEWAL/FOLLOW UP

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**PROJECT TITLE**
Prevention of the maternal HIV transmission (PTMF)

**THEMATIC AREA**
Medicine (Infectious Diseases)

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**PROJECT TITLE**
Pharmacogenomic of gene polymorphism
CYP2A6, CYP2B6, CYP2C19, CYP2D6, CYP3A4, CYP3A5 and MDR1 and their influence on plasma concentrations of Efavirenz and Nevirapine in Peru.

**THEMATIC AREA**
Medicine

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**REFERENCES**

**PERSON**
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**OBJECTIVES**

**Overall:**
Prevention of the maternal-fetal HIV transmission (PTMF) and Antiretroviral therapy

**MAIN ACTIVITIES**
1. Medical support to the local population;
2. Training of local health operators;
3. Data collection and scientific research;
4. Development of a Telemedicine Platform for remote consulting and support;

**FUNDING SOURCE**
Association Cielo e Terra Onlus, Hospital L. Sacco in Milan, Asociación AIDA – Madrid, FMI, Banco Mundial, Unicef.

**DURATION**
From: January 2001 - To: ongoing

**POSSIBILITY OF RENEWAL/FOLLOW UP**
The project is expected to be continued

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**REFERENCES**

**PERSON**
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Faculty of Medicine
Old Dept.: Dept. of Clinical Sciences “Luigi Sacco”; New Dept.: Dept. of Biomedical and Clinical Sciences “Luigi Sacco”

**OBJECTIVES**

**Overall:**
Establish important correlations among genomic profile and plasma levels of antiretrovirals and side effects, e.g. lipodystrophy

**Specific:**
1. Study the relationship between allelic variants belonging to known polymorphisms CYP and MDR1 and their influence on the plasma concentrations of the 2 NNRTI Efavirenz and Nevirapine and their side effects,
2. Check on the onset of a relationship between known polymorphisms of POLG1 gene among HIV-1+ individuals who are treated with NRTI and their susceptibility to develop the lipodystrophic syndrome;
3. Analysis of new putative genes in order to clarify inter-individual variations which occur during the HAART-related lipodystrophic syndrome.

**TARGET COUNTRIES**
Peru

**BENEFICIARIES**
HIV+ subjects

**EXPECTED RESULTS**
1. Identification of any association between the development of lipodystrophy or side effects and known polymorphisms or new putative genes;
2. Individualization of the antiretroviral regimen.

**FUNDING SOURCE**
Italian-Peruvian Fund

**DURATION**
From: September 2010 - To: September 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**

The Operative Unit of the Virology Section, regularly using western standards for Africa too, routinely using administration and computerization. DREAM demands both in treatment and diagnostics, and in administration and technology transfer in resources limited settings.

The strengthening of health education on site is essential for long-term sustainability of any policy intervention although it is not enough to solve the immediate problems posed by public health emergencies.

Due to its characteristics, the University of Milan can be a major player in training projects for supporting medical schools in countries with low-intensity health expertise. The feasibility of such projects must be ensured by the presence of a hospital to serve as a university teaching hospital, by an acceptable logistics and by the availability of the local partners, both governmental and NGOs.

This model, that used to be more guaranteed by the support of the international agencies and by our university, can be easily exported to other similar situations and can become, in the future, a real contribution in response to the shortage of health personnel affects the majority of low-income countries, particularly in sub-Saharan Africa. In many countries the trained senior staff was decimated by AIDS or chose to migrate to find a better remuneration for their skills. Finally, many countries, even with large populations, have never had the opportunity to establish a medical school or to maintain its efficiency, eventually becoming almost entirely dependent on foreign countries for training and recruiting qualified health personnel. The 2009 WHO report indicates a doctor/patient ratio equal to or greater than only 5 per ten thousand in ten African nations. Seventeen countries have a doctor/patient ratio between 4 and 2 per ten thousand and the remaining twenty-nine countries have a ratio equal to or less than one per ten thousand. Almost all of the poorest countries, but also large and very populous ones such as Tanzania, the Democratic Republic of Congo and Ethiopia, are included in this list. The density of nurses throughout Africa is 4 per thousand and the density of health personnel is 2,3 per thousand in Africa, against 18,9 in Europe and 24,8 in the North and South America.

The interruption of this experience was not caused by financial reasons, or by the unavailability of professors, or by insurmountable logistical difficulties, despite the complicated situation in the country, but it was due to strategic differences between the actors of the project. The first two years of the medical school degree was completed by a class of 27 resident students by applying a core curriculum partly adapted to local needs, without condescending to unjustified simplifications. Each curricular subject was taught in French by professors of the University of Milan, using also methods of distance education.

The study support was provided locally by individual tutors and remotely from Italy by the UNIMI tenured professors. The tests were carried out orally when possible in the presence of professors of the University of Milan and partly, as appropriate, by providing questionnaires. Twenty-five students have successfully completed the first two years of medical school, passing the exams required. The cost of the activity was acceptable and sustainable as the participation of the UNIMI professors was on a voluntary basis, without additional remuneration.

Establishment and strengthening of the medical schools through partnership in the developing countries: the case of Chad.

As previously mentioned, the shortage of skilled health personnel affects the majority of low-income countries, particularly in sub-Saharan Africa. In many countries the trained senior staff was decimated by AIDS or chose to migrate to find a better remuneration for their skills. Finally, many countries, even with large populations, have never had the opportunity to establish a medical school or to maintain its efficiency, eventually becoming almost entirely dependent on foreign countries for training and recruiting qualified health personnel. The 2009 WHO report indicates a doctor/patient ratio equal to or greater than only 5 per ten thousand in ten African nations. Seventeen countries have a doctor/patient ratio between 4 and 2 per ten thousand and the remaining twenty-nine countries have a ratio equal to or less than one per ten thousand. Almost all of the poorest countries, but also large and very populous ones such as Tanzania, the Democratic Republic of Congo and Ethiopia, are included in this list. The density of nurses throughout Africa is 4 per thousand and the density of health personnel is 2,3 per thousand in Africa, against 18,9 in Europe and 24,8 in the North and South America.

The strengthening of health education on site is essential for long-term sustainability of any policy intervention although it is not enough to solve the immediate problems posed by public health emergencies.

Due to its characteristics, the University of Milan can be a major player in training projects for supporting medical schools in countries with low-intensity health expertise. The feasibility of such projects must be ensured by the presence of a hospital to serve as a university teaching hospital, by an acceptable logistics and by the availability of the local partners, both governmental and NGOs.

This model, that used to be more guaranteed by the support of the international agencies and by our university, can be easily exported to other similar situations and can become, in the future, a real contribution in response to the shortage of medical personnel in Africa.

Prof. Massimo Galli
Old Dept.: Department of Clinical Sciences “Luigi Sacco”;
New Dept.: Department of Biomedical and Clinical Sciences “Luigi Sacco”
Health promotion is the process that enables people to increase control over, and to improve, their health. It moves from a focus on the individual behavior, towards a wide range of social and environmental interventions” (http://www.who.int/topics/health_promotion/en/, accessed on Friday, 03 June 2011).

The quest for a better health, or a better life for us and the environment, is as old as man is. This quest cannot be limited to “developed” countries, but should include the whole planet and all mankind. But how this global intervention should be performed has gained different facets along the time and the space, and the current answers to the classic W questions (who, what, why, how, where, when) are no more those given in the last century.

For several decades (“When?”), “International cooperation” has been thought only in terms of: “developed countries helping under-developed countries”. But now we must be aware that things are different. On reading about the “Health - Other pathologies” activities made by UNIMI teaching staff (“Who?”), we find that “research” is the target of 12 out of 15 projects, “technology transfer” of five of them, “education” of four of them, while “health Improvement” and “community service” are targets of only one project each. Therefore, the “What” and “Why” are changed: international cooperation is becoming an effective way to enhance our possibilities of research, sharing competences and knowledge with colleagues abroad. “Where” are we going for these new international activities? The worldwide scenario for these projects goes from China to Japan, from Brazil to Colombia, from the Mediterranean Basin to the Arabian Peninsula, from India to Tanzania. It is difficult to tag all of these places as “third world” or even “emerging countries”. Interestingly, in two projects the beneficiaries of the interventions are Italian professionals: international cooperation becomes a way to take home new know-how, to get in touch with different experiences, and to deepen and widen our skills and expertise.

The question is “How” can we give and get the best from this changing international cooperation. Since 2005, my personal experience with Latin America (Brazil, “Functional anatomy of head and neck in normal subjects and in dental patients”, and Colombia “Quantitative anatomy of dental arches and palate”, but also Chile, where a new project is being defined) has always been one of reciprocal integration of competences and abilities. For instance, in the field of craniofacial and temporomandibular pain and dysfunction, I visited several medical and dental offices, both public and private, finding that the approach to the choice of treatment is something different from what we do in Milan. Often, after a similar diagnostic procedure, using even the same instruments and tests, our first approach to pain is pharmacological, giving the patient some drug for

8.0 Health and disease

PROMOTING HEALTH BY INTENSIFYING THE RESEARCH

Prof. Chiarella Sforza
Old dept.: Department of Human Morphology and Biomedical Sciences
New dept.: Department of Biomedical Sciences for Health

― Health promotion is the process that enables people to increase control over, and to improve, their health. It moves from a focus on the individual behavior, towards a wide range of social and environmental interventions” (http://www.who.int/topics/health_promotion/en/, accessed on Friday, 03 June 2011).

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symptoms relief. In Brazil, there is a stronger reliance on physical and myofunctional treatments: orofacial gymnastics, physiotherapy, ice packs, hot water, are all explained by the therapist and used by the patients with benefit.

There can be several reasons for this different approach: one can be monetary, with some parts of Brazilian population that cannot afford buying drugs, and has to relay on low-cost procedures. Another reason can be the time physicians devote to each patient, which is becoming shorter and shorter in Italy. Teaching a correct sequence of orofacial movements that can be performed by the patient at home requires more time than writing a prescription. Lack of time (and even laziness) is also a patient’s concern: our Italian patients may have a lower compliance if they are asked to actively participate in their treatment. So, from this perspective it is our country that needs some new intervention for health promotion (“...the process of enabling people to increase control over, and to improve, their health...”).

In these years with the Brazilian colleagues we shared our knowledge about new diagnostic and research instruments, with a particular focus on the development of diagnostic tests that can actually integrate technology into patient’s care, combining research and health promotion. On the other hand, we learned different methods of treatment that can be effectively applied also to our situation. Scientific publications are another facet of this kind of cooperation: within the three projects developed in my laboratory, during the last three years we have published 9 paper-works on international, peer-reviewed journals. In these papers, leadership was almost equally shared between UNIMI (five papers, two with Brazil, one with Colombia, two with Sudan) and the other partner countries (one with Colombia, three with Brazil).

A similar procedure of mutual exchange can be found also in other UNIMI projects of the present group (“Anatomical and functional characteristics of the trapezium metacarpal joint”, “Energetics and Biomechanics of Human Movement”, “Integration between Western Medicine and Chinese Medicine”, “Mediterranean Advanced School of Neuropsychopharmacology and Neuropsychiatry”, “New Technologies and Materials for the fractures and lengthening of Upper Extremities: clinical applications”, “Three-dimensional facial morphology in normal subjects and patients”).

Indeed, one of these projects is mainly focused on knowledge transfer towards the Italian practitioners, trying to integrate Traditional Chinese Medicine with our Western Medicine, as better detailed in the BOX.

Of course, among the others we can find also “classical” cooperation projects, where our current scientific expertise is used to actually help countries that are less developed in order to fight against infectious diseases (“Cholera outbreak in Zanzibar (Pemba Island) - 2006”, “Fusarium infections and deep seated fungal infections in ICU patients”, “Identification of factors affecting the folding and stability of enzymes from pathogenic organisms causing re-emerging diseases”, “Support to the control program of Tuberculosis in Tibetan communities in India”) or cancer (“DNA Methylation and Stomach Cancer Risk”).

Nonetheless, even these “classical” projects are carried out keeping in close touch with local health structures. A good example is the program for the control of tuberculosis in the Tibetan communities of India, where the specific aims are the integration of the Tibetan medical system and the community involvement in enhancing the traditional knowledge.

In conclusion (or at the beginning of this new era of international collaboration), we can feel confident that our efforts of working abroad and meeting other cultures will be rewarded by new ideas and energies for our daily work in UNIMI.
PROJECT TITLE
Training nursing staff and providing technical support for the Health Service - AFAGNAN

THEMATIC AREA
Healthcare education and training

TYPE OF ACTION
• Education
• Training

TARGET COUNTRIES
1. Togo (Afagnan city)

BENEFICIARIES
1. Local population
2. Local doctors
3. Nurses
4. Students

EXPECTED RESULTS
1. Improving the medical and healthcare knowledge of the local staff
2. Improving the health situation of the population
3. Cooperation between the local and the Italian health workers

PROMOTING ORGANIZATION
Prof. Walter Albisetti

MAIN PARTNERS
Italian and International: Waves World Association of Volunteers for Emergencies and Solidarity - NGO, Italy
Local: Hopital Missionnaire St.Jean de Dieu, Afagnan, Togo

OBJECTIVES
Improving the medical and healthcare knowledge of the local staff.
Improving the health situation of the population.

MAIN ACTIVITIES
1. Training doctors and local healthcare personnel
2. Provide medical and surgical equipment for starting up local health activities
3. Training general and specialized local nursing staff (cast work)
4. Implementation of the local medical and surgical activities through agreement with Italian universities and specialty schools.

FUNDING SOURCE
Private

DURATION
From: 2007 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable
PROJECT TITLE
Training physiotherapists from the Anoalite Hospital, Mungbere, Congo

THEMATIC AREA
Education, training

TYPE OF ACTION
• Education, Training

TARGET COUNTRIES
Congo (Mungbere city)

BENEFICIARIES
1. Nurses
2. Population
3. the Hospital

EXPECTED RESULTS
Improving knowledge on the physiotherapy techniques and learning new treatment methods. Improving the conditions of the patients.

PROMOTING ORGANIZATION
Prof. Walter Albisetti

MAIN PARTNERS
Local: Anoalite Hospital in Mungbere, Congo (managed by combonian Missionaries)

OBJECTIVES
Help training new therapists and improve the knowledge of those already trained. Improving the activity of the hospital by providing an adequate service to local population.

