

“FOOD to BRAIN & BRAIN to FOOD”
“ Identifying research needs on malnutrition in Africa” .

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www.edscuola.it/lre.html ; www.wbabin.net



FP7 CALL FOR AFRICA - TWO YEARS PROGRAM – 2010-2012

Africa: Henry Rousseau : <http://files.splinder.com/d5fa6689e1ac1ff82da2f4660d778405.jpeg>

ABSTRACT : The project titles “Food to Brain and Brain to Food” is present in order to participate to the Call for Africa KBBE KBBE.2010.2.2-03, in fully benefits to favour future co-operation and research activities. This project was initiated with a Consensus Meeting that was held in Florence (16/Oct/09) and now bring together 10 Partners (3 Eu +1 Israel and 6 from Sub-saharian Africa) to develop an unique program on the achronym FtoB And BtoF. In two years (2010-2012) the partnerhip would intensify actions against malnutrition through a multidisciplinary mapping of fronties of EU and African research, oriented to erase Manutrition in achieving the Millennium Development Goals. To this goal would be dedicated the first International Congress organized in Tanzania in 2010. The first semester was dedicated to share the more recent research activities in nutrition based on concepts developed in Nutrigenomic science and their applications to more adequated nutritional strategies. During the first year the project should lead to an increased impact of the research and innovation oriented to integrate Nutrition and Agriculture to develop Nutraceutical products to sustain food intake with appropriated supplements. A strong effort will dedidated to an enhanced communication to find and link good sources of information and to share good practices to local stakeholders and to maintain a good communication to the politial level to strengthen the Europe Africa cooperation. The second year activities would be characterized to develop a more efficient impact to disseminate project ongoing and final results on the basis of the interactive Web and training activities and through the organization of two FtoB and BtoF international congress in Kenya and in Ghana, both oriented to share the results obtained for Identifying Research Needs on malnutrition in Africa and to contribute to the eradication of malnutrition and to the human, social, and economic development of African Nations.



<http://www.viaggiscoop.it/foto/295/4205/34774.jpg>

– 1.1.1) Premise

- Malnutrition occur in people who are either undernourished or overnourished , therefore a good nourishment in society is a fundamental function of advance on farm to fork KBBE projects.
- Malnutrition is a multifactorial complex and problematic challenging issue and it will be imperative to design a multidisciplinary research and innovation program participating to the call FP7 KBBE 2010.2.2-03 aiming to favor an intensified actions against malnutrition in countries most severely affected and to furnish some responses that are commensurate to understanding the complex social and ecological contexts in which malnutrition and hence infection and more dangerous DNA damages can occur in population generating nutrition diseases both in the body and the mind.
- **A) The First aim of FtoB & BtoF project** will be to analyze all the possible action to prevent malnutrition before it becomes chronic through a screening process and a critical review of research and strategies, normally forced to work in emergency conditions.
- The primary objective is to map current nutrition research programmes and activities and to identify research needs to tackle malnutrition emergences that have an tremendous impact in human, social, and economic cooperative development between Europe and Africa for opposite reasons, in Africa generally due to under-debilitating nutrition (marasma ,kwashiorkor,...) and vice versa in Europe for the nutrition imbalances (Obesity, (or psychological -disorders (anorexia, bulimia).
- The state of nutritional emergency cause an excessive emphasis on medical therapy in resolving the fundamental problem of severe or acute malnutrition. In spite of this it is evident the need of a critical revision of malnutrition needs to be dealt with multidisciplinary framework matrix capable of focusing the complex problem of not equilibrated metabolic flux not only in terms of quantity of shortage or abundance of food .
- The basic idea of FtoB//BtoF proposal is to develop a more comprehensive survey of recent research on the metabolism on the basis of innovative projects especially focused on advanced research and applications of Nutrigenomics and Nutrigenetics as a new European perspective of post-genomic era. Therefore through sharing a discussion focused on the evidence which supports genetic influences on nutrition, the FtoB&BtoF partnership will become able to prepare a dissemination of new approaches on nutrition & health which are associated with mental and body performances.
- The expected result of this preliminary activity will be to get the basis of a critical change about the obsolete conception nutrition and metabolic functions, based on an old thermodynamic and mechanical equivalence between food and energy, normally measured in "calories" for the diets. This conceptual change is based on Nutrigenomics and aim to go forward an advancement of understanding the relationships between human nutrition and well being for improving and disseminating the KBBE (Knowledge based Bio-Economy). strategy trough a coopetation activity between Europe and Africa .
- **B) A subsequent aim** will lie in a sharing method to integrate nutrition , agriculture , and health aiming in establishing priorities, strengthening commitment and identifying possible needs for resources, and synergies and cooperative efforts to contribute to the human, social, and economic development of African nations. The expected result of the core aim of FtoB&BtoF project is to produce and disseminate a multidisciplinary result based on the integration between advanced nutrition, high quality of local agriculture and a better health and well being , that are effectively connected in a unique complex problem in order to favor the eradication of malnutrition this because malnutrition represent a situation especially in sub-saharian Africa that cuts productivity and food security perpetuating a downward spiral