MAIN ACTIVITIES
Grants for physiotherapists from the Anoalite Hospital, Mungbere, Congo

FUNDING SOURCE
Private

DURATION
From: 2009 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

PROJECT TITLE
Grant for a student in Medicine - Sololo Hospital, Kenya

THEMATIC AREA
Education, training

TYPE OF ACTION
• Education, Training

TARGET COUNTRIES
Sololo, Kenya

BENEFICIARIES
A student in Medicine

EXPECTED RESULTS
The student in Medicine Ali Boru, who belongs to the Borana ethnic group, currently enrolled at the university in the third year, is supposed to obtain a degree in Medicine.

FUNDING SOURCE
Private

DURATION
From: 2009 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

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Old Dept.: Dept. Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. of Biomedical, Surgical and Dental Sciences

REFERENCE PERSON
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Old Dept.: Dept. Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. of Biomedical, Surgical and Dental Sciences
PROJECT TITLE
Training medical staff and providing technical support for the Health Service - TIGANIA

THEMATIC AREA
Healthcare education and training

REFERENCE PERSON
Walter Albisetti
Associate Professor
e-mail: walter.albisetti@unimi.it
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Faculty: Medicine and Surgery
Old Dept.: Dept. Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. of Biomedical, Surgical and Dental Sciences

OBJECTIVES
1. Improving the medical and healthcare knowledge of the local staff
2. Improving the health situation of the population

MAIN ACTIVITIES
1. Training doctors and local healthcare personnel
2. Provide medical and surgical equipment for starting up local health activities
3. Financing local forms of health insurance for people HIV positive

FUNDING SOURCE
Private

DURATION
From: 2010 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

TYPE OF ACTION
• Education
• Training

TARGET COUNTRIES
Kenya (Meru city)

BENEFICIARIES
1. Local Population
2. Local healthcare workers

EXPECTED RESULTS
1. Improving the medical and healthcare knowledge of the local staff
2. Improving the health situation of the population

PROMOTING ORGANIZATION
Prof. Walter Albisetti

MAIN PARTNERS
Italian and International:
Waves World Association of Volunteers for Emergencies and Solidarity - NGO, Italy
Local:
St. John of Good Hospital - Tigania, Meru, Kenya

PROJECT TITLE
Identification of factors affecting the folding and stability of enzymes from pathogenic organisms causing re-emerging diseases

THEMATIC AREA
Identification and characterization of molecular targets in the treatment of tuberculosis and malaria

REFERENCE PERSON
Alessandro Aliverti
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Faculty of Mathematical, Physical and Natural Sciences.
Old Dept.: Dept. of Biomolecular Sciences and Biotechnology; New Dept.: Dept. of Biosciences

OBJECTIVES
1. Identification of new drug targets;
2. Exploration of novel strategies in drug development;
3. Formation of young researchers in the area of drug development;

EXPECTED RESULTS
1. Dissection of the mechanism of folding/unfolding in selected proteins from pathogenic organisms;
2. Identification of factors affecting the native conformation of the above proteins;
3. Dissemination of the achieved results by the publication of articles in international scientific papers.

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
Alessandro ALIVERITI - Dept. of Biomolecular Sciences and Biotechnology, University of Milan
Local:
Vinod BHAKUNI - Division of Molecular and Structural Biology, Central Drug Research Institute, Lucknow, India

TYPE OF ACTION
• Education
• Scientific research in the area of drug development

TARGET COUNTRIES
India (Lucknow)

BENEFICIARIES
Scientific community of emerging countries

FUNDING SOURCE

DURATION
From: June 2004 - To: December 2005

POSSIBILITY OF RENEWAL/FOLLOW UP
No
PROJECT TITLE
DNA methylation and stomach cancer risk

THEMATIC AREA
Genetics

OBJECTIVES
Overall: Study of the effects of cigarettes smokes on stomach cancer and blood diseases.
Specific:
1. DNA methylation analysis by PCR-Pyrosequencing;
2. Study of DNA promoter methylation of 4 tumour suppressor genes: CDH-1, p16, RUNX and p53;

MAIN ACTIVITIES
1. DNA methylation analysis by PCR-Pyrosequencing on 112 stomach cancer cases and 112 controls;
2. Study of DNA promoter methylation of 4 tumour suppressor genes: CDH-1, p16, RUNX and p53;
3. Measurement of global genomic DNA methylation content estimated in long interspersed nuclear element-1 (LINE-1) repeated elements;
4. Development of assay for genes promoter methylation by locating the promoters using the Genomatica Software;
5. DNA methylation analyses on bisulfite-treated DNA using highly quantitative analysis based on PCR pyrosequencing;
6. Measurement of the percentage of 5mC (%5mC) by pyrosequencing, a technique that allowed us to measure multiple individual CpG dinucleotide positions for each marker.

FUNDING SOURCE
Sultan Qaboos University, National Institute of USA

DURATION
From: 2006 - To: ongoing

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes

REFERENCE PERSON
Andrea Baccarelli
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Faculty of Medicine
Old Dept.: Dept. of Environmental and Occupational Health, New Dept.: -

TYPE OF ACTION
- Research

TARGET COUNTRIES
Oman (Muscat)

BENEFICIARIES
Patients with gastric cancer

EXPECTED RESULTS
Analysis of global and site-specific DNA methylation in peripheral blood by pyrosequencing provides quantitative DNA methylation values that may serve as important prognostic indicators.

These results support the hypothesis that global hypomethylation is associated with gastric carcinoma in DNA derived from whole blood. Instead of promoter region hypermethylation, we found an intriguing pattern of promoter region hypomethylation in p-16, p-53, and RUNX-3. These finding should be investigated further in a larger study.

PROMOTING ORGANIZATION
- MAIN PARTNERS
  Italian and International: University of Milan
  Local: Dr. Omar Al Moundhri, Sultan Qaboos University

PROJECT TITLE
Energetics and biomechanics of human movement

THEMATIC AREA
Biomechanics

OBJECTIVES
Overall: Study of the metabolic cost of human body, in particular condition as walking (5 km/ hour).
Specific: Individuation of the muscles involved during the activity.

MAIN ACTIVITIES
1. Electromyographic research in the gait lab;
2. Calibration and setting up the experimental framework;
3. Recruit subjects;
4. Conduct experimental sessions;
5. Analysis of the data;
6. Write post-processing software;
7. Discussion of the results;
8. Write the scientific report.

FUNDING SOURCE
University of Rio Grande do Sul, Porto Alegre

DURATION
From: January 2006 - To: December 2006

POSSIBILITY OF RENEWAL/FOLLOW UP
No

REFERENCE PERSON
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Faculty of Medicine
Old Dept.: Dept. of Human Physiology; New Dept.: Dept. of Medical, Surgical and Transplant Pathophysiology

TYPE OF ACTION
- Research
- Technology Transfer

TARGET COUNTRIES
Brazil (Porto Alegre)

BENEFICIARIES
Academic scientists

EXPECTED RESULTS
1. Identification of muscles, among the ones involved in locomotion, with a specific role in locomotion economy;
2. Explanation of the following phenomena: a. the transition between walking and running; b. the effects of load carrying on muscle fatigue; c. the metabolic cost of locomotion is used as the dependent variable, while muscles activities represent the predictor, independent variables.

PROMOTING ORGANIZATION
- MAIN PARTNERS
  Italian and International: University of Milan
  Local: Dr. Leonardo Peyre-Tartaruga
**PROJECT TITLE**
Cholera outbreak in Zanzibar (Pemba Island) - 2006

**THEMATIC AREA**
Infectious diseases

**TYPE OF ACTION**
- Research
- Technology Transfer
- Community Service

**TARGET COUNTRIES**
Tanzania (Pemba - Zanzibar)

**BENEFICIARIES**
1. Local community of the Chake Chake District: around 89,000 people;
2. Technicians of the Public Health Laboratory Ivo de Carneri (Pemba);
3. Technicians of the Department of Water (DWD - Department of Water Development)

**EXPECTED RESULTS**
Clear improvement in the response (efficient and well organized) to cholera outbreaks in Zanzibar when compared to previous outbreak. In 2006, the Department of Public Health-Microbiology-Virology (University of Milan), works in close cooperation with the Cholera Committee and the local health operators to follow the epidemic, to follow up the outbreak and assess its epidemiological features. The Cholera Committee plays the central role in the integration system to strengthen epidemic surveillance, preparedness and response for cholera.

* Cholera Committee:
  - Global Task Force on Cholera Control, World Health Organization - Geneva
  - Public Health Laboratory Ivo de Carneri (PHL-IdC) - Pemba
  - Zanzibar Water Authority (ZAWA), Pemba

**PROMOTING ORGANIZATION**
NGO Ivo de Carneri Foundation, ZNZ - Milan

**MAIN PARTNERS**
Italian and International:
1. Department of Public Health, Microbiology, Virology - University of Milan
2. WHO - Global Task Force on Cholera Control

**REFERENCE PERSON**
Mirella Maria Pontello
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Old Dept.: Dept. of Public Health, Microbiology and Virology, New Dept.: Dept. of Health

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**PROJECT TITLE**
Project for the foundation of “Mediterranean Advanced School of Neuropsychopharmacology and Neuropsychiatry”

**THEMATIC AREA**
Neuropsychopharmacology, Psychiatry, Neurology, Pharmacy

**TYPE OF ACTION**
- Education
- Research

**TARGET COUNTRIES**
Countries of the Mediterranean Basin:
Albania, Algeria, Bosnia-Herzegovina, Cyprus, Croatia, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Morocco, Montenegro, Portugal, Serbia, Syria, Slovenia, Spain, Autonomous Palestinian Countries, Tunisia, Turkey

**BENEFICIARIES**
Young professionals (medical doctors, clinical pharmacologists, psychiatrists, neurologists, psychologists)

**EXPECTED RESULTS**
1. Clinicians and neuroscientists of the different Mediterranean Countries will obtain and update an advanced scientific knowledge and will be offered an exchange of experiences and point of views in the diagnosis, prevention and treatment of major psychiatric and neurological diseases;
2. Analysis of the contingent situation in the different related Countries through questionnaires and dissemination of them;
3. Harmonization in the treatments of mental disorders among the Countries located in the Mediterranean Basin;
4. Realization of a web based platform with access through ID and password to be able to follow offline distance learning Educational Courses;
5. Realization of frontal educational workshop in at least two Member States per year.

**PROMOTING ORGANIZATION**
- MAIN PARTNERS
  - Italian and International:
    Faculty members of each single member state
  - Local:
    Referees for each single member state

**OBJECTIVES**
Overall: Increase the psychiatric and neuropsychopharmacological know-how among young professionals in the Countries on the Mediterranean Basin.

**DURATION**
From: October 2010 - To: October 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes

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**REFERENCE PERSON**
Giorgio Angelo Racagni
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Faculty of Pharmacy
Old Dept.: Dept. of Pharmacological Sciences; New Dept.: Dept. of Pharmacological and Biomedical Sciences

**OBJECTIVES**
Overall: Increase the psychiatric and neuropsychopharmacological know-how among young professionals in the Countries on the Mediterranean Basin.

**DURATION**
For other two years (2013-2014)

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes
**PROJECT TITLE**
Functional anatomy of head and neck in normal subjects and in dental patients

**THEMATIC AREA**
Anatomy, Dentistry, Maxillofacial surgery

**OBJECTIVES**
Overall: Definition of methods for the instrumental evaluation of the stomatognathic system
Specific:
1. Definition of the measurement method;
2. Collection of normative data;
3. Comparison with patients.

**MAIN ACTIVITIES**
1. Definition of the measurement method;
2. Collection of normative data;
3. Comparison with patients.

**EXPECTED RESULTS**
1. Definition of methods for the instrumental evaluation of the stomatognathic system, including the development of instruments and methods, with a special commitment for non-invasive methods;
2. Definition of normal reference values for Brazilian people;
3. Use of the quantitative instrumental test for diagnosis and evaluation of treatment in the areas of Orofacial Pain and Temporomandibular Disorders.

**PROMOTING ORGANIZATION**
Dept. of Human Morphology and Biomedical Sciences, University of Milan

**MAIN PARTNERS**
Italian and International:
- Local: 1. Prof. Cláudia M. de Felício, Faculty of Medicine of Ribeirão Preto (FMRP), University of São Paulo; 2. Prof. Marco A. Rodrigues da Silva, Faculty of Dentistry of Ribeirão Preto, University of São Paulo

**DURATION**
From: January 2006 - To: December 2015

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes

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**PROJECT TITLE**
Quantitative anatomy of dental arches and palate.

**THEMATIC AREA**
Dentistry, Maxillofacial surgery

**REFERENCE PERSON**
Chiarella Sforza, Virgilio F. Ferrario
Full Professors

**TYPE OF ACTION**
- Research
- Technology Transfer

**TARGET COUNTRIES**
Brazil (São Paulo - Ribeirão Preto)

**BENEFICIARIES**
1. Students
2. Dental patients

**EXPECTED RESULTS**
1. Definition of methods for the quantitative, three-dimensional analysis of human dental arches and hard tissue palate;
2. Definition of normal size and shape of dental arches and hard tissue palate in Colombian people;
3. Patients with cleft lip and palate: comparison of different treatments on palatal size and shape;
4. Dental patients: comparison of the effect of different pathologies and relevant treatments on dental arch size and shape;
5. Transfer of methods and technology to Colombian researchers and students.

**PROMOTING ORGANIZATION**
Dept. of Human Morphology and Biomedical Sciences, University of Milan

**MAIN PARTNERS**
Italian and International:
- Local: Prof. Ana María Cerón-Zapata, Prof. Ana María López-Palacio, Prof. Claudia C. Restrepo, CES University, Medellin, Colombia

**DURATION**
From: January 2003 - To: December 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Yes
177

176

8.12

PROJECT TITLE
Three-dimensional facial morphology in normal subjects and patients

THEMATIC AREA
Anatomy, Dentistry, Maxillofacial surgery

REFERENCE PERSON
Chiarella Sforza, Virgilio F. Ferrario
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phone: 02 503 15407
Faculty of Medicine Old Dept.: Dept. of Human Morphology and Biomedical Sciences; New Dept.: Dept. of Biomedical Sciences for Health

OBJECTIVES
Overall: Definition of non invasive methods for the 3D analysis of facial morphology
Specific:
1. Cooperation among researchers, local staff training;
2. Definition of diagnostic tests;
3. Definition of reference values.