into ill health and poverty in Africa. Finally the FtoB&BtoF proposal would analyse the possibility to launch an increasing awareness about natural solutions for promoting healthy nutrition and healing through improving the production of nutraceutical fortification of food in sub.saharian Africa.

-1.1.2) Conceptual Framework. Nutrigenomics: The Genome–Food Interface

– The FtoB&BtoF project would enhance the European added value of European Research Area (ERA) to contribute to the eradication of malnutrition especially oriented to “ *Identifying research needs on malnutrition in Africa*” .

– Hippocrates said “Let food be thy medicine and medicine be the food” , this old sentence punctualize that by focusing the energetic approach diets can result unbalanced diets in relation to the dairy need to rebuilt our organism on the basis of genetic's information.

– - Today's Nutrition – biology understand that active food -nutrition activity alone cannot explain the molecular processes that ultimately governing the food -gene interaction represent the knowledge that become necessary to controll human health and well being.

– - There is increasing evidence that DNA alterations, occurs in the absence of overt exposure to metabolic anti-toxicants, so that DNA instability (especially in relation to oxidative mt-DNA damage), becomes itself a sensitive marker of nutritional deficiency that generate malnutrition.

- Following the Nutrigenomics science findings the FtoB // BtoF project will operate a conceptual change to underlying causes of malnutrition . Nutrigenomic science advancements is a fundamental endeavour for improving dietary intervention finding a correspondece with diagnosing genome instability (chromosome breakage, chromosome rearrangement, gene amplification and chromosome abnormality) that affects nutritional deficiency.

- Therefore the project FtoB// BtoF ,focusing Nutrigenomics research explaining how dietary factors can regulate the metebolic mitochondrial activities in mt-DNA repairing dynamics, would develop cooperation activites between a selected partnership in Europe and in Africa , to modify the current trends about food nutrition favouring a conceptual innovation . In fact traditional nutrition science mostly remains focused on the equivalence in dietary requirements based on an corrispondence between food income and quantity of energy, as it is considered as dominant part of popular culture, and the beliefs, practices, and dietology counseling. In spite of this tradition modern Nutrigenomics represent an alternative point of view on dietary requirements driven by the knowledges on genetic -nutrition.

In fact the nutrition science recently is looking to optimal genome maintenance during the various stages of life, such as infertility, foetal development, cancer and neurodegenerative diseases.. etc caused by malnutrition. . So that the FtoB //BtoF project referring to the innovative point of view of Nutrigenomics research in gene -Nutrients interactions, permits renovate the obsolete culture that worldwide affects eating practices to erase malnutrition and to meet the Millennium Development Goals .

Recently cross-country studies on malnutrition both in Europe and Africa , are used in arriving at the following determining factor .Hence today all over the world there is need of a new conceptualization of nutrition on the basis of the enhancement of Nutrigenomics research and its dissemination for improving high quality of food including nutraceutical supplements and functional production .Therefore to challenging in identifying and finally to meet research needs on malnutrition the project FtoB&BtoF has aimed to undertake a multidisciplinary framework that will feed into the addressing of societal needs within the aim to overcome malnutrition in Africa.

-As in the case of “*Spirulina*” e.g. a dietary production from aquatic micro-algae, put in a good an evidencethe health and healing effects to improve weight-gain and correct anemia in both HIV-infected and HIV-negative undernourished children because of its excellent nutritional quality of support of essential fatty acids, minerals and vitamins. More in general nutraceutical supplement production can be a key driver to eradicate malnutrition, achieve food security and bridge the health divide throughout the world.

In addition an activity in facilitating entrepreneurship for promoting Nutraceutical production in Sub-Saharan Africa will be made proposing a set of specific policy interventions that African governments and favouring the creation of national and global linkages and networks with European entrepreneurs , in order to get a significant implications for new business creation, employment development and economic growth in Africa.

- In conclusion following the Nutrigenomics science findings the FtoB//BtoF project will operate this change as a fundamental endeavour to modify the current trends about Food nutrition favouring a conceptual innovation , this because nutrition till now remains very much a part of popular culture, and the beliefs, practices, and dietology counseling, mostly working in an obsolete culture that worldwide affects eating practices of malnutrition.

-Poverty in Africa has a root cause of undernourishment and malnutrition. For instance the “Kwashiorkor Syndrome” is not a consequence of caloric undernutrition but is caused by chronic malnutrition in vitamin's

complex deficiency concomitantly with the carence of sulfur-containing amino acids.

More in general despite the efforts to reduce undernourishment unfortunately in Africa persists a high level of malnutrition, in spite of the declared need for "adequate access to safe and nutritious food". (1)

So that a new critical contribute to the problem of malnutrition vulnerability can be find to enrich an appropriated solution through an integration of Nutritional and Agricultural research to identify more effective and sustainable interdisciplinary research needs with a planned cooperation partnership between Europe and Africa.

- Today the problem of an inadequate nutrition especially in a critical age, as it show by "*fNMR- imagining technology*" , produces permanent brain damages with dangerous impairment of brain rhythms regulating intellect and emotion. Hence the effects of malnutrition during the sensitive developing years of children are apparent not only in bodily structure and functioning later, but they effects the intellectual skills and the psychological realm.

Here without a solution of this problem in the future people especially in Africa may suffer from severe malnutrition if nutritional and agricultural sciences would be not able to enhance cultural and societal patterns of creativity to avoid that many generation are exposed to such condition of malnutrition and undernutrition.



http://article-niche.com/news_images/news_Genuine-African-Art-Paintings-For-Sale.jpg

– 1.2.0 What are the main ideas that led you to propose this work?

– 1.2.1) - MISSION

– As described in the conceptual framework a novel way of thinking about nutrition fortification and health and well being personalized supplementation is done by Nutrigenomic science, giving a great cultural and scientific implication to the future overcoming of the status of current trend of understanding about nutrition permitting to innovate the Brain/Body health in relation to an integrarion of current research addressed to the activities on Fork to farm: Food (including seafood), health and well being. In addition following Nutrigenomics advanced researchers the FtoB//BtoF project will be able to take in consideration the interferences between Human Genetic Variation and Nutrition- metabolic functions , focusing the needs of healthy food in relation to different worldwide ethnic populations .

- Furthermore across the context of a renovation of conceptualization on nutrition a multi-disciplinary and integrated approach, taking into consideration broader socio-economic factors, will be open with appropriate stakeholders and local and/or regional actors. This important discussion will took place on line against the backdrop of the financial crisis, for improving a sharing method aiming to integrate nutrition , agriculture , and health , within a goal to tackling nutritionand health inequalities in Europe and in Africa to be useful for bettering EU cooperation policy for closing the gap

In particular the debate among FtoB&BtoF partners lders will contribute to find some solution to transform the vicious cycle of the traditional negative health-agriculture feedbacks into a more virtuous cycle of self-reinforcing primary prevention of health and agricultural problems. This can be possible with an action forwarded to enhancing nutraceutical and functional food industries in Africa in order to facilitate an pioneered and alternative way of seeking to novel food business obtained from the extraction from the high bio-diversity of nutrients (as polyphenols and antioxidants carotenoids etc) contained in African plants and exotic fruits, vegetables or herbal phytonutrients .

- Finally the FtoB&BtoF project will to create and to develop possibilities for an world wide open communication and cooperation base on the project results through Coordination and integration FtoB&BtoF activities in *Identifying research needs on malnutrition in Africa* . *The goal of the final phase of the project would be to get a great impact in disseminating* relevant topics and priorities on erasing malnutrition brought up during the FtoB&BtoF WP's activities in order to favor future concrete research projects, and in a way that innovative findings can be conveyed to support decision-making at international level in order to obtain a

greatly increase of achieving the Millennium Development Goals.

- 1.2.2.) - Main Project' Goals .

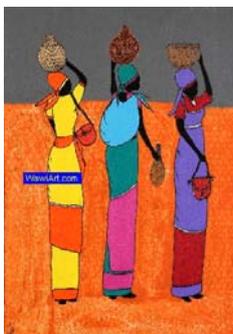
In addition to the mission to assemble and to disseminate the more recent research on genome nutrition focusing some damaging effects of nutrients deficiency the FtoB//BtoF project intends to focus and improve an important relationship between agriculture and nutrition innovation aiming to meeting the above mission through supporting innovative cooperation activities between Europe and Africa.