MAIN ACTIVITIES
1. Definition of the measurement method;
2. Collection of normative data;
3. Comparison between patients.
The instrumental methods currently in use in our Dept for the 3D non invasive, quantitative analysis of facial morphology will be applied to normal individuals from North Sudan. Normative data will be defined, and applied for the diagnosis, treatment planning and quantitative analysis of results in patients with alterations of craniofacial morphology.
Sudanese researchers and physicians will take full advantage of the new methods and technologies.

FUNDING SOURCE
El-Razi College of Dentistry, Khartoum, Sudan; University of Milan

DURATION
From: January 2009 - To: December 2012

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes

8.13

PROJECT TITLE
Integration between Western Medicine and Chinese Medicine

THEMATIC AREA
Medicine

REFERENCE PERSON
Umberto Solimene
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Faculty of Medicine and Surgery
Old Dept.: Dept. of Human Morphology and Biomedical Sciences; New Dept.: Dept. of Biomedical Sciences for Health

OBJECTIVES
Overall: Find a way to respond to pain and suffering through TCM
Specific:
1. Allow the attending physicians to understand the cultural and theoretic foundations of TCM (Traditional Chinese Medicine) and its applications to treat the most common diseases, according to science and conscience;
2. Allow the attending physicians to enable them to appreciate and, possibly, exploit the opportunities for integration and synergy between TCM and WM (Western Medicine).

MAIN ACTIVITIES
Class lectures and workshops hold by Italian and Chinese teachers on the major differences and unexpected relations that lay on the basis of the epistemological models of WM and TCM.

FUNDING SOURCE
Italian Ministry of Health

DURATION
From: 2006 - To: 2008

POSSIBILITY OF RENEWAL/FOLLOW UP
The new project is under evaluation
178

**PROJECT TITLE**
Fungal infections (Fusarium infections and deep seated fungal infections in ICU patients)

**THEMATIC AREA**
Microbiology

**REFERENCE PERSON**
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Faculty of Medicine and Surgery  
Old Dept.: Dept. of Public Health, Microbiology and Virology; New Dept.: Dept. of Biomedical Sciences for Health

**OBJECTIVES**
Specific:  
1. Collect information on ICU patients affected with deep seated fungal infections;  
2. Collect Candida bloodstream isolates from ICU patients to be tested for biofilm production;  
3. Collect information on superficial and disseminated Fusarium infections;  
4. Collect Fusarium isolates to be identified by molecular methods.

**MAIN ACTIVITIES**
1. Analysis of information (demographic, clinical, microbiological) concerning patients from two Turkish ICUs together with those from wards of other European countries;  
2. In vitro test biofilm production of Candida isolates from bloodstream infections in ICU patients;  
3. Analysis of information (demographic, clinical, microbiological) concerning Turkish patients with superficial or disseminated Fusarium infections in the context of a European survey involving 12 countries;  
4. Identify by molecular methods Fusarium isolates from superficial or disseminated infections and analyse the biodiversity.

**FUNDING SOURCE**
-  
**DURATION**
From: January 2006 - To: December 2008  
**POSSIBILITY OF RENEWAL/FOLLOW UP**
-  

**TYPE OF ACTION**
- Research  

**TARGET COUNTRIES**
Turkey

**BENEFICIARIES**
ICU patients

**EXPECTED RESULTS**
-  

**PROMOTING ORGANIZATION**
-  

**MAIN PARTNERS**
Italian and International:  
1. Prof. Anna Maria Tortorano, University of Milan  
2. Lena Klingspor, Karolinska University, Stockholm  
3. COE (Centro Orientamento Educativo, Milan)  
5. WHO  
6. AISPO  
7. MAE Ministry of Foreign Affairs

**PROJECT TITLE**
Support to the control program of tuberculosis in Tibetan communities in India

**THEMATIC AREA**
Health

**REFERENCE PERSON**
Luisella Verotta  
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phone: 02 503 14108  
Faculty of Mathematical, Physical and Natural Sciences  
Old Dept.: Dept. of Organic and Industrial Chemistry; New Dept.: Dept. of Chemistry

**OBJECTIVES**
Overall: Improve health conditions among Tibetan refugees in India, allowing equal access to the services to Indian population  
Specific:  
1. Integration of the Tibetan system of medicine, involving Tibetan doctors and health workers in an awareness campaign focusing on prevention, early diagnosis and diet to eradicate TB;  
2. Involvement of the community in valorizing the traditional knowledge.

**MAIN ACTIVITIES**
1. Ethic network between biomedical and Tibetan systems of medicine to reach the communities with correct and clear information and involve them in a comprehensive strategy of prevention and early diagnosis of TBC;  
2. Seminar and training about prevention and diet to enhance the network with experts and field workers involved in the campaign;  
3. Botanical-medical-nutritional data collection and organisation;  
4. Awareness campaign through bilingual manual, posters, a documentary prepared by the network, involving Tibetan medicine experts and community spiritual leaders with emphasis on iconic approach;  
5. Diet improvement through cultivation of food integrators in kitchen herbal gardens  
6. Follow up of the obtained results in a pilot settlement.

**FUNDING SOURCE**
MAE Ministry of Foreign Affairs  
AISPO

**DURATION**
From: January 2009 - To: December 2011  
**POSSIBILITY OF RENEWAL/FOLLOW UP**
Unknown
After the visit of the first Official Medical Delegation with Professors P. Mantegazza (pharmacologist), Edmondo Malan (surgeon), and Carlo Lorenzo Cazzullo (psychiatrist) to China in 1973, the University of Milan was among the first in Europe to open up to Traditional Chinese Medicine. Those outstanding pharmacologists and clinicians, in fact, saw its great therapeutic and prevention opportunities that, if appropriately considered, tested, and implemented, could offer a valuable integration to modern medical sciences. That first visit gave start to a long-lasting and profitable cooperation, which still continues uninterrupted, between our University and peer Chinese Institutions.

Below there is a list of the most significant recent activities, still undergoing, important steps that were then used as a model to inspire similar initiatives in other academic institutions both in Italy (Rome, Florence) and abroad (Munich).

- Creation of post-graduate specialization courses on Acupuncture (since 1992)
- Establishment by the World Health Organization (WHO) of the European reference Centre for Traditional Medicine (since 1997)
- Cooperation with the Chengdu University for research on phytotherapy
- Cooperation with the Nanjing University for education on TCM
- Cooperation with the University for TCM in Beijing
- Cooperation with the University for Traditional Medicine in Shanghai
- Cooperation with the University for Traditional Medicine in Guanchow

Additionally, the University of Milan hosts the only European centre recognized by the World Health Organization as a reference institution in this field (WHO Collaborating Centre for Traditional Medicine). The mission in China in August 2004 of the then Minister of Health and the interest shown including by some prominent components, scientists and professors, among whom there was also prof. G. Coggi (at that time Dean of the Faculty of medicine of the University of Milan), pharmacologists, and businessmen in the potential of the Traditional Chinese Medicine made even more relevant the issue of its teaching in the faculties of medicine.

The creation of the "Master course for integration between the Traditional Chinese Medicine and the Western Medicine", is one of the real results of this mission.

Even the Ministers of health that have followed have always actively supported, through the General Executives in charge, this initiative of medical education.

The Ministry of Health which has been its promoter and supporter, including financially, identified the Universities of Milan and Rome (La Sapienza) as training centres in collaboration with the University for Traditional Medicine of Nanjing.

In September 2011 a top-level Delegation from the Guangzhou University has visited our University for an agreement on quality in Traditional Chinese Medicine Training.
Five are, to date, the projects addressed to the so-called “Developing Countries”, submitted for publication in this section dedicated to the management of problems related to the society and the institutions and two are the boxes on concurrent initiatives. Before examining common elements, characteristics and potentialities, it seems appropriate to raise a critical survey to the expression “developing countries” in order to set a rationalization of the future relationship between our University and the emerging countries. One should, in fact, take into consideration how at least two out of the five national partners, woven in the cooperative relationship described in this section - China, India, Kenya, Namibia and Thailand - belong to the so-called “Big Four”, better known as the BRIC countries (Brazil, Russia, India and China). In fact, they are emerging economies that, as shown during the years of global economic crisis that we are living, are able to maintain high standards and rates of production and employment, unlike the Western economies.

Screening the projects offered hereinafter, a common educational and training pattern emerges of four out of five of them: the cooperation project in the international law field (project leader Marco Pedrazzi), between the Chinese University of Harbin and the University of Milan; the one concerning the creation of a Centre of European Studies in Delhi, designed to promote collaboration between the European Union and India (project leader Alessandro Vescovi), where our University focused on human migrations and on the socio-economic recovery of human capital marginalized due to the AIDS pandemic, in the two projects for a Ben Khai community of peasants, in Thailand, and of the Aids-orphans of a missionary school in Karungu, Kenya (project leader Walter Albisetti).

The two projects involving China and India depend on mutual exchange of students and teachers. The relations, therefore, are not inspired by a one-way “gift”-connection, but they are built as an exchange of skills and subject-oriented methodologies, to be reproduced and strengthened with mutual consent of the two universities (the first), and by signing a bilateral agreement (for the second one). The aim of both projects is rather the creation of a common language among scholars and students (the actors of tomorrow), in a shared working platform, indispensable for the creation of adequate tools in managing problems and planning solutions in compelling growing societies. It should also be taken into consideration how counterpart societies are currently competing, not only in economic and labour policies, but also in terms of values involved in the management of the social relations and consideration of individuals and communities, within the framework of human security, fundamental in managing the different spheres of the right. Such a competition should necessarily be overcome in a mature relation in the interdependent dimension among nations and the mutual recognition of the legitimacy of values.
The projects managed by Walter Albisetti, only apparently overcome his medical role, as they are aimed to heal communities via the reintegration into society of Aids affected peasants, by the instrument of structured and organized labour, aimed at its reproduction being respondent to the needs of the whole Ban-Khai community (Thailand); and via the acquisition of formal education by the Aids-orphans, in the project addressed to the Kenyan district. Their aim is to reduce disparities and produce a normalization of contexts pathologically affected by stigma and renunciation to the future.

Different, at least in part, is the project presented by the current writer. The scholar, in her specific skills matured in post-conflict societies studied in Southern Africa, after long years of field research in Namibia, since the dawn of its independence from South Africa, becomes a monitor agent of the reconstruction of a twenty-three years conflict, following the fate of the specific social category of ex-combatants, evaluating, in parallel, the ambiguous relation of the new nation with its past, its human “residual” (among “heroes”, “remnants” and “relics”) and the citizens: through the institutionalization of the resolution of a reintegration problem; the evaluation of the terms, the perceptions and the historical roots of it, and the related political discourse. The intense exchange with the institutions involved, the research endorsed and sustained by the University of Namibia, and the release by request of the report on the research undertaken and its findings, to the past management of the Department of Veterans Affairs - introduced during the last years of research -, show the institutional recognition of the need to take into account academic perspectives.

Finally, a spot on the funding sources: it should be noted that the European money support the project for the creation of a Centre for European Studies in India, that the interested Universities finance the Sino-Italian cooperation project, while private funds are the means that permitted the other three projects aiming to individuate and correct contingent obstacles to set a sustainable future, which affect their replication and monitoring.

**The role of the University in the socio-institutional partnership**

The evolution of the development cooperation policy into partnership policy in our country, although along a bumpy road, is undeniable. While managed for a long time primarily by the civil society and by the voluntary associations in a way not always coordinated, with the establishment of the Directorate General for the Development Cooperation (DGDC) at the Ministry of Foreign Affairs and within the broader and compelling framework of the foreign policy of the European Union, if, on the one hand, the development cooperation policy suffers from an endemically lack of funding appropriate for the commitments undertaken by the Italian governments over the past twenty years, it is increasingly benefiting from a closer interrelation with the academic world both locally and internationally, but not in an organic way. A stronger interaction between institutional coordination, the universities and the civil society would be desirable. It would most probably benefit the entire system of partnership and the Italian academic world itself by integrating it in a more immediate way into the needs of the global society. Such an awareness has inspired Stefano Bocchi (Faculty of Agriculture, Univ. of Milan) and the undersigned (Faculty of Political Sciences, Univ. of Milan) when creating the Inter-University, Interfaculty, Interdisciplinary Seminar (SIII): an informal inter-university consortium, guaranteed by the professors of several Milanese faculties of the University of Studies of Milan, of the University of Bicocca, and of the Polytechnic in Milan together with their related networks, by some organizations of the civil society operating in the different sectors involved, as well as by some willing public administrators (see Box). SIII has been offering, on an annual basis, since 2006, multidisciplinary seminars meant to deepen issues related to human vulnerability and security, to the policies of sustainable resource management, invoking an aware and responsible intermediation conducted by the States. Both the SIII and the “agents” of the academic cooperation in the projects presented below aim at raising awareness, developing skills and foster disciplinary exchanges among the societies involved in their actions, starting from their home country, thus trying to bring together academic skills and voluntary organizations active in the emerging countries with the aim of generating a constructive improvement of the long-term projects that are rooted into strong-willing societies that want them with a conscious perception of their costs and short-mid-long term consequences.

The recent organization of the Italian-Libyan Committee Ma’an Li’l-Ghad is part of this process (see Box): the presence of the academics next to the operational organizations which are aware of their own role (first in managing the emergency, then in the participated reconstruction of a livelihood for the beneficiaries), guarantees a holistic approach of the project going beyond the specificity of the intervention and entrusting it to the operational expertise of the Ngo’s volunteers - stimulated, as in this case, by the emergency of the war -, in view of an integrated approach which can be replicated and is likely to evolve into a cultural and equal exchange relation.

**Conclusions**

These experiences (partnership in university training; support to and a guarantee of a possibly equal livelihood; monitoring of the institutional accountability in admitting and addressing local socio-economic issues; as well as the experience of the multi-disciplinary training seminar aimed at the society perceived as a “donor” and that of the Joint Committee which drags from an emergency situation to an almost peaceful, equilibrated cultural relationship) bring us to hope for a growing role of the university expertise, namely in the socio-political field, in the monitoring of medium-long-term cooperation and partnership projects with the aim of assessing, in an interdisciplinary way, their social impact, possible local corrections, correct adoption of techniques to fit different contexts in a partnership relation, in order to guarantee the replicability of the projects in an integrated improvement of their socio-economic destination system, but also careful to ensure and foster the participation of the local institutions to their management as to make sure that the local government bodies will develop a sense of responsibility towards the society instead of being replaced by an expression of civil society of foreign origin.
PROJECT TITLE
Garden of Eden - Production of organic fertilizer - Thailand

THEMATIC AREA
Education, training

TYPE OF ACTION
• Education
• Training

TARGET COUNTRIES
Ban-Khai, Rayong province, Thailand

BENEFICIARIES
Population

EXPECTED RESULTS
Reintegration of people with AIDS through their participation in the production of organic fertilizers within the Garden of Eden

PROMOTING ORGANIZATION
Prof. Walter Albisetti

MAIN PARTNERS
Italian and International:
1. Waves World Association of Volunteers for Emergencies and Solidarity - NGO, Italy
2. Foundation Pro.sa NGO, Italy
3. Andegardo Farm in Cernusco Bombardone, Italy
4. Mister Ciambrelli, Italy
5. Embassy of Luxembourg

Local:
Garden of Eden Rehabilitation Centre

OBJECTIVES
1. Broadening the activities carried out within the association the Garden of Eden
2. Reintegrate into the labour market of HIV positive people
3. Creating new working activities

MAIN ACTIVITIES
1. Provide the materials that allow starting and carrying on the production of fertilizer
2. Provide the means for the transportation and distribution of the products

FUNDING SOURCE
Private

DURATION
From: 2011 - To: 2012

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

REFERENCE PERSON
Walter Albisetti
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Faculty: Medicine and Surgery
Old Dept.: Dept Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. of Biomedical, Surgical and Dental Sciences
PROJECT TITLE
Project for teaching materials and furnishing for the elementary school for AIDS orphaned children
- Beato Luigi Tezza, Karungu, Kenya

THEMATIC AREA
Education

REFERENCES PERSON
Walter Albisetti
Associate Professor
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Faculty: Medicine and Surgery
Old Dept.: Dept. Surgical and Reconstructive Sciences and Diagnostics; New Dept.: Dept. of Biomedical, Surgical and Dental Sciences

OBJECTIVES
Help preventing the school drop-out and improve the living conditions and the opportunities in life for the orphaned children of the school through the access to elementary education

MAIN ACTIVITIES
1. Provide textbooks, teaching materials and school uniforms
2. Equip the classrooms

FUNDING SOURCE
Private

DURATION
From: 2004 - To: 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Renewable

TYPE OF ACTION
Education

TARGET COUNTRIES
Kenya (Karungu City)

EXPECTED RESULTS
Allow the pupils to attend school and improve learning as well as a greater involvement of the teachers

PROMOTING ORGANIZATION
Prof. Walter Albisetti

MAIN PARTNERS
Italian and International:
1. Waves World Association of Volunteers for Emergencies and Solidarity - NGO, Italy
2. Foundation Pro.sa NGO, Italy
Local:
1. B. L. Tezza Elementary School managed by the Camillians, Karungu, Kenya

PROJECT TITLE
Towards the institutionalization of a problem: the reintegration of the ex-combatants in Namibia and the establishment of the Ministry of the Veterans’ Affairs

THEMATIC AREA
Political

REFERENCES PERSON
Cristiana Fiamingo
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Faculty of Political Sciences
Old Dept.: Dept. of International Studies; New Dept. of International, Legal, Historical and Political Studies

OBJECTIVES
Overall: Analysis of the ex-Combatants’ reintegration in the framework of the Namibian national reconciliation policy and its impact on the society
Specific: 1. Analysis of political culture reproduction in the nation building process;
2. Analysis of strategies/changes of a major party with militaristic culture;
3. Analysis of institution building in a democratising country

MAIN ACTIVITIES
1. Research on original documents;
2. Interviews to executives belonging to institutions, civil society networks and associations of veterans;
3. Analysis of “grey” literature, blogs included. In 2007, the Namibian Government endorsed the socio-economic reintegration of the ex-combatants issue that systematically hits war-torn societies. After many years of protests, only the achievement of a common strategy among the ex-freedom-fighters prompted the Swapo Party (the former liberation movement) to institutionalise the problem by creating a Ministry of Veterans’ Affairs and launching an expensive pension scheme. The strategies employed are compared with the solutions proposed by neighbouring Countries belonging to the SADC.

FUNDING SOURCE
So called PUR funds (university programs for the research) and University of Milan

DURATION
From: May 2002 - To: September 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
We are seeking institutional funds and not, in order to ensure the presence on the field and for further research
### Objective 1: Encourage scientific and academic cooperation

**Specific:**
1. Exchange of professors, researchers and students;
2. Joint application for international research projects.

**Main Activities**
Research activity on international law with specific regard to international space law, international criminal law, international human rights law, international humanitarian law and European law.

**Funding Source**
Available funds of the HIT and of the University of Milan.

**Duration**
From: October - November 2006
To: October - November 2011

**Possibility of Renewal/Follow Up**
Renewable upon written mutual consent approved by the academic authorities.

### Objective 3: Joint Application for International Research Projects

**Specific:**
1. Exchange of teachers;
2. Have promising students coming over from India.

**Main Activities**
1. Teaching: three Italian professors will go to Delhi to teach European related topics while a number of researchers from Delhi University will also be coming to Milan to pursue their studies;
2. Tutoring;
3. Organizing a Symposium. The project includes other European partners, viz. Ècole Normale Superieur, Paris, Aarhus University, University of Leiden.

**Funding Source**
EU, India - EU Study Centres Programme

**Duration**
From: 1st January 2010 - To: 31st December 2012

**Possibility of Renewal/Follow Up**
Likely
SIII / Inter-University, Interfaculty, Interdisciplinary Seminar

SIII, promoted by Stefano Bocchi (Faculty of Agriculture) and Cristiana Fiamingo (Faculty of Political Sciences) of the University of Milan, since the A.Y. 2006-2007, has gathered annually, in multi-disciplinary seminars, professors of the Faculties of Agriculture, Political Sciences and Arts and Philosophy of the University of Milan; of the Faculty of Education Science of the University of Milan Bicocca and the branches of Territorial studies and Architecture2 of the Politecnico of Milan, experts, civil society organizations active in the different sectors involved, as well as public officials available and disposed to public confrontations.

Target audience

University students, NGO workers, teachers and citizens of Milan

Method

Low cost interdisciplin ary seminars, hosted in the different universities involved, divided between presentations open to debates to the public and a final round table organized at the house of Culture in Milan, to take publicly stock of both initiatives and methods, by confronting local authorities.

Topics

The topics covered are related to the seven spheres of human security (economic, political, personal, environmental, community, food and health) within the framework of sustainable resource management policies. The aim is to provide competent and sensitive contributions in raising “awareness” among the civil society while an increasingly aware and responsible civil intermediation on behalf of the States with regards to human vulnerability is expected. In addition to raising awareness, enhancing skills and disciplinary interchanges within our society, which is increasingly entrenched in an attitude of self-defence, one of the purposes of the SIII consists in bringing closer to the Academy the voluntary organizations active in the emerging countries in order to produce a constructive improvement in the cooperation projects. For the past three years, the collaboration with the Lombard educational project Bring the World to School and the Ellis Disciplinary Network (disciplin ary association of teachers belonging to the other educational levels) has been aiming at comparing teaching knowledge and coordination methods in order to raise awareness among the younger generations and citizens in general.

Financing sources

University of Milan (stationery, buffets and travel expenses of the visiting lecturers for the events managed by its Faculties of Agriculture and Political Sciences) and Department of Human Education Sciences “Riccardo Massa” of the Bicocca University for expenses related to its own initiatives. Each university involved has made available its offices and its staff (teachers and technical staff). Particularly noteworthy is the successful activity of the CTU (University of Milan) that, in coordination with the counterpart technical office in Bicocca, made possible the streaming for the conferences (A. Y. 2009-2010).

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http://siiiconoscereperdecidere.wordpress.com

Italo-Libyan committee Ma’an Li’l-Ghad (Together for tomorrow) non-profit

Constituted on the 4 March 2011, at the Faculty of Political Sciences of the University of Milan, the Italo-Libyan committee aims at promoting humanitarian activities meant for the Libyan population victim of the ongoing war and, therefore, the relations between the Italian and Libyan educational/training institutions. The president is Cristiana Fiamingo, Assistant Professor of History and Institutions in Africa (University of Milan); Emilio Celurale (NGO Alisei) is the secretary; the account-ant Aldo Rossi is the treasurer; the other members are: Ruggero Tozzo, President Ngo Alisei in Milan, coordinator of the activities in Libya; Hasan Gritli engineer (Rome); Barbara Airò professor of Arabic (Pavia University), professor of African History Anna Baldisetti (University of Perugia); Ligurian Port System, Giorgio Pagano (AGM Officials without Borders); Antonietta Postacchini psychologist (Hosp. St. Eugene - Rome); head of mission, expert in humanitarian aid projects, Italo Quarto, physician (Senior Association), and other medical specialists in orthopaedics and limb rehabilitation. The Libyan partners are: The International Organization for Peace, Care & Relief, the Libyan Association for the Children’s and Women’s Rights with the National Centre for Infectious Diseases Prevention and Control, Libyan Disabled Association Amal for Deaf and Hearing loss, Humanitarian Association, the Cooperation Dept. of the Libyan Ministry of Health.

Beneficiaries

Libyan population victim of the war, local NGOs, cultural institutions

Funding

Individuals, Associations, Ligurian Port System, donations from Italian pharmaceutical companies

Purposes and Action

The cooperation programs are identified by the Committee as agreed with NGO Alisei (active in Libya since January 2011) which carries them out together with the Libyan partners and relying on the expertise of the promoters. Mostly active in the Orthopaedic Centre of Benghazi, the Alisei’s team is formed by doctors and healthcare professionals specialized in the treatment and rehabilitation of war-wounded people, needing prosthesis. In collaboration with the Libyan Ministries of Health and Social Affairs, a training/updating program in these areas has been scheduled for the local health and healthcare support workers as well as for the staff specialized in psycho-social support for injured people. Additional requests are those related to helping young people living with HIV/AIDS and women raped during the armed counter-action of the loyalists. The Committee is also engaged in raising funds to set up partnership agreements between Italy and Libya in humanitarian aid agencies, civil rights protection and culture promotion through cultural projects and cultural exchanges between the Italian and Libyan population for socio-medical, agricultural as well as capacity building training programs in order to assist vulnerable population groups.

Prof. Cristiana Fiamingo
Old Dept.: Department of International Studies
New Dept.: Department of International, Legal, Historical and Political Studies
http://maanlitghad.com
The projects that are recorded in the following pages, are related to two Asian countries that over the last years increasingly occupy the international scene: countries whose ancient civilizations require complex and well-structured close examination conducted by international groups, such as the research project coordinated by Prof. Boccali on the Indian literary and aesthetic issues, which is made in collaboration with the Italian Institute for Asia and Africa (ISIAO) and with leading international universities: Charles University, Prague, Jagiellonian University, Krakow, the University of Warsaw, the University of Calicut.

The other projects have China as a reference point. As for the qualitative improvement in welcoming the Chinese students our university has implemented projects meant to promote and improve their Italian linguistic and cultural skills, in order to make the path of gaining knowledge on our country more and more worthwhile and effective for the new representatives of the Chinese elite during the delicate phase of their international education. Our university was one of the first in our country to participate in important international initiatives aimed at promoting our educational offer in China (the MIUR CRUI mission in 2004 in Beijing, Shanghai, Nanjing should be mentioned), at hosting Chinese students by organizing, thanks to the CARC, intensive six-months courses and dedicated tutoring within the framework of the “Marco Polo Project”, and at continuing to build a well-structured and comprehensive educational project thanks also to the activation, within the Linguistic and cultural mediation first degree course applied to the economic, legal and social field, of the curriculum “Italian Language and Culture for foreign linguistic mediators” (STRANIMEDIA) designed specifically for students of non-Italian nationality. Established in 2001, thanks to an innovative collaboration project between the Faculty of Arts and Philosophy and that of Political Sciences, the first degree course in Linguistic and cultural mediation has been completed in 2005/2006 with a second cycle degree in Languages, Cultures and International Communication that, in 2008/2009, became Languages and cultures for communication and for international cooperation, within which from the academic year 2011/2012 the curriculum “Italian L2 for integration and intercultural communication” will be activated to complete the curriculum of the first cycle degree STRANIMEDIA. Among the foreign students enrolled in these courses, the Chinese ones are around 250 (almost 500 throughout Unimi).

The cooperation agreements with the University of Nanjing and the Normal University of Dalian have been achieved within this framework in order to enhance the local teaching of Italian language and culture and prepare the groundwork for starting joint degrees able to foster the students’ mobility and that of scholars and researchers.
With regards to the training of young experts from China, it should be noted that, thanks to a cooperation agreement between the Unimi and the Chinese National Office for the dissemination of the Chinese language abroad (Han Ban), our University has become, since as far back as 1994, the Italian testing centre (the only one in our country until 2007) entitled to carry out the Chinese Proficiency Test (Hanyu Shuiping Kaoshi HSK), the Chinese language exam internationally recognized, and it still remains the most popular testing centre in Italy, with dedicated courses, various learning activities, exchange of students and scholars, regular refresher courses for teachers.

Finally, we should remind the creation of the Confucius Institute of the University of Milan (November 2009) that relies on the collaboration and support of the aforementioned Han Ban, along with the scientific and educational partnership of the cited Liaoning Normal University of Dalian aimed at promoting the study of the Chinese language and culture. There are many scholarships for language training in China which are granted by the Han Ban to reward our best students, and the support for high-profile scientific and teaching initiatives that are organized in our university to foster the training of Italian specialists on China and that of Chinese specialists on various aspects of our country, is solid and constant.
10.1
PROJECT TITLE
Studies in Indian literature and aesthetics

THEMATIC AREA
Indology

REFERENCE PERSON
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Faculty of Humanities and Philosophy
Old Dept.: Dept. of Sciences of Antiquity; New Dept.: -

TYPE OF ACTION
• Research

TARGET COUNTRIES
1. Italy
2. Poland
3. Czech Republic

BENEFICIARIES
1. The international community of scholars
2. Students
3. Highly educated audience

EXPECTED RESULTS
Realization of studies on:
1. The genesis of Indian classical literature (kāvya) and its socio-cultural background, and the relationship between kāvya, Epics and Tamil literature; on the structure of long kāvya poems, and on the representation of natural landscapes and environments such as the city and hermitage;
2. The intentional evocation by the authors of a specific aesthetic response (rāsa) among the ones sanctioned by classical theorists. In particular, studies on the aesthetic theories and their development, from the most ancient metaphysical foundations to the great debates among the different schools;
3. The phenomenology of passions, from an aesthetic as well as religious and social standpoint, and in Indian visual arts;
4. Linguistics and the philosophy of language, in connection with historical semantics and the evolution of grammatical thought.