Follows a fundamental list of Project's goals to enrich the a better nutritional status especially to vulnerable population groups having an acute risk of malnutrition :

1. Identify the needs for research and development programs on nutrition enabling the transition from a situation of emergency towards development and eradicate malnutrition, as requested by the Millennium Development Goals.
2. Favour a conceptual change on nutrition through the dissemination of the most recent studies on nutrigenomics and in particular on the examination of the molecular connection between food and the reaction on our genes (the role of Mithochondral DNA in the metabolic function and the importance of antioxidants and micronutrients for the prevention of food-related diseases and the promotion of immune activities through healthy lifestyles.

See : http://www.edscuola.it/archivio/Ire/UNDERSTANDING_NUTRIGENOMICS.pdf)

3. Define a path between the two extremes of nutritional dietary assessment, through a comparison between different malnutrition pathologies, in order to suggest optimal healthy diets based on the habits of the various ethnic populations.
4. Define and promote a science-based food model for any specific territory (rather than tradition-empirically based), taking into account that genetic variation and epigenetic events alter requirements for, and responses to, nutrients, in order to lower thr Direct and indirect causes of malnutrition through supporting the extension of a ERA- KBBE research in Africa.
5. Develop a strategy, an assessment and an evaluation of territorial nutritional programmes, according to the dietary needs of different age and target groups.
6. Sustain the maintenance of organoleptic and nutritional properties of natural products and their cooking manipulation, suitable for the preservation of functional nutritional characteristics. (Main point: sharing best practices of culinary processing for improving greater quality of food intake taking into consideration the excellence of cooking and life stiles in Africa and in Mediterranean area.
7. Explore the possibilities to create a foundation for the North-South policies and communication strategies for improving R&D and training for erasing malnutrition in Africa with a vision for an alternative disease prevention strategy based on the diagnosis and nutritional treatment of genome instability depending on an



individual's genetic background to favor the development of Genome Health Clinics.

<http://www.wawiamasha.com/Wawiar/..%5Cweb%5Csmaller%5CPaintings%5CPeopleOfAfrica%5Cwomen2.jpg>

- 1.2.3.1) - Project Description

A pivotal ideas useful to fulfill the objectives set by the *Millennium Development Goals*, is focused on developing Nutrigenomics criteria in order to give a contribution to strongly reduce the present level of malnutrition by 2015, and to eradicate hunger and to achieve food security. Therefore a sustainable programme to reply to the fundamental topics addressed by the FP7 KBBE 2010.2.2-03 CSA call will be feasible because it will be based on an adequate information and diffusion of Nutrigenomics research in order to contribute further whithin new concepts and objectives to the reduction of world food insecurity. The above will be the principal idea of the "**Food For Brain and Brain for Food**" program that would explicitly identify and sharing innovative research enhancement of Nutrigenomics and to link conceptual innovation to the other related topics of Theme 2, in Food, Agriculture, and Fisheries and Biotechnology. In oparticular the core activities of the project will be focused to map current nutrition research programmes and activities and to identify research needs to tackle malnutrition in Africa, particularly in sub-Saharan Africa. This can be feasible working in a networked partnership driven by a multi-disciplinary and integrated method organised through a balanced patrtnership's participation of researchers and stakeholders between Europe and Africa.

The efficiency of FtoB&BtoF activities should be evaluated opening a permanent forum of **Consultative Group** on line between partners and stakeholders identify different critical approaches to evaluate research gaps and opportunities for collaboration to meet the challenges of “ **Identifying research needs on malnutrition in Africa**”, and to support the development of sustainable alternatives focused on the innovation of high quality agri-food production having attention to the food fortification through nutraceutical additives and functional food ingredients in order to obtain a greatly increase of achieving the Millennium Development Goals to eradicate extreme poverty and hunger, to reduce child mortality and to improve maternal health.

- 1.2.3.2) - Describe in detail the S&T objectives.

Starting from the knowledge of the state of the art it is known that the problem of chronic undernutrition in Africa and its direct and indirect effects, multi-faceted and integrated, and have deep roots in a multiplicity of factors as socio-economic, cultural, environmental, political, scientific, technological and educational factors. In that context the project FtoB&BtoF, first of all, would favour to overcome ill-health vicious circle going from maternal and infant chronic malnutrition that make a serious situation, serious of chronic diseases. Besides the project FtoB&BtoF look to the development he Nutrigenomics science and Nutraceutical production can help the low agricultural food productivity in Africa. To enrich the above two objectives the conceptual structures which bring about this problem need critical re-evaluation, particularly in terms of an appropriated networking strategy driven by a **Reflective Practice** for sharing and expanding a process of conceptual innovation in order to “ **Identifying research needs on malnutrition in Africa**” and to develop an increased agricultural quality of food productivity, both in quantity and quality, to the end to enrich a better nutritional status in Africa.

The “ **Reflective and interactive method**” (see: WP 3.2) that lies at the basis of networked communication innovative endeavor is very useful to build up knowledge innovation between Europe and Africa following a synergy to map current nutrition research programmes aiming to activities and to identify research needs to tackle malnutrition in Africa, particularly in sub-Saharan Africa.

The “ **Reflective and interactive method**” to collect predictive drivers for reducing malnutrition is target to confront standard nutrition programmes with the new dietary requirements coming from nutrigenomics research , best-practices of healthy diets , and interactive tools of communication for building up a better shared understanding to fortify adequate nutrition levels both in Europe and in Africa.

Specifically, the Project objectives fare focused for sharing ideas, competencies and resources are basically outlined as follows:

a) The project "FtoB//BtoF" would identify the research problem of dietary malnutrition (and under-nutrition) especially in relation to young children and infants in all partner's African states analyzing issues and literature related to "child care nutrition" both for brain damages and body health.

b) Since malnourished children are at higher risk, the project "FtoB//BtoF would propose short-term interventions getting , as expected results, ') setting in each national partnership's context, a revision of appropriated nutritional dietary pediatric guidelines , ") enhancing advanced nutrition education: about prevention and treatment of infections, food supplementation etc., "") enhancing prevention conditions to bacterial contamination in food and animal feed security

c) Effective Solution to cut malnutrition in Africa will be discussed among "FtoB//BtoF" partners to share ideas for innovative Nutraceutical addition for bettering diets which includes increasing essential metabolites and micronutrients fortification (vitamins, iron, and zinc , phosphorous and other ingredients).

d) Understanding how bio-nutrient factors can overcome the lacking or deficient nutritional sources in the diets in Africa, besides the project "FtoB//BtoF" will identify children-at-risk for malnutrition and target them for improving innovative production of the quality and security of food .

e) The Project "FtoB//BtoF" would focuses the association of malnutrition in relation to the more advanced Nutrigenomics science to favour a development of new criteria of nutrition and diets counseling, for specific different ethnies .

f) The solutions of malnutrition proposed by the project "FtoB//BtoF will include perspectives towards sustainable agriculture for developing sub-Saharan African countries within particular attention to the innovative options coming from life sciences and biotechnologies.

g) Favour agricultural practices for long-term interventions in order to include improvement in the economic and environmental conditions through an better cooperation between Europe //Africa.

h) Building bridges of common understanding among differences in paradigms, worldviews, mindsets, cross sectors, and professional languages.

- 1.2.3.3.)--> Describe the overall strategy of the work plan (maximum length: 1 page).

Overcoming Malnutrition in Africa is one of the Millennium Development Goal” : finally an important strategy of FtoB&BtoF multidisciplinary project will be mainstreaming the R&T innovation to improve links between high quality of food production and nutrigenomics research tacking in consideration broader socio-economic factors to promote the participation to appropriate stakeholders in order to enrich a sustainable change through a rapid implementation of local or regional government policies targeted for improving nutritional well-being both in Europe and in Africa through a complementary strategy of research & development of KBBE. The above in order to assess and parameterize policy and other research and cultural intervention

with regards to their impact equilibrate malnutritions levels in Africa and in Europe by the year 2012

- **A specific section A-** of the Working Plan, named **“Brain to Food”** will be dedicated to the specific issues in order to develop plans to identify future research needs in nutritional field opening multidisciplinary communication and cooperative actions related to the *key words: Nutrition, Malnutrition, Denutrition, personalized nutrition, healthy diets and poor diets and age related diseases and disorders.* *The core thematic of this A- section* will be focused to favor the reduction of malnutrition in child and pregnant mother in Africa and the child obesity in Europe , the two different problematic can identify a common source of multi-disciplinary Nutrigenomics research, to adequate both malnutrition problems to new nutraceutical / functional food sources for healthy diets

- **A second section B-** of the Working Plan , named **“Food to Brain ”** will be dedicated to induce a reflection on and to advance the state of knowledge on the multidisciplinary areas related to the following priority setting through a collaborative networking for future research improvement : sustainable agriculture, hunger/satiety, food choices, joint with some other Cross- Thematics as , innovative food and feed industry-processing, ,improved quality and safety of food, beverage and feed security.