PROMOTING ORGANIZATION
Chair of Indology (Prof. Giuliano Boccali, Prof. Cinzia Pieruccini), University of Milan

MAIN PARTNERS
Italian and International:
Italian Institute for Africa and the East, Lombardia Section, (IsIAO)

Local:
1. Charles University, Prague
2. Jagiellonian University, Cracow
3. University of Calicut, Kerala, India

OBJECTIVES
Overall: Scientific exchange in indological research
Specific:
1. Scientific Essays;
2. Didactics;

MAIN ACTIVITIES
Rotating International Seminars organised in cooperation with:
• Jagiellonian University, Cracow in 2001, 2005;
• University of Warsaw in 2008;
• University of Calicut in 2010:
Pandarus Series, Prague in 1999-2009;
Calicut proceedings (forthcoming);
Erasmus Staff Mobility: Prof. Giuliano Boccali, Prof. Cinzia Pieruccini, since the Academic Year 2007-2008 (Collaborations with Prague and Cracow).

FUNDING SOURCE
University of Milan and the Universities participating in the project.

DURATION
From: 1998 - To: ongoing cooperation

POSSIBILITY OF RENEWAL/FOLLOW UP
The co-operation is presently continuing without interruption.

10.2
PROJECT TITLE
Chinese Proficiency Test sessions at the University of Milan

THEMATIC AREA
Chinese Language

REFERENCE PERSON
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Old Dept.: Dept. of Contemporary Languages and Cultures; New Dept.: Dept. of Sciences for Linguistic Mediation and Intercultural Studies

TYPE OF ACTION
• Education
• Community Service

TARGET COUNTRIES
China (Beijing)

BENEFICIARIES
1. Students
2. Teachers
3. Researchers

EXPECTED RESULTS
Increase the number of students and researchers with Chinese language proficiency certified by the official Chinese Body (Han ban)

PROMOTING ORGANIZATION
- 

MAIN PARTNERS
Local:
Chinese Ministry of Education, General Office for the promotion of Chinese Language (Han Ban)

OBJECTIVES
Overall:
Chinese proficiency Test (HSK)
Specific:
On behalf of Han Ban, organize and hold official Chinese Proficiency Test sessions.

MAIN ACTIVITIES
Chinese Language test and certifications

FUNDING SOURCE
Han Ban

DURATION
From: June 1994 - To: June 2011

POSSIBILITY OF RENEWAL/FOLLOW UP
Yes
PROJECT TITLE
Student exchange China Italy

THEMATIC AREA
Chinese language, Italian Language

REFERENCE PERSON
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Linguistic Mediation and Intercultural Studies

OBJECTIVES
Overall: Improve Chinese and Italian language proficiency
Specific: Language and culture courses

MAIN ACTIVITIES
1. Organization of Italian language intensive courses for Chinese students coming to Milan University and Chinese language course for Italian students going to China;
2. Internships;
3. Seminars.

FUNDING SOURCE
Self supported by applicants

DURATION
From: January 2005 - To: January 2008

POSSIBILITY OF RENEWAL/FOLLOW UP
No

TYPE OF ACTION
• Education
• Research
• Community Service

TARGET COUNTRIES
China (Beijing)

BENEFICIARIES
1. Chinese students and researchers
2. Italian students and researchers

EXPECTED RESULTS
Increase level of proficiency in Chinese (for Italian students) and Italian (for Chinese students).

MAIN PARTNERS
Italian and International:
University of Milan
Local:
China Education Association for International Exchange (Beijing)

PROJECT TITLE
Confucius Institute at the University of Milan

THEMATIC AREA
Chinese Language and Culture

REFERENCE PERSON
Alessandra Lavagnino
Full Professor
e-mail: alessandra.lavagnino@unimi.it
phone: 02 503 21640
Faculty of Political Sciences
Old Dept.: Dept. of Contemporary Languages
and Cultures; New Dept.: Dept. of Sciences for
Linguistic Mediation and Intercultural Studies

OBJECTIVES
Overall: Disseminate knowledge of Chinese language and culture
Specific:
1. Chinese language and culture courses;
2. Chinese proficiency test.

MAIN ACTIVITIES
1. Conferences, Seminars;
2. Cultural Events.

FUNDING SOURCE
Chinese national Office for Chinese Language Promotion (Han Ban)

DURATION
From: December 2009 - To: December 2014

POSSIBILITY OF RENEWAL/FOLLOW UP
Expected to be renewed

EXPECTED RESULTS
1. Better understanding and increased interest towards traditional China and contemporary Chinese reality, both cultural and economic;
2. Training specialists on different topics related to contemporary China, with good language proficiency, interpreters and translators.

MAIN PARTNERS
Italian and International:
1. University of Milan
2. USR (Regional Education Office Lombardy)
Local:
1. Han Ban
2. Liaoning Normal University (Dalian)
<table>
<thead>
<tr>
<th>PROJECT TITLE</th>
<th>Student exchange program China Italy</th>
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<td>THEMATIC AREA</td>
<td>Chinese Language and Culture</td>
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**REFERENCE PERSON**  
Alessandra Lavagnino  
Full Professor  
e-mail: alessandra.lavagnino@unimi.it  
phone: 02 503 21640  
Faculty of Political Sciences  
Old Dept.: Dept. of Contemporary Languages and Cultures; New Dept.: Dept. of Sciences for Linguistic Mediation and Intercultural Studies

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<tr>
<th>TARGET COUNTRIES</th>
<th>China (Dalian)</th>
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</table>
| BENEFICIARIES | 1. Italian students  
2. Chinese students |

**EXPECTED RESULTS**  
-  
**PROMOTING ORGANIZATION**  
-  
**MAIN PARTNERS**  
Italian and International:  
University of Milan  
Local: Liaoning Normal University

**OBJECTIVES**  
Overall: Promoting Chinese studies and research  
Specific: Chinese Language and Culture Training

**MAIN ACTIVITIES**  
1. Language and Culture intensive Courses on site;  
2. Language internships;  
Students from the University of Milan are selected for scholarship covering accommodation and tuition at Liaoning Normal University in Dalian

**FUNDING SOURCE**  
Han Ban  
**DURATION**  
From: December 2009 - To: December 2011

**POSSIBILITY OF RENEWAL/FOLLOW UP**  
Yes

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<tr>
<td>THEMATIC AREA</td>
<td>Italian language, didactics</td>
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**REFERENCE PERSON**  
Silvia Morgana  
Full Professor  
e-mail: silvia.morgana@unimi.it  
phone: 02 503 12890  
Faculty of Humanities and Philosophy  
Old Dept.: Dept. of Modern Philology; New Dept.: Dept. of Literary, philological and linguistic studies

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**TARGET COUNTRIES**  
China

**BENEFICIARIES**  
1. Chinese university students  
2. Chinese teachers of Italian language  
3. Italian students and teachers

**EXPECTED RESULTS**  
1. Improve the knowledge of Italian language of Chinese students;  

**PROMOTING ORGANIZATION**  
University of Milan – CALCIF (Centre for the promotion of the Italian language and culture "Chiara e Giuseppe Feltrinelli")

**MAIN PARTNERS**  
Italian and International:  
Prof. Lavagnino, Faculty of Political Sciences, University of Milan  
Local: Institute of Foreign Studies, University of Nanjing

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**MAIN PARTNERS**  
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1. Chinese university students  
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**PROMOTING ORGANIZATION**  
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**MAIN PARTNERS**  
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**EXPECTED RESULTS**  
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**PROMOTING ORGANIZATION**  
University of Milan – CALCIF (Centre for the promotion of the Italian language and culture "Chiara e Giuseppe Feltrinelli")

**MAIN PARTNERS**  
Italian and International:  
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Local: Institute of Foreign Studies, University of Nanjing

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**TARGET COUNTRIES**  
China

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1. Chinese university students  
2. Chinese teachers of Italian language  
3. Italian students and teachers

**EXPECTED RESULTS**  
1. Improve the knowledge of Italian language of Chinese students;  

**PROMOTING ORGANIZATION**  
University of Milan – CALCIF (Centre for the promotion of the Italian language and culture "Chiara e Giuseppe Feltrinelli")

**MAIN PARTNERS**  
Italian and International:  
Prof. Lavagnino, Faculty of Political Sciences, University of Milan  
Local: Institute of Foreign Studies, University of Nanjing

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**TARGET COUNTRIES**  
China

**BENEFICIARIES**  
1. Chinese university students  
2. Chinese teachers of Italian language  
3. Italian students and teachers

**EXPECTED RESULTS**  
1. Improve the knowledge of Italian language of Chinese students;  

**PROMOTING ORGANIZATION**  
University of Milan – CALCIF (Centre for the promotion of the Italian language and culture "Chiara e Giuseppe Feltrinelli")

**MAIN PARTNERS**  
Italian and International:  
Prof. Lavagnino, Faculty of Political Sciences, University of Milan  
Local: Institute of Foreign Studies, University of Nanjing

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**TARGET COUNTRIES**  
China

**BENEFICIARIES**  
1. Chinese university students  
2. Chinese teachers of Italian language  
3. Italian students and teachers

**EXPECTED RESULTS**  
1. Improve the knowledge of Italian language of Chinese students;  

**PROMOTING ORGANIZATION**  
University of Milan – CALCIF (Centre for the promotion of the Italian language and culture "Chiara e Giuseppe Feltrinelli")

**MAIN PARTNERS**  
Italian and International:  
Prof. Lavagnino, Faculty of Political Sciences, University of Milan  
Local: Institute of Foreign Studies, University of Nanjing
PROJECT TITLE
Teaching Italian as a working language

THEMATIC AREA
Italian, didactics. Teaching Italian for working purposes (textile sector)

TYPE OF ACTION
- Education
- Research
- Community services

TARGET COUNTRIES
Egypt (Alexandria)

BENEFICIARIES
Egyptian textile workers

EXPECTED RESULTS
1. Involvement of teachers and graduates of Promotails 2008-9 master in the realization of an Italian language course for working purposes;
2. Planning and realization of a course for Egyptians working in Italian textile industries in Alexandria.
The University of Milan and the Don Bosco School of Alexandria are collaborating in the project.

PROMOTING ORGANIZATION
CALCIF (University Centre for the Promotion of the Italian culture and language “G. & C. Feltrinelli”), University of Milan

MAIN PARTNERS
Italian and International:
1. Faculty of Tourism, University of Alexandria
2. Don Bosco School - Alexandria
Local:
1. Textile company Ahlan, Alexandria
2. Filmare Nile textile company, Alexandria (Italian office in Zocco d’Erbusto)

OBJECTIVES
Overall: Teaching Italian to Egyptians working in Italian textile industries
Specific:
1. Plan and realize a course of Italian sectional language;
2. Plan and realize an Italian-Egyptian dictionary of textile terms;
3. Facilitate interlinguistic and intercultural communication in the working environment.

MAIN ACTIVITIES
1. Planning of special lesson plans and of specific teaching material;
2. Workshop of Italian language on textile vocabulary;
3. Linguistic facilitation for documents used by the company for internal and external communication.
Two graduates of Promotails master did a two-month internship in companies participating also in the realization of a textile vocabulary. Afterwards, they collaborated with the same companies for 6 months as linguistic mediator and facilitator.

FUNDING SOURCE
Companies involved or interested in the project

DURATION
October - December 2009 (2 internships), January - June 2010 (Italian language courses).

POSSIBILITY OF RENEWAL/FOLLOW UP
2010 - 2011. Internship renewal for graduates of Promotails master; collaboration for Italian language courses for Egyptian workers; courses of Italian sectional language.

REFERENCE PERSON
Silvia Morgana
Full Professor
e-mail: silvia.morgana@unimi.it
phone: 02 503 12890
Faculty of Humanities and Philosophy
Old Dept.: Dept. of Modern Philology; New Dept.: Dept. of Literary, philological and linguistic studies

10.7
University Centre for the Promotion of the Italian Language and Culture G. and C. Feltrinelli/Centro d’Ateneo per la promozione della lingua e della cultura italiana G. e C. Feltrinelli - CALCIF

CALCIF (University Centre for the Promotion of Italian Language and Culture G. and C. Feltrinelli) (www.calcif.unimi.it) has among its institutional purposes “to implement and carry out activities to promote and develop the knowledge of the Italian language and culture among foreigners and Italians”, also in collaboration with other faculties and divisions of our university as well as with other interested universities or external subjects with the same aims. Since CALCIF was founded in 2004, it has organized:

• seven sessions of the International Italian Language and Culture Courses in Gargnano (Palazzo Feltrinelli), attended by more than 1000 students from all over the world (more than 70 different nationalities). More and more foreign students are interested in studying Italian abroad, especially in countries like Angola, Cameroon, China, Egypt, Jordan, Kazakhstan, Mozambique, New Zealand, Sudan, Thailand and Vietnam.
• seven sessions of the Italian Language Courses for EU Students, within the Socrates/Erasmus program, during two semesters each academic year (8-9 courses offered each year). The courses are organized for students from all faculties.
• since 2007-8 four sessions of the Intensive Italian Language Courses for Chinese students have been held, as part of the C.R.U.I. “Marco Polo” program, for students pre-enrolled in all the faculties of our university or of other Italian universities. Currently 214 Chinese students are attending 10 courses (QCERL level A-B).
• since 2006-7 CALCIF has collaborated with the Master Promoitals program (www.promoitals.unimi.it; www.italianlinguadue.unimi.it), aimed at training qualified Italian L2 teachers who work in Italy and abroad and who promote Italian language and culture. 90% of the Master program is based on distance learning and in 2009 it was awarded with the European Language LABEL, an award of the European Commission to the most innovative projects in the field of professional language training. Roughly 20 foreign students from extra-European countries (Morocco, Brazil, China, Japan) have participated in the 4 Master programs already completed.
• moreover, CALCIF collaborates with other institutions in Italy and abroad in designing and offering many different types of courses: Italian language courses for professional purposes for foreign adults integrated in the labor market; language and culture courses aimed at exploring the most significant cultural aspects of Italy, mono-thematic courses about language and culture for specific fields (fashion, cooking, lyric opera).

Prof. Silvia Morgana
Old Dept.: Department of Modern Philology; New Dept.: Department of Literary, Philological and Linguistic Studies

Contemporary Asia Research Centre - C.A.R.C

Asia has by now become a reference point in the global economy, with its different actors and an inexhaustible capacity to develop new and unexpected scenarios. And, if once it used to be a remote and ideal place, a destination longed for in someone’s adventurous dreams, nowadays it is a common reality with which everyone has to reckon.

The Contemporary Asia Research Centre of our University (President: Prof. Marino Regini, Director: Prof. Alessandra Lavagnino) was born - with the Chancellor’s Decree on the 30th of June 2005 (USM prot. 0022414) - with the aim of developing and increasing the research on the cultural, economic, legal, political and social realities of the Contemporary Asia. The Centre, to which different departments of our university adhere, is based at the Department of Contemporary Languages and Cultures, and conducts a rigorous interdisciplinary research activity, using facilities that have a wide-ranging expertise, constantly integrated and supported by the essential language skills concerning the countries of reference.

In support of these research activities for, during the last years, the CARC has also promoted and organized, in collaboration with major international organizations (Japan Foundation, Toshiba Foundation, Han Ban - China), many events that were hosted by the University of Milan. These meetings ranging from conferences, workshops, to round tables, etc., have from time to time touched on economic, political, historical, literary and artistic issues within the frontiers of Asia and thanks to the intervention of internationally well-known and respected scholars have drawn the attention of a diverse audience formed not only by students but by external experts and colleagues as well. We should remind, for instance, the International Conference “Regional Integration and Socio-Political Change in Asia” (24-25 November 2006), “Japanese Trading Companies and Manufacturers: my personal experience” by Dr. Atsuya Sugawara (2006, Central Glass Europe Ltd.), “Japan: Key Contemporary Political Issues” (2007), round table that has attracted distinguished scholars from Japan’s most prestigious universities including Waseda University, “Japan’s Regional Foreign, Foreign Economics and Security Policies” (2008), international workshop, “Okinawa in the national history and memory of the modern Japan” by Prof. Rosa Caroli (2008, University Ca ‘Foscari, Venice); “Tanizaki Jun’ichiro and the game of deception” by Prof. Adriana Boscaro (2008, University Ca ‘Foscari, Venice); “The modernity dream of Mori Ogai” by Prof. Matilde Mastrangelo (2009, University La Sapienza, Rome); “China and Japan on the seas in the sixteenth and seventeenth centuries” by Prof. Patrizia Carioti (2009, University L’Orientale, Napoli); “Luxury and robots: new consumption trends in China and Japan” by Prof. Carlo Filippini (2011, Bocconi University, Milan); and the recent conference “Japan and the mediated information” (2011) which was attended by specialists in the field, diplomats of the Embassy of Italy in Tokyo, scholars and students.

Prof. Alessandra Lavagnino
Old Dept.: Department of Contemporary Languages and Cultures; New Dept.: Department of Sciences for Linguistic Mediation and Intercultural Studies

Box
The research and the activities carried out by the University of Studies of Milan in the Cultural Heritage field at an international level form a wide and diversified panel due to the high number of countries involved, European and non-European, and to the different types of intervention. The well-structured wealth of knowledge and expertise of the University allow a range of scientific activities in collaboration with scientists and institutions from Europe, Asia, Africa, Latin America and North America, aimed at promoting the Cultural Heritage through new fieldwork archeological research; restoration and recovery projects for a better usage of the archeological areas and parks as well as of the museums, and the application of the most modern technologies in the Cultural Heritage field.

The Cultural Heritage depends indeed a lot on the extraordinary means that the technology offers to the modern human being and the virtual reality allows a sharing that leads, on one hand, to worthwhile exchanges within the scientific community and, on the other hand, to an intense communication with the public.

The speed of the communication should though flank the accurate slowness of the pure research when an archeological find is discovered and recovered from the ground as well as when an old book is examined. The researchers who work in Syria, Egypt and China are all embarked in this challenge.

The new research is also aimed at developing projects of restoration and protection of archaeological sites in order to preserve them and make them accessible to the public. The collaboration with the institutions responsible for the protection and for the research and with the museums of the various countries fosters the sharing of tools, aims and objectives and seeks to promote the exchange of experiences. The University projects have started building this bridge with the different countries involved in the research.

The enhancement of the Cultural Heritage can and should have also a social spin-off and should act as a driving force for the economy of the underdeveloped areas of the planet with the aim of improving the living conditions of the local populations. The archeological, ecological, anthropological and cultural wealth can and should foster the economic development and the project that the University carries out in Peru operates to that effect.

The attention focused on the present society and on the needs of the emerging economies appears as a peculiarity of the cultural activities of the new Millennium.

11.0 Cultural heritage

RECOVERY OF THE ARCHAEOLOGICAL HERITAGE
IN ORDER TO REDISCOVER THE ROOTS
OF THE CIVILIZATION AND DEVELOP TOURISM

Prof. Maria Teresa Grassi
Old dept.: Department of Sciences of Antiquities
New dept.: Department of Cultural and Environmental Heritage
**PROJECT TITLE**
Mission of geoarchaeological and archaeologi
cal researches at the edge of the oasis of Tadmor (Palmira)

**THEMATIC AREA**
Climate change, Cultural dynamics

**REFERENCE PERSON**
Mauro Cremaschi
Full Professor
e-mail: mauro.cremaschi@unimi.it
phone: 02 503 15546
Faculty of Mathematical, Physical and Natural Sciences
Old and new Dept.: Dept. of Earth Science Ardito Desio

**OBJECTIVES**
Specific:
1. Reconstruct past landscapes and evidence of human impact on it;
2. Geoarchaeological survey.

**MAIN ACTIVITIES**
1. Field research of paleoenvironmental and archaeological evidence;
2. Archaeological excavations in selected sites.

**FUNDING SOURCE**
Italian Ministry of Foreign Affairs, University of Milan, Italian Ministry for University and Research

**DURATION**
From: 2005 - To: December 2011

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Each year a formal contract with the department of Antiquity is renewed

**TYPE OF ACTION**
• Education
• Research
• Technology transfer

**TARGET COUNTRIES**
Syria (Damascus)

**BENEFICIARIES**
1. Local community and Syrian and foreign tourists
2. Students
3. Professors of the Department of Antiquities and Museum

**EXPECTED RESULTS**
1. Archaeological map of the surrounding of Palmrya;
2. Reconstruction of the environmental changes and cultural dynamics starting from 10.000 years ago;
3. Desertification and nucleation timing in the area of the Palmrya Oasis.

**PROMOTING ORGANIZATION**
- 

**MAIN PARTNERS**
Italian and International:
Prof. Daniele Morandi, University of Udine
Local:
Dott. Jamous Bassam, dott. Michel Maqdisi, Di
rector General des Antiquités et des Musees

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**PROJECT TITLE**
Excavation in Umm-el-Breigāt (Tebtynis)

**THEMATIC AREA**
Archaeology, Classical antiquities, Safeguard of Cultural Heritage

**REFERENCE PERSON**
Claudio Gallazzi
Full Professor
e-mail: claudio.gallazzi@unimi.it
phone: 02 503 12911
Faculty of Humanities and Philosophy
Old Dept.: Dept. of Antiquity Sciences; New Dept.: Dept. of Literary, Philological and Linguistic Studies

**OBJECTIVES**
1. Reconstruct past landscapes and evidence of human impact on it;
2. Geoarchaeological survey.

**MAIN ACTIVITIES**
1. Field research of paleoenvironmental and archaeological evidence;
2. Archaeological excavations in selected sites.

**FUNDING SOURCE**
Italian Ministry of Foreign Affairs, University of Milan, Italian Ministry for University and Research

**DURATION**
From: October 1988

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Three-year agreement automatically renewed, unless one of the Parties involved withdraws.

---

**TYPE OF ACTION**
• Research

**TARGET COUNTRIES**
Egypt

**BENEFICIARIES**
1. Scientific community
2. Tourism industry

**EXPECTED RESULTS**
The French-Italian mission aims at getting to the following results in 5 years time:
1. Complete the excavations of the Byzantine ruins in ancient Tebtynis, which were found in 2004, and make a detailed presentation of the area in order to bridge a gap in the history of the village;
2. Keep on publishing the series Fouilles franco-
italiennes (Le Caire, IFAO), printing at least a volume per year containing descriptions of the build-up area or editions of finds;
3. Complete the restoration of the buildings discovered in past years and prepare the excavated area for public view.

**PROMOTING ORGANIZATION**
-

**MAIN PARTNERS**
Italian and International:
1. University of Milan
2. French Institute of Eastern Archaeology (Institut français d’archéologie orientale - IFAO)

**OBLIGATIONS**
Overall: The French-Italian mission of the University of Milan and of the French Institute of Eastern Archaeology of Cairo aims at reconstructing the history, at following the urban development and at getting to know daily life of ancient Tebtynis, a village placed in the Fayûm oasis (Egypt), founded around 1800 BC. This village was inhabited continuously until the XII century AD. It will be possible to get to this goal thanks to the particular conditions of the place: ruins are well-preserved, remarkable amount of papyri have been found from previous excavations and a lot of written material can still be found nowadays. Since it is possible to arrange together the results obtained from the archaeological investigation and the data obtained from the texts, a complete series of information will be acquired. At the same time, the mission is engaged in developing a wide restoration and protection plan of the build-up area in order to guarantee the preservation of the place and to make the area visitable and attractive for common tourists, too.

Specific:
1. Study of ancient Tebtynis;
2. Excavation of a district in the village;
3. Valorisation of the place.

**FUNDING SOURCE**
University of Milan, Italian Ministry of Foreign Affairs, French Institute of Eastern Archaeology (Institut français d’archéologie orientale - IFAO)

**DURATION**
From: October 1988

**POSSIBILITY OF RENEWAL/FOLLOW UP**
Three-year agreement automatically renewed, unless one of the Parties involved withdraws.

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**RETURN TO CONTENT**
**PROJECT TITLE**

Palmira Project. The south-western area of the city: urban transformation and development processes (Italian - Syrian archaeological mission PAL.M.A.I.S.)

**THEMATIC AREA**

Archaeology, Urban planning, Education, Cultural Mediation

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**TYPE OF ACTION**

- Education
- Research
- Technology Transfer
- Events/communication

**TARGET COUNTRIES**

Syria (Damascus)

**BENEFICIARIES**

1. Tadmor inhabitants (20/30 people working in the excavation site)
2. Officials of the General Directorate of Antiquities and Museums of Damascus
3. Officials of the Museum of Palmira
4. Children attending the Primary school of Tadmor
5. Students of the University of Milan

**EXPECTED RESULTS**

1. Acquire full knowledge of its urban structure, its chronology and its specific functional destination;
2. A systematic investigation of a building, with a stratigraphic excavation, to widen knowledge on private building trade, quite an unknown area in the site;
3. Training the local staff on computer techniques for database and storage;
4. Teaching project for children in elementary schools.

The archaeological research of the joint Italian-Syrian mission PAL.M.A.I.S. involves the south-western district of the city, until now excluded from systematic investigation.

**PROMOTING ORGANIZATION**

- **MAIN PARTNERS**
  - Italian and International:
    1. University of Milan
    2. University of Rome, La Sapienza
    3. IULM University, Milan

---

**REFERENCE PERSON**

Maria Teresa Grassi
Associate Professor
e-mail: maria.teresa.grassi@unimi.it
phone: 02 503 12322
Faculty of Humanities and Philosophy
Old Dept.: Dept. of Sciences of Antiquity; New Dept.: Dept. of Cultural and Environmental Heritage

Local:
1. General Directorate of Antiquities and Museums of Damascus
2. Museum of Palmira

**OBJECTIVES**

Overall: Systemic investigation of an until now unexplored district in Palmira

**PROJECT TITLE**

Project for the development of the capacities of the communities in the framework of agroindustry, archaeological research and sustainable tourism of the “Santuario historico del bosque de Pomac” - PROPOMAC

**THEMATIC AREA**

Archeology, Education, Anthropology, Literature, Territorial Studies, Local Development

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**TYPE OF ACTION**

- Education
- Research
- Project for the development and the valorization of the Park
- Events/meetings
- Books

**TARGET COUNTRIES**

Peru

**BENEFICIARIES**

1. Local communities
2. Women
3. Farmers

**EXPECTED RESULTS**

Transformation of a depressed area into a touristic destination through both the promotion of the park and of its archeological, ecological, anthropological and cultural potential in order to improve the local community's life conditions by stimulating the agricultural and artisanal activities.

**PROMOTING ORGANIZATION**

- **MAIN PARTNERS**
  - Italian and International:
    1. University of Milan
    2. University of Rome, La Sapienza

---

**REFERENCE PERSON**

Emilia Perassi
Full Professor
e-mail: emilia.perassi@unimi.it
phone: 02 503 13543
Faculty of Humanities and Philosophy
Old Dept.: Dept. of Language Studies and Comparative Literature; New Dept.: Dept. of Foreign Languages and Literatures

**OBJECTIVES**

Specific:
1. Economic development;
2. Sustainable tourism;
3. Archeological and cultural promotion of the region.

**MAIN ACTIVITIES**

1. Educational courses;
2. Valorization of the naturalistic and archeocultural area of park;
3. Updated outline of the cultural and anthropological problems regarding the beneficiaries of the project;
4. Production of scientific publications and audiovisual materials (Books and documentaries).

**FUNDING SOURCE**

FIP (Italian-Peruvian Fund)

**DURATION**

From: April 2010 - To: April 2013

**POSSIBILITY OF RENEWAL/FOLLOW UP**

Renewable

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11.5

**PROJECT TITLE**
Project for the development of the capacities of the communities in Huaca Rajada and Sipán - PRODESIPAN

**THEMATIC AREA**
Archaeology, Formation, Anthropology, Literature

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**REFERENCE PERSON**
Emilia Perassi  
Full Professor  
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Faculty of Humanities and Philosophy  
Old Dept.: Dept. of Language Studies and Comparative Literature; New Dept.: Dept. of Foreign Languages and Literatures

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**OBJECTIVES**
Specific:  
1. Economic development;  
2. Sustainable tourism;  
3. Archaeological promotion of the region.