The core thematic of this B- section will be focused to favor trends and challenges correlated with enhancing the role of food agro-industries in overcoming malnutrition, in relation to favouring sustainable economic growth and employment generation through the KBBE 2.2 cooperation and training activities between Europe and Africa.

- **1.2.3.4. J-Forecasting a multi- disciplinary strategy:** Africa faces serious challenges in multidisciplinary and multi actorial effort for sustaining its development and sustainable research on malnutrition . The project FtoB&BtoF proposes two complementary key-strategies for improving a better health for Africa :

- **Solution: a)** The role of Nutrigenomics to develop personalized diets in different ethnic and living environment. Nutrigenomics dissemination bringing together nutrition innovation, health and well being will be developed by the strategic partnership toward improving public and personal health through nutritional and dietary interventions. The above will be the focus of the first strategy that can be developed tracing how public health and gene-nutrition can be used as an agenda both in agriculture biotechnology and in biomedicine. The centrality and importance of food in health and well-being is well recognized and, with the developments in genomics, it has also been used as a tool for public health-related policies of nutraceutical food production and commercialization. This perspective embodied in the KBBE extension strategy would be discussed in the first FtoB and BtoF Annual Congress to give some good solution in **Identifying research needs on malnutrition in Africa** developing the public understanding of nutrigenomics in an innovative public health perspectives. Several ethical and governance issues in applying nutrigenomics to public health and the implications for public policy will also be considered.

- **Solution : b)** The role of research innovation in a broader KBBE development , linking agri-food innovation to health through the production of nutraceuticals dietary supplements and functional foods . - The partners of FtoB& FtoF will develop this solution through assist and improve a sustainable collection and cultivation practices of medicinals and botanicals focused on quality issues of African indigenous plants including herbal teas and spices, essential oils and butters, other natural medicinals to improve nutraceutical production for health and nutrition. In particular this approach to find Nutritionally Enhanced Products derived from soy, potato, peanut products address malnourishment through the preparation of locally “Ready to Use Therapeutic Food” (RUFT) address to malnourishment rehabilitation. Furthermore this cross thematic solution that will include socio economic factors, involving stakeholders and local/ regional actors ,will act to an essential factor to develop in collaboration with Eu partners, an international target audience about the salutistic properties of African and to gain a further improved sustainable collection and cultivation practices of medicinals and botanicals, and focused on quality issues of African indigenous plants production and



commercialization.

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1.2.3.5. J-WORK PLAN of FtoB&BtoF broken in seven Work Packages:

- The work plan of FtoB&BtoF Proposal following the conceptual framework would break in those Work

Packages: --

- Section 1.0) BRAIN for FOOD

WP.1.1.) Understanding innovation of dietary factors to erase malnutrition in Africa as an application of Nutrigenomics and system biology. (Nutrition -Group of Partners -->**N.1**)

WP.1.2.) Understanding innovation of dietary factors by means functional food and nutraceuticals to erase malnutrition in Africa (Nutrition -Group of Partners --> **N.2**)

- Section 2.0) FOOD for BRAIN

WP.2.1.) Forecasting the S&T innovation for food production including Nutraceutical ingredients and functional foods to erase malnutrition in a strategy driven by the Millennium Development Goals (MDGs) (Agriculture Group of Partners --> **A.1**) (see attaches Notes)

WP.2.2.) Forecasting the strategy for improving the nutrition impact of Agriculture and Industry interventions through traditional, local, seasonal food. (Agriculture -Group of Partners --> **A.2**)

- SECTION 3.0) + (Support Action, Stakeholder or Sub-Contractors)

WP.3.1.) Coordination EUROPE //AFRICA High quality research in the transdisciplinary area of Agriculture, Nutrition Health and well being. /SA.1)

WP.3.2.) Identify research needs methodology and resources for strengthening research efforts and coordinated actions at global level to tackle the malnutrition issue./SA.2) (see attached Notes)

WP.3.3.) Dissemination activities through ITC // Web, Newsletter, Blogs, Facebook etc. /SA.3)