**MAIN ACTIVITIES**
1. Educational courses;  
2. Valorization of the naturalistic and archaeological area of the park;  
3. Updated outline of the cultural and anthropological problems regarding the beneficiaries of the project;  
4. Production of scientific publications and audiovisual materials.

**FUNDING SOURCE**
FIP (Italian-Peruvian Fund)

**DURATION**
From: December 2006 - To: December 2008

**POSSIBILITY OF RENEWAL/FOLLOW UP**
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**TYPE OF ACTION**
- Formation  
- Research  
- Project for the development of the archaeological area  
- Construction of local museum  
- Events/meetings  
- Books

**TARGET COUNTRIES**
Peru

**BENEFICIARIES**
1. Local communities  
2. Women  
3. Farmers

**EXPECTED RESULTS**
Transformation of a depressed area into a touristic destination through the promotion of its archaeological potential in order to improve the living conditions of the local community by stimulating the agricultural and artisanal activities.

**PROMOTING ORGANIZATION**
- MAIN PARTNERS  
Italian and International: University of Milan  
Local:  
1. Caritas Perú  
2. Asociación “Amigos del Museo de Sipán”

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**PROJECT TITLE**
Excavation and study of marine Triassic Vertebrates from the Guizhou and Yunnan Provinces

**THEMATIC AREA**
Palaeontology, Natural Heritage, Tourism

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**REFERENCE PERSON**
Andrea Tintori  
Full Professor  
e-mail: andrea.tintori@unimi.it  
phone: 02 503 15494  
Faculty of Mathematical, Physical and Natural Sciences  
Old and new Dept.: Dept. of Earth Sciences “Antonio Desio”

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**OBJECTIVES**
Overall: Knowledge of the major bio-events during the Early-Middle Triassic (250-230 millions of years ago).  
Specific:  
1. Study the new fossil fish/reptile faunas in Guizhou and Yunnan Provinces;  
2. Give support to local communities in managing their Natural Heritage;  
3. Give scientific support to the new National Geopark and related museums.

**TARGET COUNTRIES**
China (Beijing, Guizhou and Yunnan Provinces)

**BENEFICIARIES**
1. Farmers  
2. Ethnic minorities (Buyi and Miao Minority)  
3. Students

**EXPECTED RESULTS**
Improvement of the tourism in a quite poor mountain area through the valorisation of the very important Geo-palaeontological Heritage. The National Geoparks, the Museums and the possibility to see the excavation are already an attraction, even if the logistic is still poorly developed.  
The study of the several new, very rich fossiliferous sites from the Middle Triassic is throwing a new light on the marine life recovering after the biggest crises at the Permian/Triassic boundary about 250 millions years ago. The scientific aspects make this area a real nodal point for Palaeontology at the beginning of the XXI Century. Moreover, we will look for the best way to make this richness available to the public.

**FUNDING SOURCE**
Special Research funds from the Chancellor of the University of Milan for excavation in Guizhou (2006/6) and for visiting Chinese Collegues (2009-11). Major International Joint Research Project 40920124002 from National Science Foundation of China. Research project #8669-09 from National Geographic Society

**DURATION**
From: January 2010 - To: December 2012

**POSSIBILITY OF RENEWAL/FOLLOW UP**
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In this section of the book, some records that illustrate basic research have been placed, that were not included on purpose in the other sections or because their direct application in a certain area cannot be foreseen, or as there are multiple possible applications that can be performed in more areas and it would therefore be limited to “label” them.

The most important reason, however, is that these records are a bear witness that it is possible to perform an excellent activity of international cooperation for development even by means of the basic research, a cooperation which is very useful for training the researchers of the future and that has a largely positive impact not only on the researchers of the third countries that have been already trained, but also, as it can be inferred from some records, on our researchers through a stimulating exchange of ideas and technology that fosters the development of the human and scientific resources.
OBJECTIVES
Specific: Define protein dynamic properties

MAIN ACTIVITIES
1. Structural studies of proteins
2. Computer simulations
The collaboration covers the study of structural and dynamical properties of hemoproteins from unicellular organisms. The project has a theoretical value as it allows to access properties of macromolecules that are not experimentally measurable. The Italian side of the project dealt with X-ray crystallography experiments; the Argentinean side studied the dynamical properties through extensive simulative computer approaches. We focus on proteins derived from Mycobacteria as well as from Archaea and other unicellular organisms.

FUNDING SOURCE
MIUR FIRB (Italian Ministry for Education, University and Research - Fund for Investments in Basic Research)

DURATION
From: 2006 - To: 2007

POSSIBILITY OF RENEWAL/FOLLOW UP
Under exploration

PROJECT TITLE
INTENSIVE COURSE - EDITIONS 2008 AND 2009: Electron and Ion Microscopy and Micromanipulation:
common principles and advanced methods in applied sciences

THEMATIC AREA
Advanced Methodology

TYPE OF ACTION
• Education
• Research

TARGET COUNTRIES
Iraq

BENEFICIARIES
1. Researchers
2. PhD students

EXPECTED RESULTS
1. Hemorision of the development of intellectual skills required at a specialized level of professional preparation;
2. Promotion of the integration of the researchers in the international context;
3. Good follow-up represented by a suitable scientific/technological transfer of the competences acquired in Italy to the respective Iraqi Institutions and to industry.
The ideal development of this initiative implies a further and longer period of research abroad of the same researchers: this second step of the program was already activated in 2009 and 2010 by pilot-experiences.

PROMOTING ORGANIZATION -
MAIN PARTNERS
Italian and International:
1. Bicocca University, Milan
2. Landau - Centro Volta (Como)
3. Companies: FEI, St-Microelectronics
4. Dept. of Inorganic Chemistry, Metallorganics and Analytics, University of Milan
5. Dept. of Advanced Applied Mathematical and Statistical Sciences, University of Milan

OBJECTIVES
Overall: Project for the Internationalization of the Iraq Institutional-Scientific Structures and the collaboration with Italian Scientific and Academic Centers. The course offers a modern interdisciplinary approach, both theoretical and technical, to advanced microscopy and related applications with particular reference to electron and ion microscopy (TEM, SEM, FIB).
Specific: 1. Support the reactivation of the scientific and technological Iraqi system and break the isolation caused by the war.
2. High formation, research activation and technological transfer from university to industry. The scientific themes cover a wide range of applications (from biology to material sciences).

MAIN ACTIVITIES
1. One month of intensive training activity, (theoretical and practical) on advanced electron microscope and related technological applications addressed to Iraqi PhD students and researchers coming from different Iraqi Universities and research centers.
2. The course includes a general part (frontal lectures and demonstrations) and a specific training on some specialized topics (practical lab, experimental bench work and analyses of results). The employment of advanced mathematical methods (statistics, computer modelling) is included.
3. The high specialization activities take place in parallel in the two Universities, the University of Milan and the Bicocca University: theoretical frontal lectures, demonstrations, practical lessons, training.

FUNDING SOURCE
Italian Ministry of Foreign Affairs, General Directorate Cooperation for Development

DURATION
I: September - October 2008
II: September - October 2009

POSSIBILITY OF RENEWAL/FOLLOW UP
High possibility of renewal (2011), and/or extension of the project

REFERENCE PERSON
Maria Daniela Canda
Full Professor
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Phone: 02 503 14788
Faculty Mathematical, Physical and Natural sciences
Old Dept.: Dept. of Biology; New Dept.: Dept. of Biosciences
2. Understanding the mechanisms of gamete fucosidase overexpressed in insect cells; Drosophila

Overall: Characterization of cloned oBJ m Drosophila. The outstanding importance in order to understand the experience of the Professor Chuan-Xi Zhang Drosophila melanogaster. The outstanding in potentially relevant for the process of fertilization to elucidate the nature of molecules that are recombinant fucosidase in an effort for the purification and characterization of Drosophila gene encoding fucosidase. Successful collaboration on Drosophila for the purification and characterization of fucosidase aimed at developing the collaboration aimed at developing the collaboration.

Beneficiaries
1. Students
2. Women

Expected results
Successful collaboration on Drosophila fertilization aimed at developing the collaboration for the purification and characterization of Drosophila recombinant fucosidase in an effort to elucidate the nature of molecules that are potentially relevant for the process of fertilization in Drosophila melanogaster. The outstanding experience of the Professor Chuan-Xi Zhang on Baculovirus-insect cells system could be of a paramount importance in order to understand the mechanisms of gamete recognition in Drosophila.

Promoting organization
Ministry of Foreign Affairs - Italy

Main partners
Italian and International: University of Milan
Local: Zhejiang University, Hangzhou, China

Objectives
Overall: Characterization of cloned Drosophila fucosidase overexpressed in insect cells;
Specific:
1. Construction of recombinant baculoviruses;
2. Understanding the mechanisms of gamete recognition in Drosophila.

Main activities
1. Cloning of Drosophila fucosidase cDNA and Construction of expression vectors. The open reading frame of DmFuc cDNA was amplified by PCR. The primers comprised BamHI and XhoI restriction sites, respectively, to facilitate the cloning of the PCR product into the transfer vector pFastBac1 (Invitrogen) downstream of the viral polyhedrin promoter to generate pFB-DmFUC. After purification with the QIAquick purification kit, these PCR products were subcloned into the pGEM-T easy vector (Promega) and plasmid pGEM-DmFUC1 sequenced;
2. Expression of Drosophila fucosidase in the Baculovirus-insect cells system and optimization of the expression conditions; DmFUC proteins were produced by site-specific transposition using the Bac-to-Bac® Baculovirus Expression System (Invitrogen);
3. Amplification of recombinant viruses will be carried out;
4. Purification of recombinant proteins;
5. Characterization of the purified proteins.

Funding source
1. National Basic Research Program of China
2. National Natural Science Foundation of China
4. Ministry of Research of Italy.

Duration
From: July 2005 - To: July 2009

Possibility of renewal/follow up
Joint experimental thesis Italy-China
PROJECT TITLE
Mathematics - Computer vision: Research activities on issues related to reconstruction of dynamic scenes.

THEMATIC AREA
Computer Vision - Projective Geometry

TYPE OF ACTION
• Research

TARGET COUNTRIES
Israel (Jerusalem)

BENEFICIARIES
1. Researchers
2. University students

EXPECTED RESULTS
The research resulted in a series of scientific publications, among which:
2. GianMario, Besana; Bertolini, Marina; Turrini, Cristina - Instability of projective reconstruction of dynamic scenes near critical configurations

PROMOTING ORGANIZATION

MAIN PARTNERS
Italian and International:
Dept. of Mathematics, University of Milan
Local:
Prof. Amnon Shshua, Hebrew University of Jerusalem

OBJECTIVES
Overall: Research activities on Computer Vision
Specific:
1. Research activities on reconstruction of dynamic scenes, critical configurations for reconstruction, calibration of chambers, trifocal tensors;
2. Prof. Amnon Shahua was invited to the University of Milan.

MAIN ACTIVITIES
1. Prof. Shahua held a course within the framework of the PhD program;
2. The issues Prof. Shahua dealt with have been developed by researchers of the University of Milan and resulted in scientific publications.

FUNDING SOURCE
Fund for internationalization

DURATION
Started in: June/July 2004
Following contacts: until 2007

POSSIBILITY OF RENEWAL/FOLLOW UP
No possibility of renewal for now

REFERENCE PERSON
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Old and new Dept.: Dept. of Mathematics
The countries in which the projects are being carried out are:

- Albania
- Algeria
- Argentina
- Bolivia
- Bosnia and Herzegovina
- Brazil
- Burkina Faso
- Cameroun
- Chad
- China
- Colombia
- Congo
- Dominican Republic
- Ecuador
- Egypt
- Ethiopia
- Gabon
- Gambia
- Guinea-Bissau
- Ivory Coast
- Haiti
- India
- Iraq
- Israel
- Jordan
- Kenya
- Lebanon
- Malawi
- Mali
- Morocco
- Mauritania
- Mozambique
- Namibia
- Niger
- Nigeria
- Occupied Palestinian Territories
- Oman
- Peru
- Senegal
- Serbia
- Sierra Leone
- South Korea
- Syria
- South Africa
- Sudan
- Swaziland
- Tanzania
- Thailand
- Togo
- Tunisia
- Turkey
- Uruguay
- Venezuela
- Vietnam
- Zimbabwe

There are also projects that concern entire regions:

- South Asia: Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, Sri Lanka
- countries of the Central and Southern America
- countries of the Sub-Saharan Africa
- countries of the central and southern part of Africa.
- countries of the Sahel region: Mauritania, Mali, Burkina Faso, Niger, Chad, Senegal, Sudan, Nigeria, Ethiopia
- countries of the Mediterranean.
LIST OF PARTNERS

International Organizations
- European Union - Joint Research Centre (JRC)
- FAO
- ICS-UNIDO
- OECD, Division for the Official Testing of Agricultural and Forestry Tractors
- UNDP
- UNIDO
- World Health Organization

Italian Ministries
- Ministry of Foreign Affairs - Italian-Latin American Institute (IILA)
- Ministry of Health

Foreign Ministries and Agencies
- Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division, Honk Kong
- CAFMA (Argentinean Chamber of Agrimachinery Manufacturers)
- China Education Association for International Exchange (Beijing) China
- Chinese Ministry of Education, General Office for the promotion of Chinese Language (Han Ban)
- Chinese State Administration for TCM - China
- Department of Water Development Pemba (DWD) Tanzania
- Directorate-General for Antiquities and Museums (DGAM) - Damascus Syria
- Instituto Agronómico de Campinas Brazil - Automation and Engineering Centre (Jundiai, São Paulo)
- Iraqi Minister for High Education and Research
- Israeli Water Authority - Israel
- MINEPIA (Ministère Elevage, Peche, Industrie Alimentaire - Cameroun
- Ministry of Agriculture - Lebanon
- Ministry of Animal Resources - Niger
- Ministry of Health - Swaziland
- Ministry of Public Health - Guinea Bissau
- Ministry of Water and Irrigation - Jordan
- Palestinian Water Authority - Occupied Palestinian Territories
- Park Direction - Niger
- Zanzibar Water Department

Italian research institutes / Universities
- Alma Mater Studiorum-University of Bologna
- Bicocca University
- CeTAm - University of Brescia
- CICSAA - Interuniversity Centre for Agrifood and Environmental Cooperation for Development
- CIDETER - Investigation and Territorial Development Centre
- CRA - Council for Research and Experimentation in Agriculture - Milan (ex IVTPA)
- CRA - Council for Research and Experimentation in Agriculture - Montanaso Lombardo
- ICIS- Insubria Center on International Security
- Insubria University
- INT- IRCCS Foundation, National Institute of Tumours, Milan
- International Centre for Pesticides and Health Prevention - Luigi Sacco Hospital
- ISS (Istituto Superiore di Sanità-Higher Institute of Health) - Italy
- Italian Consortium for Agricultural Research - Agrital di Maccarese
- Italian Institute for Africa and the East, Lombardy Section, (IsIAO)
- IULM University Milan
Foreign research institutes / Universities

- African Centre for Clinical Trials - Kenya
- African Institute of Biomedical Science and Technology (AIBST), Harare - Zimbabwe
- Agencia Estatal Consejo Superior De Investigaciones Científicas - Spain
- Agricultural University of La Molina - Peru
- American University II Cairo - Egypt
- American University of Beirut (AUB) - Lebanon
- Association de Recherche en Virologie et Hématologie Paris - France
- Ben Gurion University - Israel
- Catholic University "Nostra Signora del Buon Consiglio" (UnI NSBC) - Tirana - Albania
- Catholic University of Leuven - Belgium
- Central Food Technological Research Institute (CFTRI) - India
- Centre de Suivi Ecologique Senegal
- Centre for the Analysis of Sustainable Agricultural Systems - Kennesaw, USA
- Centre of Bio molecular Research Pietro Anagnoni CERBA - Burkina Faso
- Charles University - Prague Czech Republic
- CIRMF - Franceville Gabon
- CNRFP - Centre National de Recherche e de Formation sur le Paludisme - Burkina Faso
- CNRS Montpellier II - France
- Council for Scientific and Industrial Research - South Africa
- CSIR - Central Drug Research Institute - Lucknow India
- CSIR Science South Africa
- Deutsches Primate Zentrum - Göttingen Germany
- Ecole Normale Paris - France
- El-Razi College of Dentistry - Khartoum Sudan
- EMBRAPA - Brazil
- Environmental and Industrial Safety Section - Indira Gandhi Center for Atomic Research - India
- Erasmus Universitair Medisch Centrum Rotterdam - Netherlands
- Foundation Biomedical Primate Research Centre, Rijswijk - Netherlands
- Foundation Institute of Food Technology - Bolivia
- French Institute of Eastern Archaeology (Institut français d’archéologie orientale - IFAO) - Cairo Egypt
- Fundacion para la investigación Nutricional - Spain
- Fundación Universitaria Juan D Castellanos - Colombia
- Guizhou Guanling National Geological Park - China
- Hacettepe University - Turkey
- Hanoi Medical University - Vietnam
- Harbin Institute of Technology - China
- Hebrew University of Jerusalem - Israel
- Hong Kong University of Science and Technology
- ICTA, Institute of Food Sciences and Technology - Central University of Venezuela
- ICTA, Institute of Food Sciences and Technology - Colombia
- INIA National Institute of Agricultural and Livestock Research - Uruguay
- Institute of Hygiene and Tropical Medicine - Lisbon Portugal
- Institute of Medicinal Plant Development - China
- IRD Montpellier - France
- IRI - International Rice Research Institute - Manila Philippines
- Jagiellonian University - Cracow Poland
- Karolinska Institute Stockholm - Sweden
- Korea Food Research Institute (KFRI) - Korea
- Kristineberg Marine Research Station - Fiskebäckskil Sweden
- Laboratoire d’architecture et fonctions des macromolécules biologiques, ESIL-CNRS-AFMB - Marseilles France
- Lebanese Agriculture Research Institute (LARI) - Lebanon
- Liaoning Normal University - Dalian China
- Liverpool School of Tropical Medicine - UK
- London School of Hygiene and tropical Medicine - UK
- Medical Research Council - Clinical Trials Unit - London UK
- Medical College of Nanchang University - China
- Medical Research Council - Clinical Trials Unit - London UK
- Mubarak City for Scientific Research and Technology Application - Egypt
- National Centre for Nutrition and Food Technology - Chad
- National Institute of Agro-Industrial Technology (INTA) - Uruguay
- National Superior School of Agro-industrial Sciences of Ngounouderé - Cameroun
- National Technology College - Uruguay
- National University Mayor De San Marcos - Institute of Tropical Medicine - Lima Peru
- National University of Colombia
- Peking University (PKU) - China
- Public Health Laboratory "Ivo de Carneri" - Zanzibar
- Robert Koch Institute Berlin - Germany
- Russian Academy of Medical Science - Moscow Russian Federation
- School of Energy Environment and Natural Resources - Department of Futures Studies, Madurai Kamaraj University
- Sultan Qaboos University - Oman
- Swiss Centre of Scientific Research in Côte d’Ivoire
- Swiss Toxicological Information Centre - Switzerland
- Technical University of Ambato - Ecuador
- Technical University of Crest - Greece
- Technology Institute San Ignacio de Loyola (ITESIL) - Dominican Republic
- Tibetan Medical and Astrological Institute of H.H. the Dalai Lama (Men-Tsee-Kang) - Dharmsala India
- Universidad Complutense de Madrid Spain
- Universidade de Brasilia - Brazil
- Université Cheikh Anta Diop de Dakar - Senegal
- Université Hassan II Ain Chock Casablanca - Morocco
- Université S. Esprit de Kaslik (USEK) - Lebanon
- Universidad Inserm Lausanne - Switzerland
- University of Aarhus - Denmark
- University of Abobo-Adjamé - Abidjan - Ivory Coast
- University of Adama - AMAE (Asella Model Agricultural Enterprise) - Ethiopia
- University of Ain Shams - Egypt
- University of Alexandria Egypt
- University of Buea - Cameroon
- University of Buenos Aires - Argentina
- University of Calicut - Kerala India
Italian local bodies
- Mountain Community of Cusio Mottarone (VB, Italy)
- Municipality of Milan
- USR (Regional Education Office Lombardy)

Foreign local bodies
- Ministry of Agriculture of the Province of Misiones - Argentina
- Municipalities in Lebanon
- Municipality of Concepcion - Uruguay
- Municipality of Dakar - Senegal
- Trade Centre of Concepcion (CECOM) - Uruguay

NGOs
- ACRA
- Africa '70
- AISPO NGO - Italy
- Anlais Lombardy Section - Italy
- Association Amigos del Museo de Sipán - Peru
- Association Ceu e Terras - Bissau - Guinea-Bissau
- ATCP (Association of Chadian Community for Progress) - Chad
- AVSI
- BioEconomy Foundation, Addis Ababa, Ethiopia
- Caritas Peru
- CCM NGO - Italy
- COE (Centro Orientamento Educativo) - Milan Italy
- Community of Sant'Egidio - Rome Italy
- COOPI
- COSPE NGO - Florence Italy
- COSV - NGO
- Engineers without Borders, University of Trento Italy
- Euresist Network GEIE - Siena Italy
- Foundation Bethléem de Mouda - Cameroun
- Foundation Pro sa NGO - Italy
- Fundación del Sur (Foundation of the South) - Argentina
- Hogar San Camilo - Lima Peru
- Indian Red Cross Society (Koraput District) - India
- Iriskaia Foundation - Barcelona Spain
- Ivo de Carneri Foundation
- Landau Network - Centro Volta (LNCV)
- Live in Slums
- MAPO (Argentinean Movement for Organic Production) - Argentina
- Medicines for Malaria Venture - MMV
- Mondoc NGO - Italy
- NGO Capen - Niger
- NGO ICEI - (Institute of International Economic Cooperation) - Italy
- NGO Karkara - Niger
- NGO Sana Logone - Municipality of Yagoua - Cameroun
- Penta Foundation NGO - Padua Italy
- PIME (Papal Institute of Foreign Missions) - Italy
- Saint Lawrence Foundation
- SNV Ethiopia - Netherlands Development Organization ONG - Ethiopia
- The Missionaries of Consolata - Tanzania
- Waves World Association of Volunteers for Emergencies and Solidarity - NGO - Italy

Other partners
- "Luigi Sacco" Hospital Milan - Italy
- 45SC AG (SME)
- Aghrymet Nger
- Andegardo Farm in Cernusco Lombardone - Italy
- Anoilate Hospital in Mungbire - Congo
- Asella Dairy Cooperative Union - Ethiopia
- Associate office MPM
- Association Cité de la Lumière, de Amoutchou - Togo
- B.L. Tezza Elementary School managed by the Camillians, Karungu - Kenya
- Bio detection System - Netherlands
- Cariplo Foundation
- CEM (Cooperative Elevreux Maroua) - Cameroun
- CLN (Cooperative of Dairy Products of Niam-ey) - Niger
- Combonian Missionaries
- Cooperative of farmers of Feghal - Lebanon
- Cosmos
- Delek Hospital - Dharamsala India
- Don Bosco School in Alexandria Egypt
- Ecogranjas Cooperativa Agraria Limitada - Uruguay
- EcoTechSystem srl - Italy
- Expo 2015
- farmers in Lebanon
- FEI company
- Field Museum Chicago - USA
- Filmare Nile textile company, Alexandria (Italian office in Zocco d’Erbusto) - Egypt and Italy
- Garden of Eden Rehabilitation Centre
- Green - Environment Consultants
- Hôpital de la Pitié Salpêtrière - Service de Médecine Infectieuse - Paris France
- Hôpital Missionnaire St.Jean de Dieu, Afagnan - Togo
- Hospital Carlos III Madrid - Spain
- Hylobates Consulting - Italy
- Informa SRL - Rome Italy
- Laboratoires Idexis SARL - Montpellier France
- LICA Pharma
- Museum of Palmitra - Syria
- NeED Pharma
- Oddissi Research Laboratories - Bhubaneswar India
- Rotary
- San Raffaele Hospital- HSR - Italy
- schools in Lebanon
- Siteki Hospital - Swaziland
- Sololo Hospital, Kenya
- St. John of Good Hospital – Tigania, Meru - Kenya
- St-Microelectronics company
- Textile company Ahlan, Alexandria - Egypt
- Virco BVBA - Mechelen Belgium

Universities and local bodies:
- University of California, Davis - USA
- University of Capetown - South Africa
- University of Copenhagen - Panum Institute - Denmark
- University of Delhi - India
- University of Ege - Turkey
- University of Ghent - Belgium
- University of Heidelberg - Germany
- University of Ibarra - Ecuador
- University of Ioannina - Greece
- University of Kolkata - India
- University of Ljubljana - Slovenia
- University of Lima - Peru
- University of Leiden - Netherland
- University of Lima - Peru
- University of Oxford - UK
- University of Sao Paolo - Brazil
- University of Southern Denmark - Denmark
- University of Traditional Chinese Medicine of Nanjing - China
- University of Tunis - Tunisia
- University of Tunis El Manar
- University of Victor Segalen - Bordeaux France
- University of Zhejiang Hangzhou - China
- University of Zurich - Switzerland
- University UNDOH - Port au Prince - Haiti
- Yarmouk University - Jordan
LIST OF SPONSORS

International Organizations
• European Union
• FAO
• FAO - IFDCP (Decentralized Cooperation Programme Italy)
• ICS-UNIDO
• IMF
• NATO
• OECD
• UNDP
• Unicef
• World Bank

Ministries
• Agriculture, Fisheries and Conservation Department, Plant and Pesticides Regulatory Division, Honk Kong
• Brazilian Ministry of Science and Technology
• China Education Association for International Exchange (Beijing) China
• Chinese Ministry of Education, General Office for the promotion of Chinese Language (Han Ban)
• FIP (Italian-Peruvian Fund)
• Italian Ministry of Health
• Italian-Latin American Institute (IIA)
• Korea: Ministry of Education and Technology (MEST) - Korea
• Ministry of Education of China
• Ministry of Foreign Affairs (DGCP, DGDC)
• Ministry of Science and Technology of Vietnam
• MIUR (Ministry for Education, University and Research, FIRB - Fund for Investments in Basic Research)
• MIUR Ministry for Education, University and Research
• National Basic Research Program of China 2010-2014

Research Institutes/Universities
• CeTAmb - University of Brescia - Italy
• Charles University - Praga Repubblica Ceca
• CIDETER - Investigation and Territorial Development Centre
• Council of Scientific and Industrial Research - New Delhi India
• El-Razi College of Dentistry - Khartoum Sudan
• French Institute of Eastern Archaeology (Institut français d’archéologie orientale - IFAO) - Cairo Egypt
• Harbin Institute of Technology - China
• Insibia University - Italy
• IRRI - International Rice Research Institute - Manila Philippine
• Jagiellonian University - Cracow Poland
• National Geographic Society - China
• National Institute of USA
• Nutrition Centre of Goundi - Chad
• Sultan Qaboos University - Oman
• University of Calicut - Kerala India
• University of Gastronomic Sciences (Pollenzo - CN) Italy
• University of Madurai Kamaraj - India
• University of Medellin - Colombia
• University of Rio Grande do Sul - Porto Alegre Brazil
• University of Sao Paolo - Brazil
• University of Studies of Milan - Italy

Italian local bodies
• Autonomous Province of Trento
• Lombardy Region
• Mountain Community of Cusio Mottarone (VB, Italy)

• National Natural Science Foundation of China
• Municipality of Milan

**NGOs**
• Acra
• AISPO NGO - Italy
• Anlaids Lombardy Section - Italy
• Association AIDA - Madrid Spain
• Association Ceu e Terras - Bissau - Guinea Bissau
• AVSI
• BioEconomy Foundation, Addis Ababa, Ethiopia
• Community of Sant’Egidio - Rome Italy
• COSPE NGO - Florence Italy
• Foundation “Nostra Signora del Buon Consiglio” - Albania
• Ivo de Carneri Foundation
• Saint Lawrence Foundation
• Smile NGO
• Yacouba for Africa NGO

**Other sponsors**
• “Luigi Sacco” Hospital Milan Italy
• Axxam spa
• Biodiversity International
• Cariplo Foundation
• Expo 2015
• Rotary